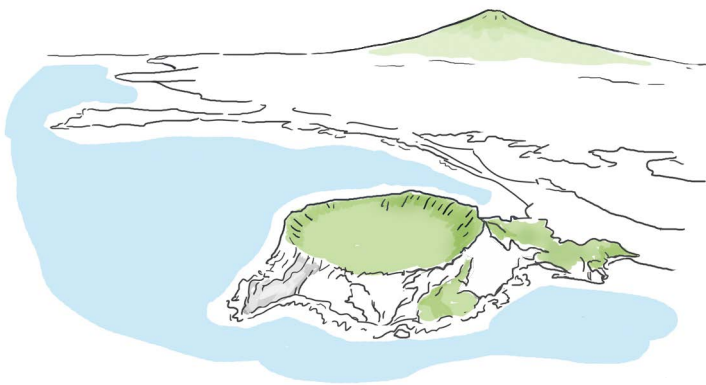


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KNS 2017 Spring 춘계학술발표회

KOREAN NUCLEAR SOCIETY

2017. 5. 17(수)~19(금)
제주 국제컨벤션센터

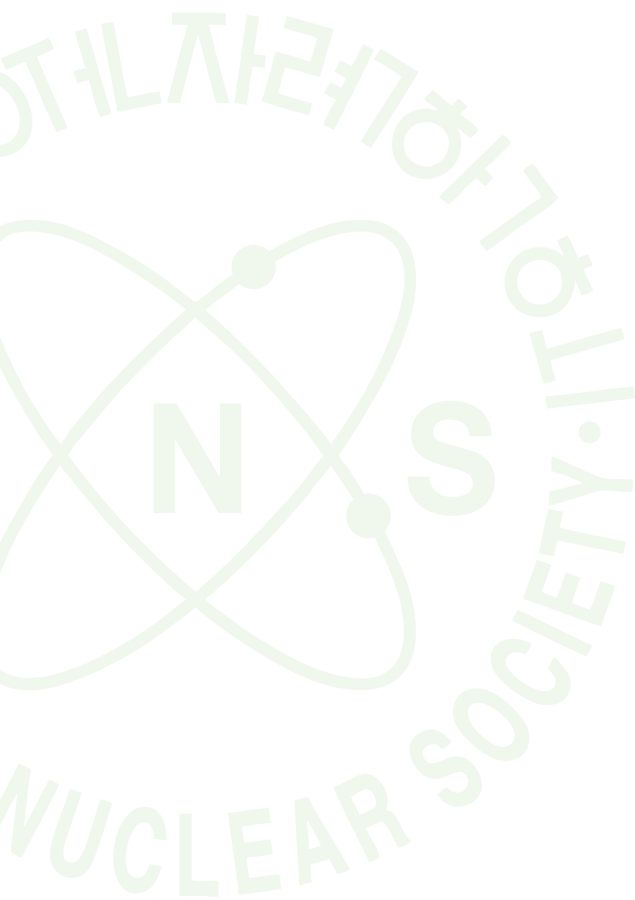


사단법인 한국원자력학회
KOREAN NUCLEAR SOCIETY

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사단
법인 한국원자력학회
KOREAN NUCLEAR SOCIETY

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 - 21 G 국내 방사선 계측기 및 입자검출기 기술 워크샵
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 - 23 L iPOWER 인간기계연계(HSI) 설계개발 Workshop
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 - 31 2분과 원자로물리 및 계산과학(Reactor Physics and Computational Science)
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 - 61 7분과 양자공학 및 핵융합기술(Quantum Engineering and Nuclear Fusion)
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 - 75 한국연구재단 원자력대학(원)생 논문연구지원사업 논문발표회

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- 79 교통편

[한국원자력학회 특별회원 및 학술발표회 광고]

학회장 인사말



황주호 학회장

회원 여러분 안녕하십니까? 학회장 황주호입니다.

제가 작년 추계 학술대회 인사말을 전하면서 원자력의 앞날에 끼일 구름이 쉽게 걷힐 것 같지 않아 걱정하는 말씀을 드렸었습니다. 원자력발전분야에서는 지난 수년 간 원전부품의 품질서류와 구매상 문제 등에서 기인한 국민적 불신을 벗어나기 위해 지난한 노력을 해 왔습니다. 그 결과 2016년 한수원은 청렴도와 부패지수 평가에서 모두 최우수를 받아 이제 신뢰의 기반을 다졌다고 보입니다. 그러나 이어서 닥친 동일본 대지진과 우리나라의 지진으로 국민들의 불안은 최고조에 달했고 그에 대한 대비책이 완전치 않다는 비난이 길게 이어지고 있습니다. 그 여파로 고리1호기의 폐쇄를 쉽게 결정하기도 하였습니다. 한편 원자력 연구계에서도 방사성폐기물 관리절차가 부실했음을 드러냄으로서 원자력분야 모두가 총체적 문제가 있는 것으로 비춰지고 있습니다.

작년 추계 학회 인사말을 전할 때 20여건이던 원자력관련 입법 발의는 50건을 넘어서고 있습니다. 대선 후보 대부분이 원자력발전을 확대하는 것은 고사하고 지속하는 것에도 부정적 입장을 보이게 되었으니 춘계 학회가 열리는 시점이면 새 대통령 아래의 정부가 취할 정책 방향을 예측할 수 있습니다.

이와 같이 심한 정책변화를 예측할 수 있는 상황에서 학회의 입장 표명은 절실했습니다. 학회는 성명서 발표를 통해 “에너지 정책을 안전 최우선, 국가경제, 에너지 안보 등을 고려하여 국민적 합의하에 신중하게 결정할 것”을 요청하였고 바른사회실현과학기술연합회(과실연)와 세 차례 공개 토론회를 가지며 원전과 에너지 이슈의 핵심을 다루어 왔습니다. 비중 있는 정당의 당직자 분들께도 세심한 정보와 함께 에너지정책과 원전의 이슈를 전달하였습니다. 학회는 새 정부 아래서도 책임 있는 전문가 집단으로서 지속적인 대응을 해나가야겠습니다.

그래도 원자력발전분야가 희망을 가질 수 있는 소식은 영국이 우리에게 원전 사업 참여를 요청하고 있으며 미국 웨스팅하우스 역시 오랜 건설 경험을 가진 우리나라에게 도움의 손길을 바라고 있다는 점입니다. 영국은 유럽과 미약하게 전력계통을 연계하고 있습니다. 전력산업 구조개편, 신재생을 통한 분산전원 체계 구축 등에서 유럽 어느 나라 보다 앞서 있습니다. 2025년까지 석탄발전을 중단하겠다는 정책을 실현키 위해 대규모 신재생 투자와 함께 15기의 신규원전을 건설할 계획입니다. 주변국과 전력연계가 잘되어 있는 독일과 달리 영국은 에너지 측면에서 섬이라는 점이 우리와 유사합니다.

존경하는 회원 여러분. 맞바람이 분다고 가야할 걸음을 멈출 수는 없습니다. 옷깃을 여미고 몸을 낮추더라도 우리의 본분을 잊지 않고 책임 있는 전문가로서의 길을 가야 하겠습니다. 오랜만에 회원 간의 만남을 즐기시고 건강하시기를 기원합니다.

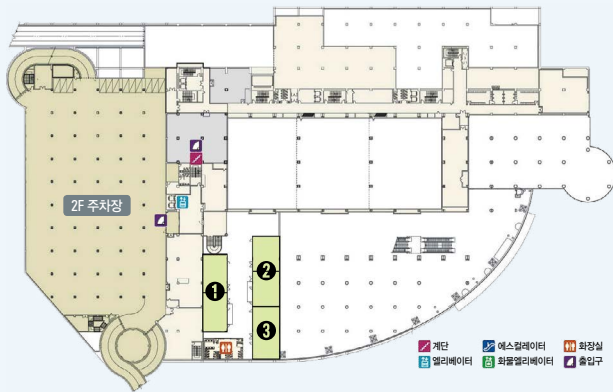
2017년 5월

황 주 호 학회장

학술발표회 회의장 배치도

2F

- ① 201 A, B
- ② 202 A, B
- ③ 203



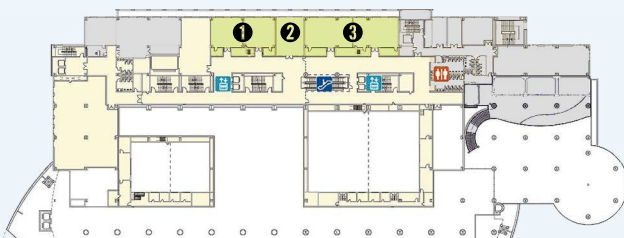
3F

- ① 301 A, B
- ② 302
- ③ 300
- ④ 303 A, B
- ⑤ 304
- ⑥ 삼다홀 A, B
- ⑦ 한라홀 A, B
- ⑧ 델리시아(레스토랑)
- ⑨ 델리뷰



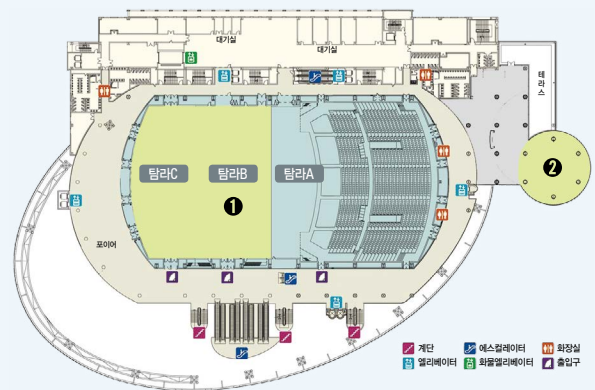
4F

- ① 401 A, B
- ② 400
- ③ 402 A, B



5F

- ① 탐라홀 A, B, C
- ② 오션뷰



한국원자력학회 제29대 임원진

회장



황주호

수석부회장



김학노

부회장



김용수



이세열



이중호

감사



나기용



이광원

고급정책연구소장 겸 원자력이슈위원회 위원장



최종원

소통위원회 위원장겸 대변인



제무성

부위원장겸 대변인



이승숙

총무이사



임채영



홍서기

학술이사



이윤실



장창희

사업이사



정수현



정일섭

편집이사



김성중



정동욱

재무이사



박주완



한상길

홍보협력이사



백 훈



황용석

한국원자력학회 원자력이슈위원회 위원

위원장



최종원

부위원장



윤종일

임명직 위원



김광표



김군태



김무환



김민규



문주현



백주완



백종혁



안도희



양준연



유호식



이규천



임채영



정선교

당연직 위원



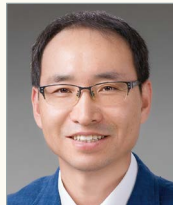
김봉환



김현준



김흥표



나만균



박영섭



연제원



오병훈



제무성



주한규



주형국

한국원자력학회 소통위원회 위원

[소통위원회]

위원장 겸 대변인



제무성

부위원장 겸 대변인



이승숙

위원



김진원



백 훈



윤병조



윤지웅



이기복



이재영



조건우



주한규



한국원자력학회 편집위원회 위원

위원장



나만균

국내 부위원장



구양현



김은희



최기용

국외 부위원장



Shinya Nagasaki



Hideo Nakamura



Won Sik Yang

국내 위원



김성중



김용균



김용희



김윤재



김인규



김원주



김창락



문주현



선광민



신형기



임호곤



정동욱



정명조



정범진

국외 위원



Akio Gofuku



Didier Jacquemain



John C. Jin



Jean Noiroit



Horst-Michael Prasser



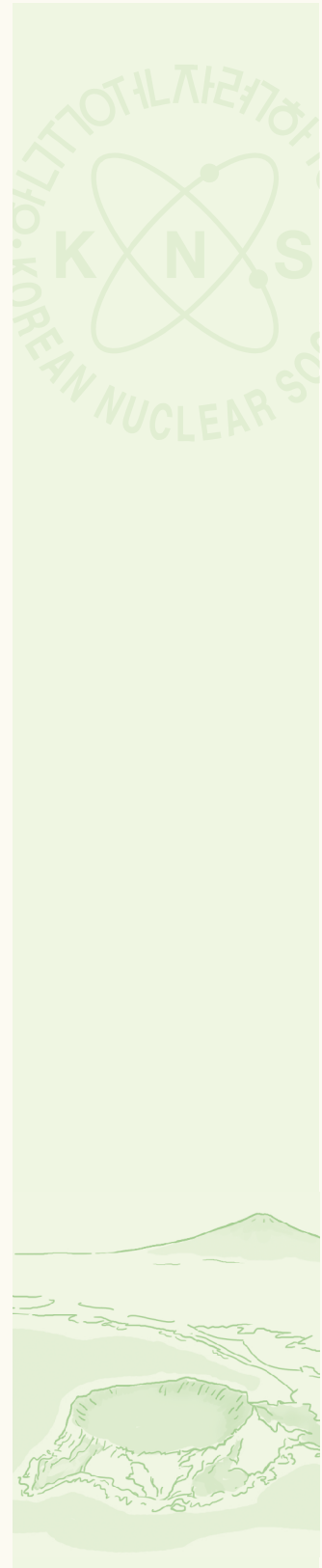
Shripad Revankar



Guanghui Su



Belle R. Upadhyaya



한국원자력학회 연구부회장/차기연구부회장 · 지부장

연구부회장/차기연구부회장

원자로시스템기술



주형국



정동욱

방사선이용 및 방호



김봉환



황원태

원자재료 및 계산과학



주한규



김용희

양자공학 및 핵융합기술



오병훈



김종원

방사성폐기물관리



연제원



정종태

원전건설 및 운영기술



박영섭



김윤호

핵연료 및 원자력재료



김흥표



유종성

원자력정책, 인력 및 협력



김현준



이기복

원자력열수력 및 안전

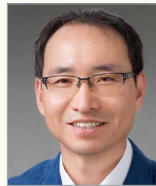


제무성



양준언

원자력계측제어, 인간공학 및 자동원격



나만군



정연섭

국내외 지부장



김승평
광주/전남/전북 지부



이재영
대구/경북 지부



김창락
부산/울산/경남 지부



양원식
미국 지부



하준수
UAE 지부



강재식
IAEA/Europe 지부

청년지부



최성열 지부장



김은희 지부장

학생지부



이왕현 지부장



김형대 지도교수

한국원자력학회 포상 및 장학위원회 위원/사무국

위원장



김학노

사무총장



남장수

위원



김성중



김인구



박종률



송종순

실장



민현정



윤병조



이병철



이상덕



이승철

대리



송지현



이윤실



장창희



조건우



진태은

직원



이연화



최기용



최성민



최중원



황용수



유진원

개회식 및 특별강연 일정

| 일시 2017년 5월 18일(목) 15:30 ~ 17:50

| 장소 한라홀 (3F)

일 정	프로그램
15:30 ~ 16:00	[사회: 임채영 총무이사] 국민의례
	개회사: 황주호 학회장
	축사: 하재주 한국원자력연구원장
	2016 춘계학술발표회 우수논문상 시상
	2016 춘계학술발표회 학생/청년 Competition Session 시상
	2017 장학증서 수여
16:00 ~ 16:55	특별강연 I 윤세리 대표변호사 (법무법인(유) 율촌) 에너지 프로젝트 파이낸스의 개관 및 최근 동향
16:55 ~ 17:50	특별강연 II 전중환 교수 (경희대 후마니타스칼리지) 왜 어떤 위험은 두려운가? - 진화심리학의 관점

만찬 행사 일정

| 일시 2017년 5월 18일(목) 18:00 ~ 19:30

| 장소 탐라홀 B, C (5F)

일 정	프로그램
18:00 ~ 19:30	장내 안내말씀
	인사말: 황주호 학회장
	참가자 만찬
	2017년 춘계학술발표회 분과별 우수포스터 시상

축사

| 일시 | 2017년 5월 18일(목) 15:30

| 장소 | 한라홀 (3F)



하재주

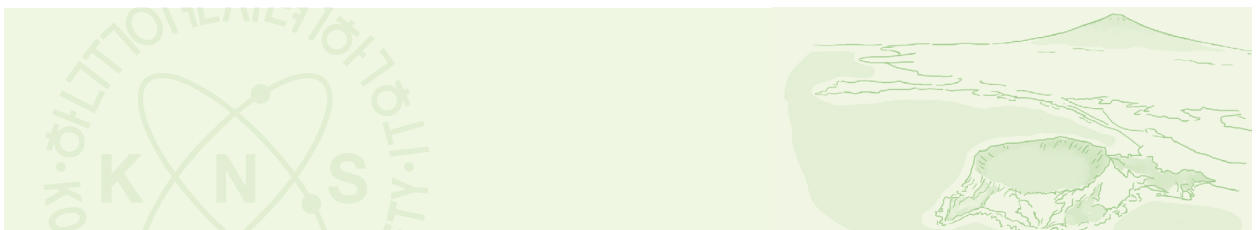
한국원자력연구원장

| 주요 학력 |

- 서울대학교 원자핵공학과 졸업
- The Ohio State University 원자력공학 대학원(석사, 박사) 졸업

| 주요 경력 |

- 경제협력개발기구 원자력기구 원자력개발국장(2015. 03~2017. 03)
- 한국원자력연구원
 - 신형원자로개발연구소장(2011. 12 ~ 2014. 03)
 - 연구로이용 · 개발본부장(2010. 01 ~ 2011.11)
 - 원자력기초과학연구본부장(2008. 12 ~ 2010. 01)
 - 원자력안전연구본부장(2007. 03 ~ 2008.11)
- 한국원자력학회 사업이사(2005. 09 ~ 2007. 08)



특별강연

| 일시 2017년 5월 18일(목) 16:00 ~ 17:50 | 장소 한라홀 (3F)



윤 세 리

법무법인(유) 울촌
대표변호사

에너지 프로젝트 파이낸스의 개관 및 최근 동향

원전 수출을 비롯한 에너지 프로젝트는 대규모의 자금 조달을 필요로 하는 경우가 일반적이고 이를 위해서는 자금지원 은행과 같은 금융기관(대주) 기타 투자자들로부터 좋은 평가를 받는 것이 성공적인 사업수행의 관건인 경우가 많습니다. 즉, 사업의 첫 추진 단계에서부터, 해당 프로젝트에 대하여 은행 등 투자자들로부터 자금조달이 가능한가(bankability)의 관점에서 프로젝트의 주요 조건들을 검토하는 것이 필요합니다.

이와 같은 배경에서 이번 특별강연에서는 에너지 분야의 자금 조달 방식과 관련하여 최근 동향을 소개하고, 자금 조달을 위하여 자주 사용되는 방식인 프로젝트 파이낸스(project finance)를 법적 측면에서 개괄적으로 설명하면서 몇 가지 실무적인 안내를 하는 것을 주된 내용으로 할 것입니다.

구체적으로, 에너지 분야에서의 자금 조달 관련 현황 및 쟁점사항 등을 먼저 소개한 후, 최근 동향에 대하여 업데이트 해드리려고 합니다. 그 다음으로는 에너지 분야에서의 프로젝트 파이낸스의 기본 구조(프로젝트 파이낸스의 진행 방식 및 자주 사용되는 거래 구조 등)를 설명드리고, 프로젝트 파이낸스 방식을 사용하여 자금을 조달할 때 고려해야 할 사항들을 검토해 보겠습니다.

특히, 프로젝트 파이낸스의 법적 측면에서의 핵심 고려사항은 에너지 사업의 위험을 어떻게 분배(risk allocation)할 것인가 하는 문제입니다. 이와 관련하여 에너지 프로젝트에서 통상 검토되는 전력구매계약(power purchase agreement)을 포함하여, 에너지 프로젝트의 주요 당사자(Key Player)들이 중요하게 고려해야 할 사항에 초점을 맞추고자 합니다.



전 중 환

경희대학교
휴머니티스칼리지
교수

왜 어떤 위험은 두려운가? - 진화심리학의 관점

사람들은 어떤 위험을 지나치게 두려워하는 반면, 다른 위험은 지나치게 무시하는 경향이 있다. 통제할 수 없고, 단번에 많은 사람을 죽이고, 선택의 여지가 없고, 새롭고 낯선 위험을 우리는 과대평가한다. 원자력 발전소 사고, 핵무기, 신경가스 사고, GMO(유전자 조작 식품), 수돗물 불소 첨가, 화학 비료 등이 그 예다. 반면에, 통제할 수 있고, 한 번에 한 사람만 죽이고, 자발적으로 선택했고, 익숙한 위험을 우리는 과소평가한다. 자동차 사고, 오토바이 사고, 음주, 흡연, 낙상, 가전제품, 실내 수영장, 의료 사고 등이 그 예다.

그러나, 위험에 의한 사망자 수로 따지면 이러한 위험 지각은 종종 비합리적으로 보인다. 미국 대학생들과 성인 여성들은 핵무기가 자동차보다 더 위험하다고 답하지만, 실제로 핵무기에 의한 사망자 수는 자동차 사고의 사망자 수에 비하면 극히 일부에 불과하다. 왜 우리는 어떤 종류의 위험을 유독 더 두려워하는가? 진화심리학의 관점에서 이 문제를 논의하고자 한다.

진화심리학을 따르면, 마음은 수백만 년 전에 살았던 인류의 진화적 조상들이 대개 수십 명으로 이루어진 작은 집단 내에서 수렵-채집 생활을 하면서 부딪혔던 여러 현실적인 문제들을 잘 해결하게끔 자연 선택에 의한 진화가 '설계'한 수많은 심리 기제들의 집합이다. 이러한 관점에서, 두려움이라는 정서는 위험한 상황을 피하고 모면하게끔 진화한 심리적 적응이다.

진화적 지각은 왜 다양한 위험들에 대한 일반인들의 지각과 대응이 종종 비합리적인 것처럼 보이는가를 설명해준다. 예를 들어, 진화 역사를 통해서 인간이 정기적으로 상호작용해 온 지인들의 그룹망 크기는 100~200명이었다. 자신이 속한 사회 집단을 한꺼번에 잃는 일은 우리 조상들의 번식 성공도를 급락시키는 매우 중대한 일이었으므로, 우리는 100명 정도를 죽이는 사고를 그보다 더 적은 수(예: 10명)를 죽이는 사고보다 더 두려워하리라고 기대된다. 동시에, 100명보다 훨씬 더 많은 수(예: 1000명)를 죽이는 사고를 100명을 죽이는 사고보다 특별히 더 두려워하지는 않으리라 기대된다. 결론적으로, 다양한 위험들에 대한 우리의 지각과 대응 방식은 "심층적인 수준에서 합리적"임을 강조한다.

2017년 춘계학술발표회 수상자 명단

| 시상식 2017년 5월 18일(목) 15:30

| 장소 한라홀 (3F)

학술발표회 우수논문상 (2016 추계학술발표회 발표논문)

성명	소속
김도현	한양대학교
김태호	울산과학기술원
김한성	한국원자력연구원
박배정	두산중공업
백승헌	한국원자력연구원
신호영	한양대학교
안상모	한국원자력연구원
이만기	한국원자력연구원
이찬영	KAIST
이승엽	한국원자력연구원
이현석	울산과학기술원
조원호	한국전력기술
허재석	한국원자력연구원
Muritala Amidu	경희대학교

학생 / 청년 Competition Session (2016 추계학술발표회 발표논문)

성명	소속	구분
박상길	ACT Co., Ltd.	최우수상
손홍현	한양대학교	
함준혁	울산과학기술원	우수상
이재기	서울대학교	

장학생 명단

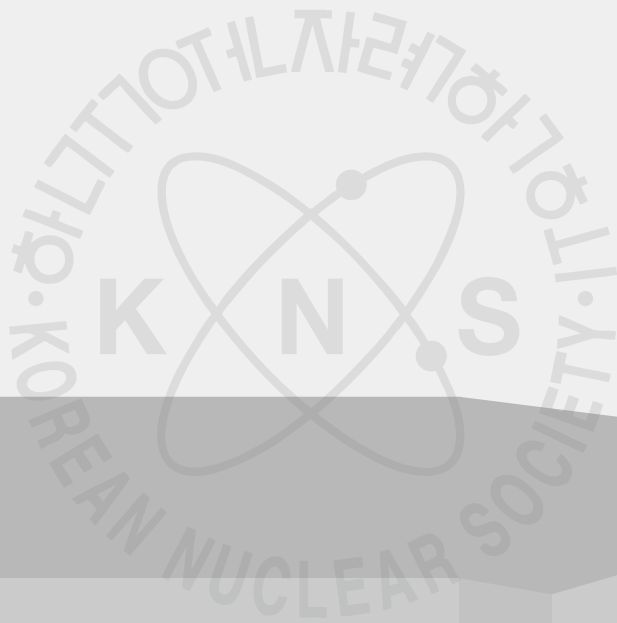
| 수여식 2017년 5월 18일(목) 15:30

| 장 소 한라홀 (3F)

2017년도 한국원자력학회 장학생 (두산중공업(주) 후원 장학생 포함)

학 교 명	성 명	학 교 명	성 명
경북대학교	서지혜	제주대학교	강용준
경희대학교	김다솔		김승현
	박인경		한동협
	이진영	조선대학교	김선일
	정채원		이학윤
단국대학교	구병철	임상현	
	김동기	중앙대학교	김지숙
동국대학교	박정후		송영범
	윤태훈	포항공과대학교	김웅기
	이광현		이민욱
	이예희	한국과학기술원	권흥록
	이은재		곽세현
	하동욱		오태석
이영하	이대희		
부산대학교	김민기	한양대학교	노세영
	이상희		박상수
이영하	이재원		
서울대학교	강기훈		임원영
	신정환	정의성	
	이영선	한전 국제원자력대학원 대학교	J. Mayaka
	이태훈		K. Zabrzycki
임장원	M. Salam		
세종대학교	김기복		
	김재량		
영남대학교	이수원		
	장현동		
울산과학기술원	박종우		
	이명규		

Workshop



A

제 4차 산업혁명과 소듐냉각고속로

| 일시·장소 2017년 5월 17일(수) 13:30~18:00 · 제주 국제컨벤션센터, 2층 203

| 주최 한국원자력학회 원자로시스템기술 연구부회

일 정	내 용
13:30 ~ 13:35	인사말
13:35 ~ 14:05	제 4차 산업혁명, 새로운 변화와 숨겨진 질서 (최병철, ETRI)
14:05 ~ 14:35	인공지능과 빅데이터 활용 사례 (민옥기, ETRI)
14:35 ~ 15:05	3D Printing Technology 어디까지 왔나 (원영규, 하이비전시스템)
15:05 ~ 15:35	자율운전원자로 연구개발 현황 (김용희, KAIST)
15:35 ~ 15:50	Coffee Break
15:50 ~ 16:20	AI-Based Monitoring and Diagnosis of Severe Accidents (나만균, 조선대)
16:20 ~ 16:50	Roadmap of AI Application in Nuclear Engineering (박문규, 세종대)
16:50 ~ 17:20	Development Plans to Realize Autonomous Operation of PGSFR (성승환, KAERI)
17:20 ~ 17:30	종합토의

| 기타사항 - 등록비 : 30,000원 (석식 미제공)

- 문의처 : 김상지 / 소듐냉각고속로개발사업단 / 042-868-2279 / sjkim3@kaeri.re.kr

안규석 / 소듐냉각고속로개발사업단 / 042-868-8979 / ksahn@kaeri.re.kr

B

최신 노심출력분포 측정 및 노심보호감시 기술 워크숍

| 일시·장소 2017년 5월 17일(수) 13:30~18:00 · 제주 국제컨벤션센터, 4층 402B

| 주최 한국원자력학회 원자로물리 및 계산과학 연구부회

일 정	내 용
12:30 ~ 13:30	등록
13:30 ~ 13:40	개회사 (김용희, KAIST)
13:40 ~ 13:50	축사 (주한규, 서울대)
13:50 ~ 14:30	경수로 노심 출력분포 측정 및 노심보호감시 기술 현황 (신호철, KHNP-CRI)
14:30 ~ 15:00	노심설계코드 기반 노심 감시 및 예측 기술개발 현황 (이해찬, KNF)
15:00 ~ 15:20	기념촬영 및 휴식
15:20 ~ 15:50	중수로 노심 출력분포 측정 및 노심보호감시 기술 개발 (박동환, KHNP-CRI)
15:50 ~ 16:20	노심 출력분포 합성법 신기술 (이덕중, UNIST)
16:20 ~ 16:40	휴식
16:40 ~ 17:10	상부탐재형 노내계측기 기술 개발 (맹철수, KEPCO-E&C)
17:10 ~ 17:40	혁신형 노심보호계통 개발 방향 (박문규, 세종대)
17:40 ~ 18:00	종합토의

| 기타사항 - 등록비 : 50,000원 (석식 제공)

- 문의처 : 신호철 / 한수원 중앙연구원 / 010-5578-3055 / shin.hocheol@khnp.co.kr

C

원전 해체 R&D 현황

| 일시 · 장소 2017년 5월 17일(수) 13:30~18:00 · 제주 국제컨벤션센터, 2층 202B

| 주최 한국원자력학회 방사성폐기물관리 연구부회

일 정	내 용
13:30	개 회 (연제원, 방사성폐기물관리연구부회장)
13:30 ~ 13:45	축사 (정부)
13:45 ~ 14:00	인사말 (김용수 교수, 원자력학회 부회장)
14:00 ~ 14:50	미국 원전 해체 교훈(Victor K. Der 교수)
14:50 ~ 15:00	휴 식
15:00 ~ 15:30	산업부 해체 R&D 추진 현황 및 방향 (염학기 PD, KETEP)
15:30 ~ 16:00	한수원 해체 R&D 추진 현황 및 방향 (이종설 팀장, KHNP)
16:00 ~ 16:30	원자력연구원 해체 R&D 추진 현황 및 방향 (서범경 부장, KAERI)
16:30 ~ 17:00	원전 해체규제 R&D 추진 현황 및 방향 (최경우 팀장, KINS)
17:00 ~ 17:10	휴 식
17:10 ~ 18:00	패널토론(해체 준비 R&D 방향 및 계획 중심 Q&A, 발표자)
18:00 ~ 18:10	이 동
18:10 ~	만 찬

| 기타사항 - 등록비 : 50,000원 (석식 제공)
- 문의처 : 염학기 / 에너지기술평가원 / 010-2312-5495 / hockey@ketep.re.kr

※(現) Professor of Columbia University, President of VKDER,
(前) Assistant Secretary (acting) at the US Department of Energy (DOE)

D

핵연료 기술 동향과 미래 기술 수요 전망

| 일시 · 장소 2017년 5월 17일(수) 12:30~18:00 · 제주 국제컨벤션센터, 2층 202A

| 주최 한국원자력학회 핵연료 및 원자력 재료 연구부회

일 정	내 용
12:30 ~ 13:20	등록
	Part 1 좌장 : 김규태 (동국대)
13:20 ~ 13:30	인사말-김홍표 (연구부회장)
13:30 ~ 14:00	경수로 안전 여유도 향상을 위한 핵연료 기술개발 현황-이승재 (KNF)
14:00 ~ 14:30	원전 안전 향상을 위한 경수로 핵연료 연구-양재호 (KAERI)
14:30 ~ 15:00	규제 관련 현안과 미래 기술-신안동 (KINS)
15:00 ~ 15:30	사용후핵연료 관리 기술현안과 원전 내 건식저장 계획-김용덕 (KHNP-CRI)
15:30 ~ 15:50	휴 식
	Part 2 좌장 : 김용덕 (KHNP-CRI)
15:50 ~ 16:20	혁신형 경수로 핵연료 기술 수요-신호철 (KHNP-CRI)
16:20 ~ 16:50	핵연료 기술 혁신을 위한 재료 공학-류호진(KAIST)
16:50 ~ 17:10	SFR 원형로 금속연료 설계 및 성능평가 기술 개발 현황-천진식(KAERI)
17:10 ~ 17:30	재순환 핵연료 제조기술 개발 현황-박정용(KAERI)
17:30 ~ 18:00	사고조건 핵연료 다물리/다차원 해석 기술 개발 현황-김효찬 (KAERI)

| 기타사항 - 등록비 : 50,000원 (석식 제공)
- 문의처 : 김효찬 / 한국원자력연구원 / 010-2027-4507 / hyochankim@kaeri.re.kr
홍중대 / 한국원자력연구원 / 010-5001-3085 / jongd@kaeri.re.kr

E

국내원전 인간신뢰도분석 현안

| 일시·장소 2017년 5월 17일(수) 13:00~18:00 · 제주 국제컨벤션센터, 2층 201B
 | 주최 한국원자력학회 원자력열수력 및 안전 연구부회
 | 주관 한국원자력연구원

일 정	내 용
13:00 ~ 13:30	등록
13:30 ~ 13:40	개회사 : KAERI 원자력안전 · 환경연구소장
13:40 ~ 14:15	1. 국내 HRA 규제 현황. 이승우 (KINS)
14:15 ~ 14:50	2. Human Factors 입장에서 본 digital HRA 현안. 김지태 (KINS)
14:50 ~ 15:25	3. K-HRA 방법론 적용의 교훈 및 개선방향. 박성규 (ACT(주))
15:25 ~ 15:55	휴식 및 단체사진
15:55 ~ 16:30	4. 건설원전 Level 1 HRA 수행현황 및 계획. 전호준 (CRI), 김남철 (KEPCO-E&C)
16:30 ~ 17:05	5. 디지털 주제어실 Level 1 HRA 국내 연구현황 및 계획. 정원대 (KAERI)
17:05 ~ 17:40	6. 사고관리 측면에서의 Level 2 HRA 연구현황 및 계획. 김재환 (KAERI)
17:40 ~ 17:50	폐회사 : 원자력열수력 및 안전연구부회장
18:30 ~ 20:00	만찬 (장소 추후 공지)

| 기타사항 - 등록비 : 50,000원 (석식 제공)
 - 문의처 : 박진균 / 한국원자력연구원 / 042-868-2186 / kshpjk@kaeri.re.kr
 신성민 / 한국원자력연구원 / 042-868-2289 / smshin@kaeri.re.kr

F

동위원소 도전과 기회 V : 국제 동위원소 기술 전문가 발표 및 회의

| 일시·장소 2017년 5월 17일(수) 14:00~18:00 · 제주 국제컨벤션센터, 3층, 삼다홀A
 | 주최 한국원자력학회 방사선이용 및 방호 연구부회
 | 주관 한국원자력협력재단, 한국원자력연구원

일 정	내 용
14:00 ~ 14:30	Welcoming Address, Mr. Oh Soo Youl, KAERI
14:30 ~ 15:00	A stable molybdenum-99 supply for a changing market, Mr. Michael Druce, ANSTO
15:00 ~ 15:30	Significance of kijang research reactor, Mr. Lee Kye Hong, KAERI
15:30 ~ 16:00	Coffee Break / Photo
16:00 ~ 16:30	The status of production and application of radioisotopes in Vietnam, Mr. Duong Van Dong, NRI
16:30 ~ 17:00	The status of supply and demand of radioisotopes in Korea, Ms. Park Chan Hee, KARA
17:00 ~ 17:30	The status of production and application of radioisotopes in Japan, Mr. Tsuchiya Kunihiko, JAEA
17:30 ~ 18:00	Development of fission-based Mo-99 production process and facility, Mr. Lee Jun Sig, KAERI

| 기타사항 - 등록비 : 무료 (석식 미제공)
 - 문의처 : 임재청 / 한국원자력연구원 / 042-868-8344 / limjc@kaeri.re.kr

G

국내 방사선 계측기 및 입자검출기 기술 워크샵

| 일시·장소 2017년 5월 17일(수) 13:00~18:00 · 제주 국제컨벤션센터, 4층 401B

| 주최 한국원자력학회 양자공학 및 핵융합기술 연구부회

일 정	내 용
12:00 ~ 13:00	등록
13:00 ~ 13:25	가스 기반의 하전입자 검출 시스템, 채경욱 교수 (성균관대학교)
13:25 ~ 13:50	시간투영검출기와 고에너지 중성자 검출기, 안정근 교수 (고려대학교)
13:50 ~ 14:15	Synchrotron과 XFEL을 위한 2차원 X-선 검출기, 나승유 박사 (포항공대속기연구소)
14:15 ~ 14:40	방사선 화물검색시스템을 위한 X-선 레디오그래피, 이병철 박사 ((주)아큐스캔)
14:40 ~ 14:50	Coffee break
14:50 ~ 15:15	방사선기기 펌 센터의 방사선센서 및 계측기 개발현황, 김한수 박사 (한국원자력연구원)
15:15 ~ 15:40	중성자 검출기 및 측정시스템 개발, 김용균 교수 (한양대학교)
15:40 ~ 16:05	중성자 라디오 그래피, 문명국 박사 (한국원자력연구원)
16:05 ~ 16:15	Coffee break
16:15 ~ 16:40	우주방사선 측정장비 개발 및 활용, 남욱원 박사 (한국천문연구원)
16:40 ~ 17:05	Radiation Imaging Techniques for Radiological Environment, 정진훈 사장 ((주)뉴케어)
17:05 ~ 17:30	방사선 탐지 및 방호기술의 국방분야 적용, 이남호 박사 (한국원자력연구원)
17:30 ~ 17:55	KAIST 방사선 센서 연구현황, 조규성 교수 (한국과학기술원)
17:55 ~ 18:00	폐 회

| 기사사항 - 등록비 : 30,000원 (석식 제공)

- 문의처 : 허성렬 / 한국원자력연구원 / 010-5283-0610 / srhuh7@kaeri.re.kr

H

원전 형상관리 추진현황 및 향후 계획

| 일시·장소 2017년 5월 17일(수) 13:00~18:00 · 제주 국제컨벤션센터, 3층 삼다홀B

| 주최 한국원자력학회 원전건설 및 운영기술 연구부회

일 정	내 용
13:00 ~ 13:20	워크샵 인사말 및 내빈 소개 등
13:20 ~ 13:50	가동원전 형상관리시스템 운영현황 및 계획, 배아람(한수원/엔지니어링처)
13:50 ~ 14:20	건설원전 형상관리 추진현황 및 계획, 손태영(한수원/건설기술처)
14:20 ~ 14:50	건설원전 데이터기반 형상관리체계 구축현황 및 계획, 박유진(한수원/중앙연구원)
14:50 ~ 15:20	데이터기반 설계통합시스템 개발현황 및 계획, 이상배(한국전력기술)
15:20 ~ 15:40	Break Time
15:40 ~ 16:10	원전 형상관리 규제 이행방안 현황, 장현섭(KINS)
16:10 ~ 16:40	해외 원전 형상관리시스템 구축 사례, 안경익(부품DB)
16:40 ~ 17:10	원전 형상관리 플랫폼 개발, 오정섭(NSE)
17:10 ~ 17:40	데이터 기반 설계시스템, 서동욱(AVEVA)
17:40 ~ 18:00	종합토론

| 기사사항 - 등록비 : 50,000원 (석식 제공)

- 문의처 : 김정호 / KINS / 042-868-0852 / k730kjh@kins.re.kr

※발표주제 및 일정은 상황에 따라 변동될 수 있습니다.

Workshop

I

International Workshop on Prospects for the Trump Administration's Nuclear Policy and the U.S.-ROK Nuclear Cooperation

| 일시 · 장소 2017년 5월 17일(수) 13:30~17:30 · 제주 국제컨벤션센터, 3층 301

| 주최 한국원자력학회 원자력 정책, 인력 및 협력 연구부회

※ 이 국제 워크숍은 박노벽 대사의 기부금(한미원자력협정 개정 공로로 수상한 2015 영산외교인상의 상금전액)으로 추진됨

일 정	내 용
13:00 ~ 13:30	[Registration]
13:30 ~ 14:00	[Opening Session] · Opening Remark (Joocho Whang, President, Korea Nuclear Society) · Welcoming Remark (Sanghyun Lee, President, Korea Nuclear Policy Society) · Keynote Speech (Sangwook Ham, Director General, Bureau of Nuclear Energy and Nonproliferation, MOFA)
14:00 ~ 15:40	[Session I] U.S.-ROK Relation and Nuclear Policies under the Trump Administration · Moderator : Florence Lowe-Lee, President, Global America Business Institute - "The Prospect for the U.S.-ROK Relation under the Trump Administration-Korean Perspective" (Sanghyun Lee, President, Korea Nuclear Policy Society) - "The Prospect for the U.S.-ROK Relation under the Trump Administration-U.S. Perspective" (Scott Snyder, Director, Program on US-Korea Policy, Council on Foreign Relation) - "The Prospect for Nuclear Energy Policies under the Trump Administration" (Jack Spencer, Vice President, Heritage Foundation)
15:40 ~ 16:00	Break
16:00 ~ 17:30	[Session II] Challenges and Opportunities of the U.S.-ROK Nuclear Cooperation · Moderator : Chungwon Cho, Visiting Professor, Seoul National Univ. of S&T - "Current Status and Prospects of U.S.-ROK Nuclear Cooperation" (Kwang-Seok Lee, Director, Center for ROK-U.S. Nuclear Cooperation, KAERI) - "Challenges and Opportunities for Further Nuclear Cooperation between the US and ROK" (Paul Dickman, Senior Policy Fellow, Argonne National Laboratory) - "Advance Reactor Development under Trump Administration and Possible Avenue for International Collaboration." (Donald Wolf, Chairman and CEO, Advanced Reactor Concepts LLC (ARC))
17:30	[Closing]

| 기타사항 - 등록비 : 무료 (식사 미제공)

- 문의처 : 김미진 / 한국원자력연구원 / 042-868-4893 / mijin@kaeri.re.kr

J

원자력인력의 질적 향상 방안과 정책적 제언

| 일시 · 장소 2017년 5월 17일(수) 13:20~17:30 · 제주 국제컨벤션센터, 3층 한라홀B

| 주최 한국원자력학회 원자력 정책, 인력 및 협력 연구부회

| 주관 한국전력국제원자력대학원대학교(KINGS), 원자력학과장협의회

일 정	내 용
13:20 ~ 13:25	사회, 노명섭교수(KINGS)
13:25 ~ 13:30	개회인사, 김학노, 한국원자력학회 수석부회장
13:30 ~ 13:40	축사, 이관섭, 한국수력원자력사장
13:40 ~ 13:50	산업계인력양성 및 수급현황과 과제, 손태경전무(한국수력원자력)
13:50 ~ 14:00	국내 원자력학과 현황 및 현안, 정범진교수(경희대)
14:00 ~ 15:00	토론, 진행 최성민교수(KAIST)
15:00 ~ 15:10	휴식
15:10 ~ 15:20	교육의 변화와 미래지향적 대안, 조형규교수(서울대)
15:20 ~ 15:30	BSC운영사례, 이인규팀장(KINGS)
15:30 ~ 16:30	토론, 진행 김용수교수(한양대)
16:30 ~ 16:40	원자력공학과 경쟁력 강화방안, 나만균교수(조선대)
16:40 ~ 17:20	토론, 진행 김용수교수(한양대)
17:20 ~ 17:30	토론 종합

| 기타사항 - 등록비 : 무료 (석식 제공)

- 문의처 : 노명섭 / KINGS / 010-3630-3460 / ms.roh@kings.ac.kr

K

지역주민의 원자력 인식과 수용성 증진 워크숍

| 일시 · 장소 2017년 5월 19일(금) 09:20~12:00 · 제주 국제컨벤션센터, 3층 302

| 주최 한국원자력학회 원자력 정책, 인력 및 협력 연구부회

| 주관 한국원자력문화재단

일 정	내 용
09:00 ~ 09:20	등록
09:20 ~ 09:30	개 회 - 김현준 한국원자력학회 정책, 인력 및 협력 연구부회장 - 김호성 한국원자력문화재단 이사장
09:30 ~ 10:00	(발표1) 원자력 인식 현황 - 한국원자력문화재단
10:00 ~ 10:30	(발표2) 위험인식의 구조와 정책적 함의 - 김서용 아주대학교 행정학과 교수
10:30 ~ 10:50	휴 식 (Coffee Break)
10:50 ~ 11:20	(발표3) 지역갈등 해소 및 신뢰회복 방안 - 오영석 동국대학교 교수(갈등치유연구소장)
11:20 ~ 12:00	(토론 및 질의응답) 지역 수용성 제고 방안 - 좌장 : 박원재 한국원자력안전기술원 전문위원 - 패널 : 김병준 국민대학교 행정정책학부 교수, 노승국 한국원자력연구원 기술정책연구실 선임연구원

| 기타사항 - 등록비 : 무료 (식사 미제공)

- 문의처 : 김현진 과장 / 한국원자력문화재단 / 02-2191-1453 / hjkim@knea.or.kr

L

iPOWER 인간기계연계(HSI) 설계개발 Workshop

| 일시 · 장소 2017년 5월 17일(수) 13:00~18:00 · 제주 국제컨벤션센터, 2층 201A

| 주최 한국원자력학회 원자력계측제어, 인간공학 및 자동원격 연구부회

| 주관 한국수력원자력 중앙연구원

일 정	내 용
13:00 ~ 13:10	환영사, 김한곤, KHNP CRI 신형원전연구소장
13:10 ~ 13:30	iPOWER HSI 개발 계획 및 Top Tier Requirement, 김윤구, KHNP CRI
13:30 ~ 13:50	자가학습 지식융합형 발전 플랜트안전 기술 개발 현황, 김관중, 한국전자동신연구원
13:50 ~ 14:10	Roadmap of Big data and AI Application in iPOWER, 박문규, 세종대학교
14:10 ~ 14:30	변화하는 규제환경에서의 원자력 계측제어의 역할, 허균영, 경희대학교
14:30 ~ 14:50	Intelligent systems to reduce control risk failures, 이승준, UNIST
14:50 ~ 15:10	휴 식
15:10 ~ 15:30	인공지능기술을 이용한 가압경수로 원전 운전 자동화 기술, 김창희, KAERI
15:50 ~ 16:10	단순화 및 진단기능/자동시험을 강화한 고신뢰도 보호계통, 최웅석, 한기ISD
16:10 ~ 16:30	안전기능 고장감시 및 대응 전략 수립, 김진구, 한기AE
16:30 ~ 16:50	휴식 및 장내정리
16:50 ~ 18:00	패널토론 - 자율운전 및 인공지능의 원전 적용의 제약과 효과

| 기타사항 - 등록비 : 무료 (석식 미제공)

- 문의처 : 김윤구 / 한국수력원자력 / 042-870-5419 / ygkim.stpn@khnp.co.kr

Workshop

제4회 아시안 지르코늄 워크숍 (Asian Zr Workshop)

| 일시 · 장소 2017년 5월 17일(수) ~ 5월 19일(금) · 제주 국제컨벤션센터, 4층 400

| 주최 한국원자력학회 핵연료 및 원자력재료 연구부회

| 5월 17일 (수)

일 정	내 용
14:00 ~ 14:20	Effect of Mo and Bi additions on the microstructure of Zr-Cr-Fe alloy after β -quenching (LUAN Baifeng, Chongqing Univ.)
14:20 ~ 14:40	The anisotropic surface segregation of Sn in zirconium alloys (XIE Shijing, Shanghai Univ.)
14:40 ~ 15:00	Microstructure and properties of new zirconium alloys for CAP1400 fuel assembly (ZENG Qifeng, SNERDI)
15:00 ~ 15:20	Development of CZ zirconium alloys in China (TAN Jun, CGNPC)
15:40 ~ 16:00	A study on classification method of heterogeneous Zr alloys (KIM Donghui, Kepco-NF)
16:00 ~ 16:20	A study on mechanical characteristics of pilger mandrel material under different heat-treatment conditions (PARK Min-Young, Kepco-NF)
16:20 ~ 16:40	The evolution of SPPs in N36 alloy during the tube manufacturing (DAI Xun, NPIC)
16:40 ~ 17:00	The analysis and solution of Ti contamination on Zr-4 strip (LI Gang, SNZ)
17:00 ~ 17:20	Anisotropic tensile behaviors of recrystallized Zr-1.8Nb alloy sheet (YANG Huilong, Univ. of Tokyo)

| 5월 18일 (목)

일 정	내 용
09:20 ~ 09:40	Corrosion behavior of Zr-1Nb-xGe-yBi alloys (YAO Meiyi, Shanghai Univ.)
09:40 ~ 10:00	The corrosion resistance of Zr alloy containing Sn and Fe element (PENG Jianchao, Shanghai Univ.)
10:00 ~ 10:20	Study on corrosion behaviors of HANA-6 and M2 (Zr-1.55wt.%Nb-0.2wt.%Cu) alloys in simulated PWR primary water (JANG Hun, KNF)
10:20 ~ 10:40	Microstructure analysis of pre-transition oxide formed on Zr-Nb-Sn alloy under various Zn and dissolved hydrogen concentrations (KIM Sungyu, Pusan Univ.)
11:00 ~ 11:20	First-principles study of the oxygen adsorption on Zr surface with Nb or Ge (XIE Yao-Ping, Shanghai Univ.)
11:20 ~ 11:40	Corrosion behavior of Cr and Cr-alloy coatings for accident tolerant fuel cladding (PARK Jung-Hwan, KAERI)
11:40 ~ 12:00	Characteristics of Nd-Zr hydride (MUTA Hiroaki, Osaka Univ.)
14:00 ~ 14:20	Development status of surface modified Zr cladding for ATF (KIM Hyun-Gil, KAERI)
14:20 ~ 14:40	Laser-induced formation of a dispersed oxide layer on Zircaloy-4 (JUNG Yang-Il, KAERI)
14:40 ~ 15:00	Behavior of Zr fuel claddings with oxidation resistant coating layer under loss-of-coolant accident condition (PARK Dong Jun, KAERI)
15:00 ~ 15:20	Physical properties of molten Zr-Ni and Zr-Cr alloy (KONDO Toshiki, Osaka Univ.)
15:40 ~ 16:00	Hydride-induced degradation of Zircaloy-4 cladding tubes in the longitudinal and circumferential directions (ZHAO Z., Univ. of Tokyo)
16:00 ~ 16:20	A study on effects of hydrogen content and peak temperature on threshold stress for hydride reorientation (LEE Ji-Min, HanyangUniv.)
16:20 ~ 16:40	Uniaxial tensile properties of fully/partially recrystallized Zr-Nb alloys under a wide temperature range (KANO Sho, Univ. of Tokyo)
16:40 ~ 17:00	Study on low-cycle fatigue property of Zr-Sn-Nb alloy sheet weld joint (LI Shunping, NPIC)
17:00 ~ 17:20	High temperature fatigue characteristics of Zr-alloy sheet material (KIM Joongjin, Kepco-NF)

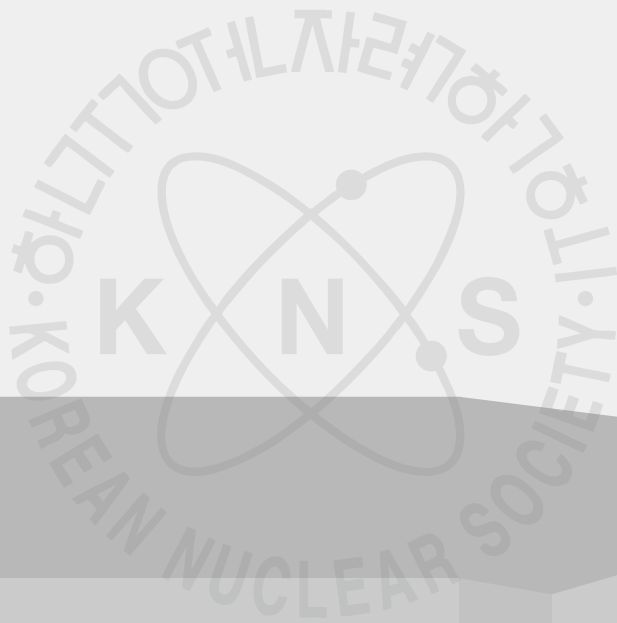
| 5월 19일 (금)

일 정	내 용
10:10 ~ 10:30	Air oxidation of Zr-4 at 600-1600C (PARK Sanggil, ACT)
10:30 ~ 10:50	Oxidation of β -Nb precipitates in Zr-2.5Nb alloy studied by ATP and HRTEM techniques (LIANG Xue, Shanghai Univ.)
10:50 ~ 11:10	Effect of Cu and Ge on the corrosion resistance of zirconium alloys (ZHANG Jin L., Shanghai Univ.)
11:10 ~ 11:30	Influence of internal pressure on oxidation behavior of Zircaloy-2 cladding tube (IOKA Ikuo, JAEA)
11:30 ~ 11:50	Electronic structure and hybridization effects of zirconium alloy in high temperature water (KIM Taeho, UNIST)

| 기타사항 - 등록비 : 일반 30만원, 학생 15만원 (식사 제공)

- 문의처 : 정양일 / 한국원자력연구원 / 042-868-8279 / yijung@kaeri.re.kr

분과별 논제 및 발표자



1A

소듐냉각고속로(Sodium-Cooled Fast Reactor)

5. 18(목)

| 좌장 최치웅(Chi-Woong Choi), 박상길(Sang-Gil Park)

| 발표장소 201B

초청발표

- 09:00 PGSFR BOP System Design Features
Young-Sik Jang, Hyun-Kyu Lee, Kag-Su Jang, and Kil Jung Kim(KEPCO E&C)
- 09:40 Validation of MARS-LMR Code Using EBR-II Unprotected Loss of Heat Sink Test
Chiwoong CHOI, Taekyung Jeong, and Kwilim Lee(KAERI)
- 10:00 Review of SFR Severe Accident Experiments
Si-Won Seo, Sang-Gil Park, Chul-Kyu Lim, and Bong-Jin Ko(ACT Co., Ltd.), Sang-Ji Kim(KAERI)
- 10:20 A Review of Various Stages of the Severe Accident and Different Physical Phenomena for the Sodium-cooled Fast Reactor
Chul-Kyu Lim, Bong-Jin Ko, Sang-Gil Park, and Si-Won Seo(ACT Co., Ltd.), Sang-Ji Kim(KAERI)
- 10:40 Coffee Break
- 11:00 Reivew of the Regulation Status of Source Term for Sodium-cooled Fast Reactor in US
Bong-Jin Ko, Chul-Kyu Lim, Sang-Gil Park, Si-Won Seo, and Sang-gu Han(ACT Co., Ltd.), Sang-Ji Kim(KAERI)
- 11:20 Evaluation on In-vessel Source Term in PGSFR (2017 Results)
Seung Won Lee, Sang June Ahn, Chi-Woong Choi, Kwi Lim Lee, Taekyeong Jeong, and Sunghyuk Im(KAERI)
- 11:40 Possible Hydrodynamic Fragmentation Behaviors of Molten Metallic Fuel in a SFR Fuel Assembly under Initiating Phase of Severe Accidents
Hyo Heo, Min Ho Lee, and In Cheol Bang(UNIST), Dong Wook Jerng(CAU)
- 12:00 Safety Evaluation for Steam Generator Sodium-water Reaction Event in PGSFR
Sang-Jun Ahn, Kwi Lim Lee, Chi-Woong Choi, Seung Won Lee, Jae-Ho Jeong, Taekyeong Jeong, and Sunghyuk Im(KAERI)

1B

고온가스로(High Temperature Gas Cooled Reactor)

5. 18(목)

| 좌장 김찬수(Chan-Soo Kim), 이성남(Sung Nam Lee)

| 발표장소 203

초청발표

- 09:00 Creep Crack Growth Behavior of Candidate Materials for Use in a VHTR System
Woo-Gon Kim, Jae-Young Park, Eung-Seon Kim, Yong-Wan Kim, and Min-Hwan Kim(KAERI)
- 09:40 GAMMA+ Simulation of Phase 1 Exercise 2 of the OECD/NEA MHTGR-350 Benchmark
Nam-il Tak and Hong Sik Lim(KAERI)
- 10:00 CORONA Code Verification on One-sixth Core of VHTR
Sung Nam LEE and Nam-il TAK(KAERI)
- 10:20 Heat Transfer Correlation for 800HT PCHE with Wavy Channel in HELP
Chan Soo Kim, Byung Ha Park, and Eung Sun Kim(KAERI), Dong Hyun An and Jae Sool Shim(YU)
- 10:40 Coffee Break
- 11:00 Demonstration of Diffusion Welding Performance of Alloy 617
Injin Sah, Eung-Seon Kim, and Min-Hwan Kim(KAERI), Jong-Bae Hwang(CNU)

- 11:20 Design of Dry Cooling Tower Using Solar Energy for MMR
Young Jae Choi, Yacine Addad, and Yong Hoon Jeong(KAIST)
- 11:40 Experimental Study on the Mixed Convection Phenomena in the Air-cooled RCCS Riser
Dong-Ho Shin, Sin-Yeob Kim, Hyoung Kyu Cho, and Goon-Cherl Park(SNU), Chan-Soo Kim(KAERI)
- 12:00 A Preliminary Study for Prediction of Supercritical CO₂ Compressor Surge Line
Seong Kuk Cho, Seong Gu Kim, Seungjoon Baik, and Jeong Ik Lee(KAIST)

1C 5. 19 (금)

소듐냉각고속로(Sodium-Cooled Fast Reactor)

| 좌장 김형모(Hyungmo Kim), 김회웅(Hoe-Woong Kim)

| 발표장소 203

- 09:00 A Study on Diversity and Independent Features of Shutdown System of the PGSFR
Jae-Han Lee and Sung-Kyun Kim(KAERI)
- 09:20 Drop Performance Test of Recently Designed Control Rod Assembly for PGSFR
Jin Gwan Son, Hoe Woong Kim, Sang Jin Park, Sun Hee Choi, Jong Bum Kim, and Sung Kyun Kim(KAERI)
- 09:40 Scaling Analysis of Various Simulants for Sodium Thermal-hydraulic Experiment in a Reduced-height Scale Test Facility
Dong Eok Kim and Jae Min Choi(KNU), Jaehyuk Eoh(KAERI), Moo Hwan Kim(POSTECH)
- 10:00 Design Evaluations of High Temperature Piping System in Sodium Test Facility
Seok-Kwon Son, Hyeong-Yeon Lee, and Ji-Young Jeong(KAERI)
- 10:20 Debris Bed Analysis in Discharge of the Molten Fuel through Lower Structure of Fuel Assembly in PGSFR
Min Ho Lee, Hyo Heo, and In Cheol Bang(UNIST), Dong Wook Jerng(CAU)
- 10:40 Coffee Break
- 11:00 Measurements of Enhanced Mixing with U-pattern Wire Wrap Spacer in 19-pin Rod Bundle Using Particle Image Velocimetry
Yeong Shin Jeong, Ji Yong Kim, and In Cheol Bang(UNIST)
- 11:20 Experimental Study on Natural Convection Air Flow Characteristics in a Finned-tube Type Sodium-to-Air Heat Exchanger System
Jaehong Min and Weon Gyu Shin(CNU), Hyungmo Kim, Jaehyuk Eoh, and Ji-Young Jeong(KAERI)
- 11:40 Estimation of Ultrasonic Beam Profile Radiated from a Plate-type Ultrasonic Waveguide Sensor in Sodium
Sang-Jin Park, Hoe-Woong Kim, Young-Sang Joo, Sung-Kyun Kim, and Jong-Bum Kim(KAERI)

1D 5. 19 (금)

경수로/중소형로/연구로

(Light Water Reactor/Small-Medium Size Reactor/Research Reactor)

| 좌장 서경우(KyoungWoo Seo), 이승찬(Seung-Chan Lee)

| 발표장소 203

- 13:30 Development and Verification of Siphon Breaker Simulation Program
Kwon-Yeong Lee and Wan-Soo Kim(HGU)
- 13:50 Design for Joint Module of NTD Hydraulic Rotation Device
Joon Yong Chang, Ki-Jung Park, Seong Hoon Kim, Dae Young Chi, and Cheol Park(KAERI)
- 14:10 Preliminary Safety Classification of SSCs for a Pool-Type Research Reactor
Suki Park(KAERI)

- 14:30 A Study of Residence Time Distributions Using Various Numerical Methods
Minkyu Jung, Kyoungwoo Seo, Daeyoung Chi, Seonghoon Kim, and Cheol Park(KAERI)
- 14:50 Beyond-design-basis Accident Analysis using Bayesian Network: Application to Research Reactor
Shinyoung Kwag, Jinho Oh, and Jong-Min Lee(KAERI)
- 15:10 Coffee Break
- 15:30 A Study on Securing Core Cooling Ability in Case of Total Loss of Feedwater for 2-Loop Westinghouse NPP
Seung-Chan Lee(KHNP CRI), Young-Chan Park(ACT Co., Ltd.)
- 15:50 Sensitivity Analysis on Pressurizer Safety Valve Capacity for Overpressure Protection of Integral Reactor
Minkyu Lee, June Woo Kee, Seungyeob Ryu, Juhyeon Yoon, and Young In Kim(KAERI)
- 16:10 Preliminary Study of Conceptual Design of the ATOM Safety System
Gwang Hyeok Seo, Doyoung Shin, Hong Hyun Son, and Sung Joong Kim(HYU)

1E

5. 18 (목)
- 19 (금)

경수로/중소형로/고온가스로/연구로

(Light Water Reactor/Small-Medium Size Reactor/High Temperature Gas Cooled Reactor/Research Reactor) – POSTER

| 좌장 김응선(Eung-Seon Kim), 지대영(Dae-Young Chi)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P01E01 A Study on Critical Water Level during Mid-Loop Operation
Seonggi Jeong, Kunwoo Yi, Byung Ryul Jung, Yong Sang Ko, Yoon Jae Choe, Seok Jeong Yune, and Seong Chan Park(KEPCO E&C)
- P01E02 Advisory Committee on Reactor Safeguards Review of Reactor for the APR1400 Design Certification
Jeong-kwan Suh and Yun-ho Kim(KHNP CRI)
- P01E03 PCHE Off-design Performance Model for S-CO₂ Power Cycle under SMART Condition
Jinsu Kwon and Jeong Ik Lee(KAIST)
- P01E04 Effect of Magnetic Drive Shaft on Magnetic Forces of the IV-CEDM
Jinseok Park, Myounggoo Lee, Yeonho Cho, Hyunmin Kim, and Chulsoo Maeng(KEPCO E&C)
- P01E05 Preliminary Study of Cycle Layout and Modeling for SMR
Jae Jun Lee, Won Woong Lee, Jinsu Kwon, and Jeong Ik Lee(KAIST)
- P01E06 Conceptual Design of IV-CEDM Installation Structure
Wonho Lee, Jinseok Park, Myounggoo Lee, Yeonho Cho, and Hyunmin Kim(KEPCO E&C)
- P01E07 Implementation and Verification of the Chemical Reaction Models in the GAMMA-FP Fission Products Analysis Tool for VHTR Applications
Churl Yoon and Hong Sik Lim(KAERI)
- P01E08 Numerical Simulation of H₂SO₄ Thermal Decomposer for a Bench-scale Nuclear Hydrogen Production Test Facility
Youngjoon Shin, Taehoon Lee, Kiyoung Lee, Changkeun Jo, and Minhawn Kim(KAERI)
- P01E09 Stress Analysis for Process HX of VHTR Hydrogen Production System
Y.W. Kim and E.S. Kim(KAERI)
- P01E10 An Investigation of Technical Issues on VHTR Off-site Dose Analysis
Nam-il Tak and Sung Nam Lee(KAERI)
- P01E11 Analysis of Beyond Design Basis Accident of S-CO₂ Cooled KAIST Micro Modular Reactor with GAMMA+ Code
Bong Seong Oh, Seong Gu Kim, and Jeong Ik Lee(KAIST)

- P01E12 Effect of Packing Ratio on the Flow Field and Heat Transfer Characteristics of an FCC Pebble Bed
Leisheng Chen and Jaeyoung Lee(HGU)
- P01E13 A Conceptual Study of Using an Isothermal Compressor on a Supercritical CO₂ Cycle for Various Nuclear Applications
Jin Young Heo and Jeong Ik Lee(KAIST)
- P01E14 Control Logic Development of KAIST Micro Modular Reactor for the Replacement of the Container Ship's Propulsion Engine
Do Kyu Kim, Bong Seong Oh, and Jeong Ik Lee(KAIST)
- P01E15 Flow Distribution Analysis of Core of Prismatic VHTR using Looped Network Analysis Method
Jeong-Hun Lee, Dong-Ho Shin, Hyoung-Kyu Cho, and Goon-Cherl Park(SNU)
- P01E16 External Loss Analysis of a Supercritical CO₂ Radial Compressor
Seong Gu Kim, Seong Kuk Cho, and Jeong Ik Lee(KAIST), Jekyoung Lee and Si Woo Lee(Jinsolturbo Machinery Co., Ltd.), Yacine Addad(KUSTAR), Jae Eun Cha(KAERI)
- P01E17 A Conceptual Study of an Integrated Passive Safety System for a Research Reactor
Kwon-Yeong Lee(HGU), Hyun-gi Yoon(KAERI)
- P01E18 Experimental Study on Rotation Characteristic by Material Difference of NTD Hydraulic Rotation Device
Ki-Jung Park, Han-Ok Kang, Seong Hoon Kim, Dae-Young Chi, and Cheol Park(KAERI)
- P01E19 Flow Rate Measurement of the Primary Cooling System Pump through the Motor Performance Data during Commissioning
Hyun-Gi Yoon, Kyoung-Woo Seo, and Dae-Young Chi(KAERI)
- P01E20 Pool Cooling Evaluation in the Open-Pool Research Reactor
Jungwoon Choi, Sunil Lee, Ki-Jung Park, Dae-Young Chi, and Cheol Park(KAERI)
- P01E21 CFD Study on Hot Water Layer Formation for KIJANG Research Reactor
Yong-Seok Choi, Dae-Young Chi, Seung-Hoon Kim, and Cheol Park(KAERI)
- P01E22 Design Guideline for Cooling Tower as Heat Sink in a Research Reactor
Sunil Lee, Kyoung-Woo Seo, Seong-Hoon Kim, Dae-Young Chi, and Cheol Park(KAERI)
- P01E23 Natural Convection Cooling in a 3-dimensional Pool Model of KJRR
Donghyun Kim and Suki Park(KAERI)
- P01E24 Application of Siphon Breaker Simulation Program for Small Scale Siphon Breaker
Sung-Hoon Kim, Jin-Ho Kim, Dae-Yun Ji, and Kwon-Yeong Lee(HGU)
- P01E25 Investigation on Core Downward Flow by a Passive Residual Heat Removal System of Research Reactor
Won Koo Lee, So Jung Kim, Dong Yeong Lee, Won-Ki Hwang, and Kwon-Yeong Lee(HGU)
- P01E26 Development of Movable Pool Hanger in Research Reactor Pool
Jongmin Lee and Byungho Kwag(KAERI)
- P01E27 A Plausible Method to Reduce the Noise from Nuclear Instruments of Research Reactors
Sanghoon Bae, Dane Bang, and Hanju Cha(KAERI)

1F

소듐냉각고속로(Sodium-Cooled Fast Reactor) – POSTER

5. 18 (목)
- 19 (금)

| 좌장 조종호(Chungho Cho), 김낙현(Nak Hyun Kim)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P01F01 Scoping Analysis on Core Disruptive Accident in PGSFR (2017 Results)
Seung Won Lee, Sang June Ahn, Chi-Woong Choi, Kwi Lim Lee, Taekyeong Jeong, and Sunghyuk Im(KAERI)

-
- P01F02 **Review of Radionuclide behavior in the Sodium Pool for MST Analysis**
Bong-Jin Ko, Chul-Kyu Lim, Sang-Gil Park, and Si-Won Seo(ACT Co., Ltd.), Sang-Ji Kim(KAERI)
- P01F03 **Developmental Status of TRACE-SFR Code for the DBA Assessment of SFR**
Andong SHIN and Yong Won Choi(KINS)
- P01F04 **EBR II Unprotected Loss of Heat Sink Prediction and Preliminary Test using MARS-LMR Code**
Seok Ju Kang, Doo Hyuk Kang, and Jae Seung Suh(SenTech), Hae Young Jeong and Chi Woong Choi(Sejong Univ.),
Sung Won Bae and Chi Woong Choi(KAERI)
- P01F05 **Structural Integrity Evaluation of Reactor Enclosure System for PGSFR**
Seong-Hyeon Lee and Sung-Kyun Kim(KAERI)
- P01F06 **Structural Integrity Evaluation for the Dual Rotating Plug in PGSFR**
Seok-Hoon Kim and Seong-Gyun Kim(KAERI)
- P01F07 **Structural Evaluation of FHX for PGSFR at Transient Condition**
Nak Hyun Kim and Sung Kyun Kim(KAERI)
- P01F08 **Integrity Evaluation of the UIS Bottom Plate in PGSFR Regarding the Thermal Striping**
Jae-Hun Cho, Chang-Gyu Park, Sung-Kyun Kim, and Jong-Bum Kim(KAERI)
- P01F09 **Refueling System Design for Prototype Gen-IV Sodium-cooled Fast Reactor**
Dong-Won Lim, Seok-Hoon Kim, and Sung-Kyun Kim(KAERI)
- P01F10 **Preliminary Design Evaluation of IHTS-Combined Steam Generator Concepts for a Sodium-cooled Fast Reactor**
Hyungmo Kim, Jung Yoon, and Jaehyuk Eoh(KAERI), Namhyeong Kim and Moo-Hwan Kim(POSTECH),
Dong Eok Kim(KNU)
- P01F11 **Design of Small Annular Linear Induction Electromagnetic Pumps for STELLA-2**
Eui Kwang Kim, Jung Yoon, Jong Bum Kim, and Jiyoung Jeong(KAERI)
- P01F12 **Performance Test of Electromagnetic Flow Meter in Sodium Thermal Hydraulic Experiment Loop for Finned-tube Sodium-to-Air Heat Exchanger (SELFA)**
Byeong-Yeon Kim, Hyungmo Kim, Youngil Cho, Jong-Man Kim, Yung Joo Ko, Min-Hwan Jung,
and Ji-Young Jeong(KAERI)
- P01F13 **Evaluation of the Insulation Performance of Auxiliary System for STELLA-2**
Chungho Cho, Jong-Man Kim, Yung Joo Ko, Byeongyeon Kim, Youngil Cho, Yong Bum Lee, Ji-Young Jeong,
and Jong-Bum Kim(KAERI)
- P01F14 **Design and Performance Analysis of the Vessel Air Cooling System of STELLA-2**
Youngchul Jo, Sang-Min Park, Jaehyuk Eoh, and Ji-Young Jung(KAERI)
- P01F15 **Experimental Verification of Ranging Inspection Technique for Sodium-cooled Fast Reactor using Horizontal Beam Waveguide Sensor**
Young-Sang Joo, Hoe-Woong Kim, Sang-Jin Park, Sung-Kyun Kim, and Jong-Bum Kim(KAERI)
- P01F16 **Development and Performance Test of Electro-magnetic Acoustic Transducer for Reactor Vessel Inspection in PGSFR**
Hoe-Woong Kim, Snag-Jin Park, Jin-Gwan Son, Young-Sang Joo, Sung-Kyun Kim, and Jong-Bum Kim(KAERI)
- P01F17 **Study of S-CO₂ Power Cycle Off-design Performances for SFR Applications**
Seungjoon Baik, Seong Kuk Cho, and Jeong Ik Lee(KAIST)
- P01F18 **Development of Computational Code for Heat Balance Analysis in N₂ Brayton Cycle Power Conversion System Coupled with an SFR**
Jung Yoon, Jaehyuk Eoh, and Hyungmo Kim(KAERI), Dong Eok Kim(KNU), Moohwan Kim(POSTECH)
- P01F19 **Preliminary Analysis of Airfoil PCHE for the N₂-PCS Recuperator Design**
Jin Gyu Kwon, Joo Hyun Park, Tae Ho Kim, Hyun Sun Park, and Moo Hwan Kim(POSTECH),
Jaehyuk Eoh(KAERI), Dong Eok Kim(KNU)
- P01F20 **Drop Behavior Analysis of Control Rod Assembly for PGSFR Using HEXCON Code**
Kyungho Yoon(KAERI)
-

2A

5. 18 (목)

원자로물리 일반 (Reactor Physics General)

| 좌장 박동환(Donghwan Park), 윤성환(Sunghwan Yun)

| 발표장소 402B

- 09:00 Investigation of Spatial Self-shielding Effects on Control Rod Worth for PGSFR
Min Jae Lee, Jong Hyuck Won, and Jae-Yong Lim(KAERI)
- 09:25 Testing of Improved Thermal Scattering Library for Heavy Water in ENDF/B-VIII. β 4
Haelee Hyun, Do Heon Kim, and Young-Ouk Lee(KAERI)
- 09:50 Three-dimensional Multi-Physics Analysis of an Unprotected LOCA in the CANDU6 System
Jaeha Kim, Min-Gil Kim, and Yonghee Kim(KAIST), Sun Oh Yu(KINS)
- Coffee Break
- 10:15 Shielding Benchmark Calculation on a Multilayer One-dimensional Cylindrical Geometry with AETIUS,
10:35 ANISN, and MCNPX
Jong Woon KIM, Jae Hoon SONG, and Young-Ouk LEE(KAERI)
- 11:00 Derivation and Numerical Solution of Multi-group Neutron Diffusion Equation Using Radial Point
Interpolation Method
Hae Sun Jeong and Kyung-O Kim(KAERI)
- 11:25 Core Follow Calculation for a Hanbit Unit 1 in Cycles 1 through 7 using DeCART2D/MASTER
Yonghee Choi, Hee Jeong Jeong, Cheonbo Shim, and Kyunghoon Lee(KAERI)

2B

5. 19 (금)

원자로해석 방법론 (Reactor Analysis Method)

| 좌장 박호진(Ho Jin Park), 이현철(Hyun Chul Lee)

| 발표장소 402B

- 09:00 Diffusion Synthetic Acceleration (DSA) for the Linear Discontinuous Expansion Method with Subcell
Balance (LDEM-SCB)
Habib Muhammad and Ser Gi Hong(KHU)
- 09:25 Three-dimensional Pin-by-Pin Reactor Core Analysis by the HCMFD Algorithm
Jaeha Kim and Yonghee Kim(KAIST)
- 09:50 Refinements of On-The-Fly Doppler Broadening via Gauss-Hermite Quadrature in Monte Carlo Reactor Analysis
YuGwon Jo and Nam Zin Cho(KAIST)
- 10:15 Coffee Break
- 10:35 Feasibility of the APEC Method in Physics Analysis of a Burned PWR Core
Kyunghoon Lee, Woosong Kim, and Yonghee Kim(KAIST)
- 11:00 Real Variance Reduction in Continuous-Energy Monte Carlo Whole-Core Calculation via p-CMFD Feedback
YuGwon Jo and Nam Zin Cho(KAIST)
- 11:25 A CMFD Acceleration with SP3 Approximation for the Monte Carlo Neutron Transport
Inhyung Kim and Yonghee Kim(KAIST)
- 11:50 Establishment and Preliminary Verification of the nTRACER-RENUS Core Analysis System
Jun Ho Jeong, Young Suk Ban, and Han Gyu Joo(SNU)

2C

5. 19 (금)

신형원자로 연구 (Advanced Reactor Research)

| 좌장 김용희(Yonghee Kim), 김종운(Jong Woon Kim)

| 발표장소 402B

- 13:30 Multi-cycle Analysis on Spent Fuel Re-utilization in PWR Reload Core Design
Yun Seo PARK and Myung Hyun KIM(KHU)
- 13:55 Soluble-Boron- Free SMR Design with Centrally Shielded Burnable Absorbers
Ahmed Amin E. Abdelhameed, Chihyung Kim, and Yonghee Kim(KAIST)
- 14:20 Feasibility of Long-Cycle Core Design for PGSFR
Young Ho PARK and Myung Hyun KIM(KHU)
- 14:45 Coffee Break
- 15:05 Design of Water-Cooled Small Modular Reactor Core with UO₂ Caramel Fuel
Shi Do Lee and Hyung Jin Shim(SNU), Hyeong Heon Kim(KEPCO E&C)
- 15:30 Shutdown Margin Analysis on the iPOWER Equilibrium Core according to the Control Rod Pattern
Jongwoo Lee, Jeongpyo Jeon, Junggyw Lee, Kibong Seong, and Chaejoon Lim(KEPCO NF)
- 15:55 Analysis of Fission Reaction Rate Distributions for the BFS-84-1 Experiments
Sunghwan Yun and Jae-Yong Lim(KAERI)

2D

5. 18 (목)
- 19 (금)

원자로 물리 및 계산과학 (Reactor Physics and Computational Science) – POSTER

| 좌장 조진영(Jin Young Cho), 조창근(Chang Keun Jo)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P02D01 Core Follow Calculation for Hanbit unit 3 Using DeCART2D/MASTER
Sungmin Kim, Cheonbo Shim, Yonghee Choi, and Kyunghoon Lee(KAERI)
- P02D02 Evaluation of DNBR-POL Algorithm in SMART Core Monitoring System
DongYeong Kim, Hyuk Kwon, and BonSeung Koo(KAERI)
- P02D03 Core Follow Calculation of DeCART2D/MASTER4.0 System for Palo Verde Unit 1 in Cycles 1 through 4
Hee Jeong Jeong, Yonghee Choi, Sungmin Kim, and Kyunghoon Lee(KAERI)
- P02D04 Examination of Economics of Small Modular Reactor Based on Overnight Capital Cost
Phil Seo Kim and Man-Sung Yim(KAIST)
- P02D05 A Reactivity Evaluation of Hypothetical Misloadings for WEC 3-Loop Type Plant
Seong-ho Park, Seung-beom Son, Ki-bong Seong, and Chae-joon Lim(KNFC)
- P02D06 A New Genetic Representation Based on Initial Multiplicity of Assembly for In-Core Fuel Management Optimization Problem
Myeong Hyeon WOO, Jae Hyun KIM, Jong Woo KIM, Chan Ho SHIN, and Jong Kyung KIM(HYU)

방사성폐기물관리 (Radioactive Waste Management)

3A

5. 18 (목)

방사성폐기물관리 I (Radioactive Waste Management I)

| 좌장 류호진(Ho Jin Ryu), 백민훈(Min-Hoon Baik)

| 발표장소 401A

초청발표

- 09:00 A Safety Case of the Conceptual Disposal System for Pyro-processing High-level Waste Based on the KURT Site (AKRS-16)
Min Hoon Baik, Nak-Youl Ko, Jongtae Jeong, Kyung-Su Kim(KAERI)
- 09:30 Characteristics of U(IV) Nanoparticles and Their Interactions with Natural and Synthetic Macromolecules in Aqueous Solutions
Wansik Cha, Sun Tae Kim, Deok Beom Seo, Hye-Ryun Cho, and Euo Chang Jung(KAERI)
- 09:50 Sintering of Hydroxyapatite at Extra Ordinary Low Temperature of <math><200^{\circ}\text{C}</math>- A Way Forward to the Effective Immobilization of Radioiodine
Muhmood ul Hassan and Hojin Ryu(KAIST)
- 10:10 Experimental Study of Methyl Iodide Absorption by Zeolite Dry Filtration
Gi Ppeum Kim and Jae Young Lee(HGU)
- 10:30 Fire Test Using a 1/3 Slice Model of the KORAD-B/II Shipping Package
K. S. Bang, S. H. Yu, J. C. Lee, and W. S. Choi(KAERI), D. G. Lee(KONES)
- 10:50 Coffee Break
- 11:10 Conceptual Design Hybrid Cutting System for Type B Radwaste
Kwang Soo Park(DOOSAN), Hyeon Gon Lee(KODA), Colin Smith and Charles Spencer Pitcher(ITER)
- 11:30 A Study on Shielding Performance Evaluation to Discern Suitability of New Shielding Material in Korean Dual Purpose Cask
Jae Hyun Kim, Myung Hyun Woo, Jong Woo Kim, Do Hyun Kim, Chang Ho Shin, and Jong Kyung Kim(HYU)
- 11:50 A Comparative Study on Age Determination of Uranium Oxides by Different Chemical Separation Methodologies Based on TEVA and UTEVA
Sang Ho Lim, Eun Ju Choi, Sun-Ho Han, Ranhee Park, Jinkyu Park, and Chi-Gyu Lee(KAERI)

3B

5. 19 (금)

방사성폐기물관리 II (Radioactive Waste Management II)

| 좌장 차완식(Wansik Cha), 박창제(Chang Je Park)

| 발표장소 401A

- 09:00 Development of Integrated Operation Model for Pyroprocessing (IOMP)
Hyo Jik Lee, Hun Suk Im, Hong Jang, and Jeong Hoe Ku(KAERI), David Krahl and Jian Luo(Kromite)
- 09:20 Examination of Uncertainty in Modeling Mass Transfer and Electrodeposition from Electrorefining Simulation
Young Eun Jung and Man Sung Yim(KAIST)
- 09:40 Effect of Cu Ion on the Corrosion of PWR Materials in HyBRID Decontamination Solution
Jun-Young Jung, Sang-Yoon Park, Hui-Jun Won, Wang-Kyu Choi, Seon-Byeong Kim, and Jei-Kwon Moon(KAERI), So-Jin Park(CNU)
- 10:00 Advanced Treatment Process of Secondary Waste Solution of HyBRID Decontamination Agent
Man-Soo Choi, Hui-Jun Won, Sang-Yoon Park, Wang-Kyu Choi, Joon-Young Jung, Jung-Soon Park, and Seon-Byoung Kim(KAERI)

- 10:20 Preliminary Application of Laser Ablation Inductively Coupled Plasma Mass Spectrometry for Characterization of U-Mo Dispersion Fuel
Jeongmook Lee, Jai Il Park, Young-Sang Youn, Yeong-Keong Ha, and Jong-Yun Kim(KAERI)
- 10:40 Coffee Break
- 11:00 A Scenario Study on PWR Spent Characteristics Using Updated AMORES Program
Gyeong Mi Kim, Geon Hee Jung, and Ser Gi Hong(KHU), Dae Sik Yook(KINS)
- 11:20 Physical and Chemical Properties of Simulated Spent Fuel: Urania Doped with Gd(III) and/or Th(IV)
Jandee Kim, Jeongmook Lee, Young-Sang Youn, Jong-Goo Kim, Yeong-Keong Ha, Sang-Eun Bae, Sang-ho Lim, and Jong-Yun Kim(KAERI), Nazhen Liu and David W. Shoesmith(UWO)

3C

5. 18(목)
- 19(금)

방사성폐기물관리 (Radioactive Waste Management) – POSTER

| 좌장 정종태(Jongtae Jeong), 임상호(Sang Ho Lim)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P03C01 Slitting Test of Zry-4 and SUS316 Tube Using 2-CUT Module
Young-Hwan Kim, Yung-Zun Cho, and Young-Soon Lee(KAERI)
- P03C02 Electron Probe Microanalysis of an Unirradiated Simulated Fuel Heated at 750°C for SFR
Y.S. Choo, Y. J. Kim, B. O. Yoo, S. J. Baik, Y. G. Jin, K. S. Heo, H. M. Kim, and S.B. Ahn(KAERI)
- P03C03 Electrochemical Behavior on Sm and Bi Ion in LiCl-KCl Eutectic Salt Using W Electrode
Beom Kyu Kim, Byung Gi Park, Hwa Jeong Han, Won Ki Kim, and Ji Hye Park(SCH)
- P03C04 A New Method for Mass Separation of Radioactive Waste Using Magnetic Nozzle
Kyoung-Jae Chung, June Young Kim, K. S. Chung, Seongcheol Kim, and Y. S. Hwang(SNU)
- P03C05 Study on the Improvement of Regulatory Framework of LILW Transportation
Sung Il Kim, Yoon-Ji Lee, and Sangmyeon Ahn(KINS)
- P03C06 Consideration on Potential Measures Against Human Intrusion for a Near Surface Disposal Facilities
Dong-Keun Cho, Jung-Woo Kim, Jongtae Jeong, and Min-Hoon Baik(KAERI), Hyosub Kim(HYU)
- P03C07 Model Development for the Post-Closure Safety Assessment of LILW Complex Disposal Facilities
Jung-Woo Kim and Dong-Keun Cho(KAERI), Hyosub Kim(HYU)
- P03C08 Case Study - US NRC「Concentration Averaging and Encapsulation Branch Technical Position, Revision1」
Dong Ju Lee, Jongjin Kim, Dae Seok Hong, Won Hyuk Jang, Il Sik Kang, and Ki Baek Shin(KAERI)
- P03C09 A Study on the Effects of Key Parameters Using A Post-closure Safety Assessment Model for the LILW Disposal Facilities
Hyosub Kim and Moosung Jae(HYU), Jung-Woo Kim, Dong-Keun Cho, Jongtae Jeong(KAERI)
- P03C10 Development of Resin Separation Equipment for Spent Resin Mixture in Heavy Water Reactors (HWR)
Kyu-Tae Park, Jung-Min Yoo, and Young-Ku Choi(Sunkwang T&S Co.,Ltd)
- P03C11 A Review on Uncertainty Analysis Methodologies for the Safety Case of a HLW Repository
Jongtae Jeong, Dong Keun Cho, and Min Hoon Baik(KAERI)
- P03C12 Comparison of DCF Values between ICRP 30 and ICRP 60 Using RESRAD-RECYCLE
Sang-Ho Lee, Hyung-Woo Seo, and Chang-Lak Kim(KINGS)
- P03C13 Dose Assessment Considering Worker's Internal Exposure Factors Affecting Contaminated Metallic Waste Recycling
Hyung-Woo Seo, Kessel David, and Chang-Lak Kim(KINGS)
- P03C14 Scope Management System for Decommissioning Project
Kook-Nam Park, Seung-Kook Park, Jae-Hyun Ha, and Young-San Choe(KAERI), Jin-Ho Park(NuDecom)

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- P03C15 **Laser Cutting Experiment of 100mm-stainless Steel Plate for Nuclear Decommissioning**
Seong Y. Oh, Jae Sung Shin, Sangwoo Seon, Taek Soo Kim, Hyunmin Park, Chin-Man Chung, Byung-Seon Choi, Jei-Kwon Moon, and Jonghwan Lee (KAERI)
- P03C16 **Fabrication of Silver-graphene Fiber Composite for Radioactive Iodine Adsorption**
Minseok Lee and Ho Jin Ryu(KAIST)
- P03C17 **Particle Separation of Non-Decontamination Soil Using Attrition and Washing**
Daeseo Koo, Hyun-Hee Sung, Seung-Soo Kim, Sang Bum Hong, Bum Kyoung Seo, and Jong-Won Choi(KAERI)
- P03C18 **The Impact of Below Detection Limit Samples in (NPP) Decommissioning Residual Risk Assessment**
Jung-Hwan Kim, Carol Hornibrook, and Man-Sung Yim(KAIST)
- P03C19 **Dissolution of Chemical Decontaminating Agent for a Foam Decontamination**
Chong Hun Jung, In Ho Yoon, Sang Yoon Park, Wang Kyu Choi, and Jei Kwon Moon(KAERI), So Hyeon Lee(JNU)
- P03C20 **Technical Review of Historical Site Assessment Experiences at U.S. Nuclear Power Plants**
DongHee Lee, Wook Sohn, SukBon Yoon, and JeongJu Kim(KHNP CRI)
- P03C21 **Experience Review of Full System Decontamination for Decommissioned NPPs**
Jaeyong Lee, Kyoungmin Kim, Seo-yeon Cho, and Yong-soo Kim(HYU)
- P03C22 **A Model Addressing Effect of Growing Oxide Layer on Tritium Permeation in a High Temperature Gas-Cooled Reactor**
Yunjeong Hong and Hyung Gon Jin(KAERI)
- P03C23 **Status of the Decommissioning Project Management Information System Development of KAERI in 2017**
Yunjeong Hong, Heeseong Park, and Seungkook Park(KAERI)
- P03C24 **Review on Environmental Impact Assessment during Decommissioning of Foreign Nuclear Power Plants for Domestic Approach after Decommissioning**
Seo-Yeon Cho, Yong-Soo Kim, and Jaeyong Lee(HYU)
- P03C25 **How to Remove the Radioactive Cesium in Contaminated Soil?**
Byoung-Jik Kim, Jee-Yon Lee, and Hee-Yeul Choi(KINS), Min-Wook Oh(Hanbat Nat'l Univ)
- P03C26 **Comparison of Vacuum and Forced Helium Drying Methods for Dry Storage of Spent Nuclear Fuel**
Ju-Chan Lee, K.S. Bang, S.H. Yu, K.S. Seo, and W.S. Choi(KAERI)
- P03C27 **Radioisotope Assessment of CANDU Spent Fuel Packages through Least Square Fitted Scaling Factors**
Chang Je Park, Hyuk Han, and Seunguk Yoo(Sejong Univ.), Junhyeuk Kim and Hong Ju Ahn(KAERI)
- P03C28 **Structural Assessment Method of Spent Fuel Assembly under 0.3 m Horizontal Drop Condition of Transportation Cask**
Ki Seog Seo, Sang Soon Cho, and Woo Seok Choi(KAERI), Ken B. Sorenson and Paul E. McConnell(SNL)
- P03C29 **A Thermal Analysis of TN-24P Dry Storage Cask System**
Hyungju Yun and Kwangheon Park(KHU)
- P03C30 **Sensitivity Evaluations of Responses with Gamma Shield using SAMPLER**
Kyoon Ho Cha, Min Chul Kim, and Seo Jeong Lee(KHNP CRI)
- P03C31 **Fabrication and Properties of Metal Matrix Composites as a Neutron Absorber Material of the Spent Nuclear Fuel Dry Storage System**
Ji Won Mun, Tae Gyu Lee, and Ho Jin Ryu(KAIST)
- P03C32 **Thermal Performance Sensitivity of SNF Storage Rack Depend on Heat Distribution**
Tae Hyeon Kim and Sunghwan Chung(KHNP CRI), Dongkyu LEE(KONES)
- P03C33 **An Assessment of Uncertainty for a Head End Process in the Pyroprocessing**
Wonjong Song, Hoyoung Shin, Myeonghyeon Woo, and Moosung Jae(HYU)
- P03C34 **Bounding Fuel Type for Criticality Analysis of Dry Storage Cask**
Kiyoung Kim and Sunghwan Chung(KHNP CRI)
- P03C35 **Design Features of an OASIS-32D Metal Cask for both Transport and Storage of SNF**
Kwang-Jeok Ko, Sung-Hwan Kim, Min-Gyu Kim, Yeon-Ho Cho, Hyun-Min Kim, and Joon-Gi Ahn(KEPCO E&C)
- P03C36 **Project Management System for Pyro Project**
Jeong-Guk Kim, Won-Il Ko, Geun-Il Park, and Hyo-On Nam(KAERI), Hyuck-Jong Kim(-)
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- P03C37 Improvement of Particle Recovery Method for Uranium Isotope Analysis Using SIMS
Taehee Kim, Jinkyu Park, Chi-Gyu Lee, Sang Ho Lim, and Sun-Ho Han(KAERI)
- P03C38 Age-dating of UO₂ Based on ²³⁰Th/²³⁴U Determination by New Chemical Separation Method Using UTEVA Resin
Eun Ju Choi, Sang Ho Lim, Sun-Ho Han, Ranhee Park, Jinkyu Park, and Chi-Gyu Lee(KAERI)
- P03C39 A Perylenediimide-Based Organic Microcrystal for the Efficient Removal of Uranium Dissolved in Aqueous Solution
Jinkyu Park(KAERI), Jaeyeon Bae and Jinhee Park(DGIST)
- P03C40 Determination of Organically Bound Tritium (OBT) in a Wheat Sample and Its Interlaboratory Comparison Study
Young Gun Ko, Chang-Jong Kim, Young Hyun Cho, Geun-Sik Choi, Kun Ho Chung, and Mun Ja Kang(KAERI)

4A

재료열화 (Materials Degradation)

5. 18 (목)

| 좌장 임연수(Yun Soo Lim), 진형하(Hyung-Ha Jin)

| 발표장소 201A

초청발표

- | | |
|-------|--|
| 09:00 | Review on Hydride Reorientation Phenomena in the Zirconium Alloy Cladding in the Long-term Dry Storage
Yong Soo Kim(HYU) |
| 09:40 | The Role of Surface Oxidation on Primary Water Stress Corrosion Cracking of Ni-base Alloys
Yun Soo Lim, Seong Sik Hwang, Sung Woo Kim, Dong Jin Kim, and Hong Pyo Kim(KAERI) |
| 10:00 | Role of Minor Alloying Elements on the Oxidation Behavior of Ni-base Alloys in a High Temperature Steam Environment
Sung Hwan Kim, Chaewon Kim, and Changheui Jang(KAIST) |
| 10:20 | PWSCC Behavior of Alloy 600 under Long-term Thermal Aging and Triaxial Stress
Seung Chang Yoo, Kyoung Joon Choi, and Ji Hyun Kim(UNIST), Ji-Soo Kim, Byoung-Ho Choi, and Yun-Jae Kim(KU), Jong-Sung Kim(Sejong Univ.) |
| 10:40 | Coffee Break |
| 11:00 | Evaluation of Thermal Aging Effect on Stress Corrosion Cracking Resistance in Fusion Boundary of A533 Gr. B and Alloy 152
Kyoung Joon Choi, Seung Chang Yoo, Taeho Kim, Seunghyun Kim, and Ji Hyun Kim(UNIST) |
| 11:20 | The Moat Susceptible Reason of Low Temperature Mill Annealed (LTMA) Alloy 600 to PWSCC
SungSoo Kim and YoungSuk Kim(KAERI) |
| 11:40 | The Effect of Proton Irradiation on the Micromechanical Hardness of Ferritic/Martensitic Steel
Jeonghyeon Lee, Tae Yong Kim, and Ji Hyun Kim(UNIST) |
| 12:00 | Application of Proton Irradiation for Study on Radiation Damage of Reactor Pressure Vessel Steel
Hyung-Ha Jin, Gyeong-Geun Lee, Kunok Chang, Sangyeob Lim, and Junhyun Kwon(KAERI) |
| 12:20 | The Validity of First-principles Calculation on Evaluation of Density and Bulk Modulus in Liquid Sodium.
Jeong-Hwan Han and Takuji Oda(SNU) |

4B

핵연료 (Nuclear Materials)

5. 19 (금)

| 좌장 강흥석(Heung Seok Kang), 류호진(Ho Jin Ryu)

| 발표장소 201A

초청발표

- | | |
|-------|---|
| 09:00 | Accident Tolerant Fuel Pellet ; R&D Strategy & Review
Song Kun Woo(KAERI) |
| 09:30 | Accident Tolerant Fuel Cladding; in Progress
Young Jin Kim(FNC Tech.) |
| 10:00 | Recent Fuel Safety Concerns in KINS
Joosuk Lee and Hyeodong Jeong(KINS) |
| 10:20 | Development Status of Surface Modified-Zr Cladding Concept for Accident Tolerant Fuel in LWRs
Hyun-Gil Kim, Il-Hyun Kim, Yang-Il Jung, Dong-Jun Park, Jung-Hwan Park, Byung-Kwon Choi, Young-Ho Lee, Jae-Ho Yang, and Yang-Hyun Koo(KAERI) |
| 10:40 | Coffee Break |

- 11:00 Numerical Study of Crack Behavior in UO₂5 vol% Mo Micro-cell
Heung Soo Lee and Dong Rip Kim(HYU), Dong-Joo Kim, Jae Ho Yang, and Yang-Hyun Koo(KAERI)
- 11:20 Vibration Tests for PWR Fuel Assemblies Submerged in Still Water with a Modal Shaker and a Seismic Shaker
Heung Seok Kang, Kang Hee Lee, and Soo Ho Kim(KAERI)
- 11:40 Fabrication of Neutron Absorber Containing Ceramic Composite Pellets by Using Microwave Sintering
Qusai Mistarihi, Mohd-Sykuri Yahya, Yonghee kim, and HoJin Ryu(KAIST),
Wooseong Park and Kyungseok Nam(KHU)
- 12:00 Progress (II) on the 2nd Irradiation Test of the Metallic Fuel for SFR in the HANARO
Bong Goo Kim, Junehyung Kim, Jin-Sik Cheon, and Chan Bock Lee(KAERI)
- 12:20 Experimental Observation on Burst Behaviors of HANA-6 Cladding in LOCA Conditions
Hun Jang, Sung Yong Lee, Dae Il Kim, Jea Young Lim, Yoon Ho Kim, and Yong Kyoon Mok(KEPCO NF)

4C

5. 19(금)

핵연료&원자력재료 (Nuclear Fuels & Materials)

| 좌장 심희상(Hee-Sang Shim), 박상길(Sang Gil Park)

| 발표장소 201A

- 13:30 Study on Chemical Variations of Interface between U-Zr Alloy and Fe through Annealing
Young-Sang Youn, Jeongmook Lee, Jong Hwan Kim, Hoon Song, Jeong-Yong Park, and Jong-Yun Kim(KAERI)
- 13:50 Air Oxidation Kinetics of Zircaloy-4
Sanggil Park(ACT Co., Ltd.), Yunhwan Maeng and Jaeyoung Lee(HGU)
- 14:10 Effect of Fuel Cladding Surface Modification on Crud Deposition in a Simulated Primary PWR Condition
Seung Heon Baek, Hee-Sang Shim, and Do Haeng Hur(KAERI)
- 14:30 Aging Effect on Thermal Transient Behavior of Fuel Cladding of Sodium-cooled Fast Reactor
Sang Hun Shin, Jun Hwan Kim, Woo Seog Ryu, and Sung Ho Kim(KAERI), Hyeong Min Heo(HYU)
- 14:50 Modeling of Molten Pool Flow Simulation for Zr Tube GTAW Process
Dae Won Cho(KIMM), Tae Hyung Na(KNFC)
- 15:10 Coffee Break
- 15:30 Effect of Chromium Contents on Corrosion Behavior of Ni-Cr-Fe Alloys in PWR Primary Coolant
Hee-Sang Shim, Hyun-Jin Cha, and Do Haeng Hur(KAERI)
- 15:50 Analysis on Chemical States of the Second-row Impurity Atoms in Liquid Lead-Bismuth Eutectic
Junhyoung Gil and Takuji Oda(SNU)
- 16:10 Effects of Dissolved Hydrogen on General Corrosion of Alloy 690TT and Boron Accumulation within Its Oxide Films in PWR Primary Water
Soon-Hyeok Jeon, Geun Dong Song, and Do Haeng Hur(KAERI)
- 16:30 Microstructure Evolution and Chemical Analysis on Carbon Steels and Fe-Cr-Mo Alloys after FAC Simulation Tests
Seunghyun Kim, Taeho Kim, Yun Ju Lee, and Ji Hyun Kim(UNIST)

4D

5. 18(목)
- 19(금)

핵연료 (Nuclear Materials) – POSTER

| 좌장 장훈(Hun Jang), 진영관(Young Gwan Jin)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P04D01 An Analysis on the TRISO Failure Due to Pd-SiC Interactions in a 350-MW_{th} Prismatic HTR Fuel
Young Min Kim and Chang Keun Jo(KAERI)

-
- P04D02 Preliminary Study on the Application of Booster Fuel for HANARO Irradiation Facility
Seongwoo Yang, Seung Jae Park, Yoon Taeg Shin, Man Soon Cho, and Kee Nam Choo(KAERI)
- P04D03 Tribological Characteristics of Surface-Modified Zr-Based Fuel Cladding Against Pre-Oxidized Spacer Grid
Young-Ho Lee, Dong-Jun Park, Hyun-Gil Kim, and Jae-Ho Yang(KAERI)
- P04D04 On the Dimensional Change of Coated Fuel Particles Upon Irradiation Testing
Young-Woo Lee, Jihae Yoon, Yeon-Ku Kim, Seunghwan Yeo, Youngjun Kim, Heemoon Kim, Moon Sung Cho, and Eung Seon Kim(KAERI)
- P04D05 Three-point Bending Test of Irradiated Fuel Cladding in Hot Cell
Y. G. Jin, S. J. Baik, B. O. Yoo, S. Y. Baek, and H. M. Kim(KAERI)
- P04D06 Experimental Investigation on Transient Thermo-mechanical Behavior of Cladding under LOCA Using Fuel Simulator
Ashwini Kumar Yadav, Chang-Hwan Shin, Sung-Uk Lee, and Hyo Chan Kim(KAERI)
- P04D07 Dependence of ZrN Coating Failure of U-Mo Particle on Coating Thickness at High Temperature
Ji-Hyeon Kim and Dong-Seong Sohn(UNIST), Sunghwan Kim, Kyu Hong Lee, and Chong-Tak Lee(KAERI)
- P04D08 Development of Vacuum System for High-temperature Heating Test in Hotcell
Young-jun Kim, Yong-Sun Choo, Boung-Ok Yoo, Ki-Soo Kim, Gil-Soo Kim, Ju-Seong Kim, and Junehyung Kim(KAERI)
- P04D09 Effects of U_3MoSi_2 and Ti-rich Layers on the Diffusion between U and Al
JuJin Won, Sunghwan Kim, KyuHong Lee, YongJin Jeong, KiNam Kim, JongMan Park, and ChongTak Lee(KAERI)
- P04D10 Uncertainty of the Oxide Layer Thickness Formed on the Aluminum Cladding of U-Mo/Al Plate-Type Dispersion Fuel
Faris B. Sweidan and Ho Jin Ryu(KAIST), Young-Wook Tahk and Jeong-Sik Yim(KAERI)
- P04D11 End Plug Weld Properties of FMS Cladding Tube for SFR Fuel Fabrication
I Seul Ryu and Sun Ik Hong(CNU), Jung Won Lee, Sung Ho Kim, and Jeong Yong Park(KAERI)
- P04D12 Fission Energy Deposition in UO_2 through Multi-scale/Physics Hierarchy Modeling: From the First-Principles and SRIM to Molecular Dynamics
Woong Kee Kim and Ji Hoon Shim(POSTECH), Massoud kaviany(U.Michigan)
- P04D13 Preliminary Study on the Preparation of UCO Kernel with C-ADU Gels for VHTR Fuel in Korea
Kyung-chai Jeong, Sung-whan Yeo, Yeon-ku Kim, Sung-ho Eom, Moon-sung Cho, and Eung-sun Kim(KAERI)
- P04D14 Fabrication and Out-of-pile Test of Large Grain UO_2 Pellets
JangSoo Oh, KeonSik Kim, Dong-Soo Kim, JongHun Kim, DongSeok Kim, and JaeHo Yang(KAERI)
- P04D15 Characterization of Additive-Doped UO_2 Pellets with Thermal Annealing Tests
Dong Seok Kim, Jang Soo Oh, Dong-Joo Kim, Jong Hun Kim, Keon Sik Kim, and Jae Ho Yang(KAERI)
- P04D16 The Effects of Cr^{2+} Ion Irradiation on the Formation of Precipitation in Multi-metallic Layer Composite Cladding Processed by Hot Isostatic Pressing
Tae Yong Kim, Jeong Hyeon Lee, and Ji Hyun Kim(UNIST)
- P04D17 Preliminary Conceptual Design for U-Zr Fuel Manufacturing Facility
Jong-Hwan Kim, Ki-Hwan Kim, SeongWoo Kuk, Jung Won Lee, Seok-Jin Jin, Young-Ho Lee, Jeong-Yong Park, and Chan Bock Lee(KAERI)
- P04D18 Oxidation Behavior of Zirconium Alloys with Nanostructured Oxide Films in High Temperature Steam Environments
Yang Jeong Park, Jung Woo Kim, and Sung Oh Cho(KAIST)
- P04D19 High Temperature Oxidation Behavior of the Aluminide Coated Refractory Samples in Steam Environment
Je-Kyun Baek, Woojin Lim, JaeJoon Kim, and Ho Jin Ryu(KAIST)
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4E

재료열화 (Materials Degradation) – POSTER

5. 18 (목)
- 19 (금)

| 좌장 진형하(Hyung-Ha Jin), 반치범(Chi Bum Bahn)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P04E01 Varification of Magnetostrictive Guided Wave Technique with an Elimination of Unwanted Geometry Signals for Detection and Monitoring of Defects in a Pipe Weld
Yong-Moo Cheong, Se-Beom Oh, Duck-Hyun Lee, and Kyung-Mo Kim(KAERI)
- P04E02 Estimation of Primary Radiation Damage Cross Sections for Iron
Junhyun Kwon, Gyeong-Geun Lee, Kunok Chang, Hyung-Ha Jin, and Sangyeob Lee(KAERI)
- P04E03 FAC Test on the Dissimilar Metal Welded Pipeline in High Flow Conditions
Kyung Mo Kim, Jong Yeon Lee, Eun Hee Lee, Yong-Moo Choeng, Se-Beom Oh, and Dong-Jin Kim(KAERI)
- P04E04 Development of Material Databases and Volume Heat Source for Temper Bead Welding Process
Jangho Ahn(ESI Korea), Won Geun Yi(DOOSAN), Sungbu Choi(KINS)
- P04E05 Sensitization Condition of Alloy 182 Welds Joined by Stainless Steel 304 and Low Alloy Steel SA 508
Jae Young Yoon(KAERI), Tae Hyun Lee(KIMM), Il Soon Hwang(SNU)
- P04E06 Eddy Current Simulation for Steam Generator Tube with Deposit
Ga-Hyun Choi, Duck-Hyun Lee, and Kyung-Mo Kim(KAERI)
- P04E07 Development of High Temperature Oxidation Resistant High Entropy Alloys for Coating Materials of Accident Tolerance Fuel Cladding
JaeJoon Kim and HoJin Ryu(KAIST)
- P04E08 Radiation Hardening and Swelling in Ti-bearing Reduced Activation Ferritic-Martensitic Steels
Jungwoo Huh and Chansun Shin(MJU), Hyung-Ha Jin(KAERI), Chang-Hoon Lee(KIMS)
- P04E09 Effect of Copper Addition on Oxide Properties and Corrosion Resistance of Niobium Containing Zirconium Alloy in High Dissolved Hydrogen Primary Water Chemistry
Yunju Lee, Taeho Kim, and Ji Hyun Kim(UNIST)
- P04E10 Study of Irradiation Defect Kinetics in Metal Systems
Sang Il Choi and Ji Hyun Kim(UNIST), Gyeong-Geun Lee and Junhyun Kwon(KAERI)
- P04E11 CRUD Adhesion Test Equipment Set-up Logics under Heat Transfer, Thermohydraulic and Computational Simulation Analysis
Junhyuk Ham, Taeho Kim, Yun Ju Lee, and Ji Hyun Kim(UNIST)
- P04E12 A Study on Development of Probabilistic Crack Initiation Model for Alloy 182 Weld
Jae Phil Park, Chanseok Park, and Chi Bum Bahn(PNU)

4F

소재개발 (Materials Development) – POSTER

5. 18 (목)
- 19 (금)

| 좌장 김민철(Min Chul Kim), 권준현(Jun Hyun Kwon)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P04F01 Combinatorial Techniques for Oxidation Resistant Refractory High Entropy Alloys (RHEA)
Ulanbek Auyeskhan and Ho Jin Ryu(KAIST)
- P04F02 Utilization of a Liquid Metal as Thermal Media in the Irradiation Capsule
Man Soon Cho, Seong Woo Yang, Kee Nam Choo, and Byung Hyuk Jun(KAERI)

-
- P04F03 **Material Irradiation Testing Schedule after Reoperation of HANARO**
Kee-Nam Choo, Man-Soon Cho, Sung-Woo Yang, Yoon-Taek Shin, Seng-Jae Park, Byung-Hyuk Jun,
and Myong-Seop Kim(KAERI)
- P04F04 **Evaluation of Heat Treatment on Microstructure and Mechanical Properties of Modified 9Cr-2W Steel by
Compression Test**
Hyeong Min Heo and Jong Ryoul Kim(HYU), Jun Hwan Kim and Sung Ho Kim(KAERI)
- P04F05 **Status of Oxide Dispersion Strengthened High Entropy Alloys Development**
SeungHyeok Chung and Ho Jin Ryu(KAIST)
- P04F06 **Influence of Boron on Precipitation Behavior and Mechanical Properties in Modified 9Cr Steel for SFR
Fuel Cladding after Aging**
Eun Hee Jeong and Young-Do Kim(HYU), Sung-Ho Kim(KAERI)
- P04F07 **The Effect of Cooling Rate on the Microstructure and Hardness of 9Cr-1Mo ODS Steel**
Ki Nam Jang and Kyu Tae Kim(DGU), Sanghoon Noh, Suk Hoon Kang, Ga Eon Kim, and Tea Kyu Kim(KAERI)

원자력열수력 및 안전 (Thermal Hydraulics and Safety)

5A

원자력 열수력 실험 A (Thermal Hydraulics Experiment)

5. 18(목)

| 좌장 방영석(Young Seok Bang), 이연건(Yeon Gun Lee)

| 발표장소 삼다홀A

초청발표

- 09:00 Experiment Needs to Improve the System Thermal Hydraulics Code Fidelity
Kyung Doo Kim(KAERI)
- 09:30 Critical Bubble Diameter for the Reversal of Lift Force Acting on Single Air-water Bubble
Woo-Ram Lee and Jae-Young Lee(HGU)
- 09:50 Experimental Study on Flow Visualization inside Subchannels of PWR Rod Bundle
Seok Kim, Hae-Seob Choi, Young-Jung Youn, In-Cheol Chu, and Dong-Jin Euh(KAERI)
- 10:10 Model Development of Single-phase Convective Heat Transfer in Partially-blocked Rod Bundles
Ngoc Hung Nguyen, Jongrok Kim, SeungHyun Hong, Sang-Ki Moon, and Chul-Hwa Song(KAERI)
- 10:30 Acoustic Characteristics of Boiling in Water and R123
Seok Bin Seo and In Cheol Bang(UNIST)
- 10:50 Coffee Break
- 11:00 Enhancement of the Condensation Heat Transfer Rate on a Vertical Tube with Annular Fins under Natural Convection Condition
Yeong-Jun Jang, Dong-Jae Choi, and Yeon-Gun Lee(JNU), Sin Kim(CAU)
- 11:20 Experimental Study of Condensation Heat Transfer on the Aluminum Tubes with S.A.M Coating Method
Dae-Yun Ji, Sang-Hyup Lee, and Kwon-Yeong Lee(HGU), Jeong-Won Lee and Woonbong Hwang(POSTECH)
- 11:40 Experimental Study of Two-Phase Critical Flow for Supercritical CO₂ Application
Min Seok Kim, Bong Seong Oh, Jin Su Kwon, and Jeong Ik Lee(KAIST)
- 12:00 Enhanced Thermal Margin of Spent Fuel Dry Storage Cask Applying Hybrid Control Rod
Kyung Mo Kim, Yeong Shin Jeong, and In Cheol Bang(UNIST)

5B

열수력해석 I (TH Analysis I, Multi-dimensional Analysis)

5. 18(목)

| 좌장 정해용(Hae Yong Jeong), 홍순준(Soon Joon Hong)

| 발표장소 삼다홀B

- 09:00 Modified Reynolds Stress Model for Turbulent Bubbly Flows
Seung-Jun Lee, Ji Hyun Sohn, and Han Young Yoon(KAERI), Byoung Jae Kim(CNU)
- 09:20 CUPID Simulation of Siphon Break Experiments
Ik Kyu Park, Han Young Yoon, and Hong Beom Park(KAERI)
- 09:40 Simulation of Boron Dilution Benchmark using CUPID Code
Yun-Je Cho, Jae-Ryong Lee, and Han-Young Yoon(KAERI)
- 10:00 Steady-state Thermal-hydraulic Analysis of PWR Whole Reactor Core in Subchannel Scale Using CUPID
Seok Jong Yoon, Seul Been Kim, Goon Cherl Park, and Hyoung Kyu Cho(SNU)
- 10:20 A Computational Investigation for Steam Condensation on a Flat Plate in the Presence of Non-condensable Gas Using a CUPID Code
MinSeok Ko, YeonJoon Choo, and SoonJoon Hong(FNC Tech.)
- 10:40 Coffee Break

- 11:00 Thermal Hydraulic Analysis of PWR Steam Generator using CUPID-SG: Coupling of the Primary and Secondary Coolant Models
Han Young Yoon, Ik Kyu Park, Jae Ryong Lee, Seung Jun Lee, and Han Sol Kim(KAERI)
- 11:20 GOTHIC Multi-Dimensional Analysis for Containment Implemented with Passive Containment Cooling System (PCCS)
Seong-Su Jeon, Yeon-Jun Choo, and Soon-Joon Hong(FNC Tech.)
- 11:40 CFD Analysis of Steam Jet Injection in a Hybrid SIT
Byong Guk Jeon, Sung-Uk Ryu, and Dong Jin Euh(KAERI)
- 12:00 THAI-HM2 Benchmark Study with STAR-CCM+ Code Simulation
Sang Yun Shin, Hoe-Yeol Kim, and Dong-Wook Jerng(NSRC), Sang June Hahn(PTND)

5C

5. 18 (목)

중대사고 I (Severe Accident I, In-Vessel)

| 좌장 문영태(Young Tae Moon), 안상모(Sang Mo An)

| 발표장소 301

초청발표

- 09:00 Severe Accident Mitigation Features in Korean Advanced NPP
Young Tae Moon and In Seon Yeo(KEPCO E&C)
- 09:30 Examination of SBO Emergency Operating Procedures of APR1400 using MARS Code
Shin Eom and Seung Jong Oh(KINGS)
- 09:50 SAMG Supporting Computational Aid Development Using MAAP-ISAAC Code for PHWR
YongMann SONG, SooYong PARK, DongHa KIM, and JinHo SONG(KAERI)
- 10:10 MELCOR Assessment of Sequential Severe Accident Mitigation Actions under SGTR Accident
Wonjun Choi, Joongoo Jeon, Nam Kyung Kim, and Sung Joong Kim(HYU)
- 10:30 Improved Safety Injection Flow Model Associated with Target Depressurization during Severe Accident Managment
Joongoo Jeon, Wonjun Choi, Nam Kyung Kim, Yongjae Lee, and Sung Joong Kim(HYU)
- 10:50 Coffee Break
- 11:00 Tube Ejection Experiment for an APR1400 ICI Penetration Tube under ERVC Condition
Sang Mo An, Jae Bong Lee, and Hwan Yeol Kim(KAERI)
- 11:20 Modeling and Validation of Pressure Vessel Hole Ablation During Severe Accidents
Mun Won Song and Hee Cheon No(KAIST)
- 11:40 Waste Minimization and CHF Enhancement using Multi-functional Magnetic Nanoparticles during Severe Accident and Decontamination Process in Nuclear Power Plant
Dong Hoon Kam and Yong Hoon Jeong(KAIST)

5D

5. 18 (목)

안전현안 및 화재방호 (Safety Issues and Fire Protection)

| 좌장 박종석(Jong Seuk Park), 김만웅(Man Woong Kim)

| 발표장소 302

초청발표

- 09:00 Legislation of Accident Management and Related Issues
Ku Young Chung and Kyun Tae Kim(KINS)
- 09:30 Current Status and Experimental Study of High Energy Arcing Fault in NPPs
JongSeuk PARK, MeKyoung KIM, and SangKyu LEE(KINS)
- 10:00 Safety Evaluation of Topical Reports on SPACE Code, CAP Code, and SPACE-Based Safety Analysis Methodology
Young Seok Bang and Chae Yong Yang(KINS)

-
- 10:20 Numerical Analysis of Thermal Lag with Various Convection Heat Transfer Coefficient in Severe Accident Environment
Kyungha Ryu, Taehyun Lee, Sanghyuk Lee, Youngjoong Kim, and Dae Hwan Kim(KIMM),
Inyoung Song and Ji Hyun Kim(UNIST)
 - 10:40 Coffee Break
 - 11:00 Severe Accident Environment Simulation System to Evaluate the Equipment Survivability
Taehyun Lee, Kyungha Ryu, Sanghyuk Lee, Youngjoong Kim, and Dae Hwan Kim (KIMM),
Inyoung Song and Ji Hyun Kim (UNIST)
 - 11:20 Effect of Correlation Uncertainty Distribution on Safety Limit CHF
Byeonghee Lee and Suki Park(KAERI)
 - 11:40 Regulatory Policy Perspectives to Enhance Nuclear Safety: Global Trends and Issues
Manwoong Kim, Sukho Lee, Youngeal Lee, Jungjae Lee, and Kuyoung Chung(KINS)
 - 12:00 A Preliminary Fire PSA on PGsFR
Kilyoo Kim, Sanghoon Han, and Kwilim Lee(KAERI)
 - 12:20 Analysis on Regulatory Issues for Unified Application of Industrial Standards of Fire Protection Systems in Nuclear Power Plants
MeKyoung Kim, Weekyoung Kim, and SangKyu Lee(KINS)
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5E

5. 19(금)

확률론적안전성평가 I (PSA Issues)

| 좌장 김도형(Do Hyoung Kim), 허균영(Gyunyoung Heo)

| 발표장소 201B

-
- 09:00 An Approach to Integrate Level-1 and Level-2 PSA
Sang Hoon HAN, Jaehyun Cho, Jin Hee PARK, Dong San KIM, and Ho-Gon LIM(KAERI)
 - 09:20 Review of Current Status of Safety Goals for Nuclear Power Plants in Korea
Ji Suk Kim and Man Cheol Kim(CAU)
 - 09:40 Estimation of Site Core Damage Frequency due to Multi-Unit LOOP: A Case Study on OPR1000 Plants
Dong-San Kim, Sang Hoon Han, Jin Hee Park, and Ho-Gon Lim(KAERI)
 - 10:00 Evaluation Plan for Multi-unit PSA Considering Operating Modes in a Reference Site
Hojun Jeon, Kyemin Oh, and Kiin Bahng(KHNP CRI)
 - 10:20 Updating Seismic PSA for OPR-1000
Jin Hee PARK, Sang Hoon HAN, Dong San KIM, and Ho-Gon LIM(KAERI)
 - 10:40 Coffee Break
 - 11:00 Comparison of Safety Improvement from New Containment Protection Systems in Operating Nuclear Power Plants
Eun-Chan Lee, Kwang-Il Jung, and Byung-Pil Choi(KHNP CRI)
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5F

5. 19(금)

원자력 열수력 실험 B (Reactor Safety Experiment)

| 좌장 주인철(In-Cheol Chu), 조형규(Hyoungh Kyu Cho)

| 발표장소 삼다홀A

-
- 09:00 Experimental Study on the Fluid Structure of Injected Vertical Falling Liquid Film Flow with the Horizontal Gas Flow for DVI
Han Sol Kim and Jae Young Lee(HGU)
 - 09:20 Analysis of the Nitrogen Entrainment in a Safety Injection Tank with a Small Scaled Experiment
Woonho Jeong and Yong Hoon Jeong(KAIST)
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- 09:40 Pool Scrubbing Efficiency for Elemental Iodine with Self-Priming Scrubber Nozzle Used in Containment Filtered Venting System
Woo Young Jung, Jong Chan Lee, Hyun Chul Lee, Gyu Tae Kim, and Doo Yong Lee(FNC Tech.)
 - 10:00 Experimental Study on Pool Scrubbing Efficiency for Aerosol with Self-priming Scrubber Nozzle Used in CFVS
Jong Chan Lee, Woo Young Jung, Hyun Chul Lee, Gyu Tae Kim, and Doo Young Lee(FNC Tech.)
 - 10:20 Development of Test Facility for Evaluating Flow Characteristics for the IHX of Prototype SFR
Minsuk Kong, Woo Shik Kim, Heung June Chung, and Dong Jin Euh(KAERI)
 - 10:40 Coffee Break
 - 11:00 Experimental Study of Natural Circulation in Complete Loss of Coolant Flow Accident with SMART-ITL
Jin-Hwa Yang, Hwang Bae, Sung-Uk Ryu, Byong Guk Jeon, Sung-Jae Yi, and Hyun-Sik Park(KAERI)
 - 11:20 Passive Safety Injection Characteristics of SMART-ITL During SI Break Test
Hwang Bae, Sung Uk Ryu, Jin-Hwa Yang, Eunkoo Yun, Jaemin Kim, Myoung Jun Kim, Yong-Cheol Shin, Kyoung-Ho Min, Jong-Kuk Park, Nam-Hyun Choi, Yun-Gon Bang, Chan-Jong Seo, Sung-Jae Yi, and Hyun-Sik Park(KAERI)
 - 11:40 Core Cooling Characteristics in SMART-ITL with Passive Safety Injection System and Passive Residual Heat Removal System during a SBLOCA Scenario
Hyun-Sik Park, Hwang Bae, Sung-Uk Ryu, Byong-Guk Jeon, Jin-Hwa Yang, Yeon-Sik Kim, Eun-Koo Yun, Jae-Min Kim, Nam-Hyun Choi, Yong-Cheol Shin, Kyoung-Ho Min, Yoon-Gon Bang, Myoung-Jun Kim, Chan-Jong Seo, and Sung-Jae Yi(KAERI)
 - 12:00 MARS-KS System Code Simulations of ATLAS Facility Mid-loop Tests
Marton Szogradi, Ki-Yong Choi, Jongrok Kim, and Kyoung-Ho Kang(KAERI)
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5G
5. 19 (금)

열수력해석 II (TH Analysis II, System Thermal Hydraulic Analysis)

| 좌장 이규천(Gyu Cheon Lee), 최재돈(Jae Don Choi)

| 발표장소 삼다홀B

-
- 09:00 Coupling of SPACE and ASTRA for Transient Analysis based on 3-Dimensional Core Simulation
Jin-Woo Park, Min-Ho Park, Guen-Tae Park, Kil-Sup Um, and Jae-Yong Chang(KEPCO NF)
 - 09:20 A Study of Reactor Vessel Downcomer Channel Model during SLB event
Jong Cheol Park, Chan Eok Park, Jong Ho Choi, and Gyu Cheon Lee(KEPCO E&C)
 - 09:40 Development of Phase Change Model of Heat Structure for the SPACE Code
Seung Wook Lee, Jong Hyuk Lee, Jaeseok Heo, Sung Won Bae, and Kyung-Doo Kim(KAERI)
 - 10:00 The Conservative Momentum Flux and the Collocated Solution Algorithms For the Multi-Dimensional RELAP5
Sang Yong Lee and Adamu Gadu(KINGS)
 - 10:20 Analysis of Uncontrolled Level Drop and Increase during Mid-loop Operation
Ji Hwan Kim and Yong Soo Kim(KHNP CRI)
 - 10:40 Coffee Break
 - 11:00 Long Term Core Cooling Analysis on Loss of Ultimate Heat Sink for APR1400
Su Hyun Hwang, Dong Un Seo, and Soon Il Jung(FNC Tech.), Nam Seok Kim and Yun Il Kim(KINS)
 - 11:20 Transient Analysis of Station Black Out During Mid-Loop Operation for Framatome Nuclear Power Plant
Da Hee Park, Kyung Jin Lee, and Su Hyun Hwang(FNC Tech.), Duck Joo Yoon and Seung Chan Lee(KHNP CRI)
 - 11:40 Prediction of Heat Removal Performance for Passive Containment Cooling System using MARS-KS Code Version 1.14
Sang-Gyu Lim, Dae-Hun Kim, Jae-Min Lee, Sang-Won Lee, and Han-Gon Kim(KHNP CRI), Hee-Cheon No(KAIST)
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5H

5. 19 (금)

중대사고 II (Severe Accident II, Fission Product)

| 좌장 하광순(Kwang Soon Ha), 김성중(Sung Joong Kim)

| 발표장소 301

초청발표

- 09:00 SIRIUS : A Code on Fission Product Behavior under Severe Accident
Kwang Soon Ha, Sung Il Kim, Hyung Seok Kang, and Dong Ha Kim(KAERI)
- 09:30 The Status of Severe Accident Analysis for New Accident Management Plan
Mi Ro Seo(KHNP CRI)
- 10:00 Correlation Confirmation on Removal Rate for Coagulating and Depositing Aerosols
EunHyun Ryu, KwangSoon Ha, and DongHa Kim(KAERI), JiHyeon Lee and JungHo Hwang(Yonsei Univ.)
- 10:20 Comparison of Phenomenological Parameters that are Influential to the Source Term Uncertainty for Station Blackout Accident
Seong Woo Kang and Man Sung Yim(KAIST)
- 10:40 Coffee Break
- 11:00 Development of an Evaluation System for Iodine Decontamination Factor in Filtered Containment Venting System
Jaehoon Jung, Jae Bong Lee, and Hwan Yeol Kim(KAERI)
- 11:20 Modeling of Centrifuge Filtration System for Severe Accident Source Term Treatment
Shuchang Liu and Mansung Yim(KAIST)
- 11:40 Estimation of the Oxidation Rate of Iodide ion under Gamma Irradiation Conditions
Thi Thanh Thuy Nguyen(UST), Kwang Soon Ha and Jin Ho Song(KAERI)
- 12:00 Organic Iodide Capture Using a Zeolite Dry Filtration
Sanggil Park(ACT Co., Ltd.), Joonyoung Sung, Gi-ppeum Kim, and Jaeyoung Lee(HGU)
- 12:20 An Analysis of FCVS Operation Strategy as a Severe Accident Mitigation System Using MELCOR
Hoe-Yeol Kim and Dong-Wook Jerng(CAU)

5I

5. 19 (금)

확률론적안전성평가 II (PSA Use & Application)

| 좌장 정우식(Woosik Jung), 김요찬(Yo Chan Kim)

| 발표장소 201B

- 13:30 Analysis of Initiating Events for SMART using Heat Balance Fault Tree Method
Hansul Lee and Jinhee Park(KAERI)
- 13:50 Transient Analysis of Loss of Main Feedwater for SMART Power Plant
Keon-Yeop Kim, Gyu-Tae Kim, and Young-Suk Bang(FNC Tech.), Jin-Hee Park(KAERI)
- 14:10 Performance Evaluation of SMART Passive Safety System under Small Break Loss of Coolant Accident
Gyu Tae Kim, Keon Yeop Kim, and Young Suk Bang(FNC Tech.), Jin Hee Park(KAERI)
- 14:30 The Evaluation of Battery Capacity Availability by Applying DC Load Shedding and Management for WH1000 NPP
Jung Kwangil, Seo Miro, and Na Janghwan(KHNP CRI)
- 14:50 Recent Empirical Studies on Influential Factors in the Diagnosis Reliability of Operators
Yochan Kim and Jinkyun Park(KAERI)
- 15:10 An Efficient Vital Area Identification Method
Woo Sik Jung(Sejong Univ.)

5J

5. 19 (금)

원자력 열수력 실험 C (CHF Experiment)

| 좌장 조대성(Dae Seong Jo), 김형대(Hyung Dae Kim)

| 발표장소 삼다홀A

초청발표

- 13:30 Visualization Study Toward Mechanistic Understanding of Critical Heat Flux
In Cheol Chu(KAERI)
- 14:00 Dynamic Wetting Characteristics Attributable for Pool Boiling Heat Transfer of FeCrAl- and Cr-layered Vertical Tubes
Hong Hyun Son, Yun Sik Cho, and Sung Joong Kim(HYU)
- 14:20 Dynamic Wetting behavior on Oxidized Surfaces and its Effect on Pool Boiling Critical Heat Flux
Namgook Kim, Hong Hyun Son, and Sung Joong Kim(HYU)
- 14:40 CHF Correlation Development under ERVC Conditions Using Local Liquid Velocity
Jongwoong Yoon and Yong Hoon Jeong(KAIST)
- 15:00 Coffee Break
- 15:20 CHF Simulation using a Non-Heating Experimental Method
Hae-Kyun Park and Bum-Jin Chung(KHU)
- 15:40 Analysis of the Mechanistic Critical Heat Flux Models for Downward Facing Boiling Heat Transfer
Uiju Jeong, Yeon Soo Kim, Taeseok Kim, Nam Kyung Kim, and Sung Joong Kim(HYU)
- 16:00 Visualization of CHF Varying the Surface Orientation Using Non-heating Method
Seung-Min Ohk and Bum-Jin Chung(KHU)
- 16:20 Wettability Effect on CHF in Subcooled Boiling Region using Cu-coated Surfaces under Flow and Atmospheric Pressure Conditions
Dong Hoon Kam, Young Jae Choi, and Yong Hoon Jeong(KAIST)

5K

5. 19 (금)

열수력해석 Ⅲ (TH Analysis Ⅲ, Thermal Hydraulic Models)

| 좌장 이재룡(Jae Ryong Lee), 이승준(Seung-Jun Lee)

| 발표장소 삼다홀B

- 13:30 Modification of the Condensation Heat Transfer Model of the MELCOR Code under the Thermal-Hydraulic Conditions of a PWR Containment
Jee Min Yoo, Jin Hoon Kang, Byong Jo Yun, and Jae Jun Jeong(PNU), Seong Wan Hong(KAERI)
- 13:50 Improvement of CHF Correlation for the Narrow Rectangular Channel under the Downward Flow Condition
Huiyung Kim, Jaejun Jeong, and Byongjo Yun(PNU), Jonghark Park and Cheol Park(KAERI)
- 14:10 Modeling Heat Transfer through CRUD
Dong Yeol Yeo and Hee Cheon NO(KAIST)
- 14:30 Study on Effect of the Perforated Plate by Hole Size in CFVS System
Hyun-Soo KIM, Won-Seok KIM, and Jong-Wook Lee(BHI Co., Ltd)
- 14:50 Thermal Hydraulic Analysis for CFVS Depending on Outlet Orifice Size
jong-wook lee, hyun-soo kim, and won-seok kim(BHI Co., Ltd)
- 15:10 Coffee Break
- 15:30 Development of Fluid to Fluid Scaling Criteria for Modeling Condensation in Horizontal Tubes
Khalid Khasawneh and Yong Hoon Jeong(KAIST)
- 15:50 Dry Cooling System with Direct Contact Heat Transfer on the Falling Film along Vertical Straight String
Jangsik Moon and Yong Hoon Jeong(KAIST)

5L 중대사고 Ⅲ (Severe Accident Ⅲ, Ex-Vessel)

5. 19 (금)

| 좌장 강형석(Hyung Seok Kang), 이정재(Jungjae Lee)

| 발표장소 301

초청발표

- 13:30 Overview of Ex-Vessel Cooling Strategies and Perspectives
Jungjae Lee, Jihun Kim, Taehoon Kim, Young H. Seo, Eunho Kim, and Ku Y. Chung(KINS)
- 14:00 Recent Perspective on the Severe Accident Management Programme for Nuclear Power Plant
Manwoong Kim, Sukho Lee, Jungjae Lee, and Kuyoung Chung(KINS)
- 14:20 Study on the Dimension of Ex-Vessel Passive Molten Core Cooling System for iPOWER
Do Hyun Hwang and Yong Soo Kim(KHNP CRI), Chang Hwan Park(FNC Tech.)
- 14:40 Sensitivity Analysis of MCCI in PHWR Using MELCOR Code
Kysang Song, Joongoo Jeon, and Sung Joong Kim(HYU), Seon Oh Yu and Kyu Byung Lee(KINS)
- 15:00 Modified Two-Phase Friction Model for Porous Media to Better Predict Dryout Heat Flux
Mooneon Lee, Jin Ho Park, Hyun Sun Park, Kiyofumi Moriyama, and Moo Hwan Kim(POSTECH)
- 15:20 Coffee Break
- 15:30 Particle Size Distribution by Low Melting Point Alloy FCI Tests and Impact of Distribution Constant on Debris Bed DHF
Woo Hyun Jung, Mooneon Lee, Kiyofumi Moriyama, Hyun Sun Park, and Moo Hwan Kim(POSTECH)
- 15:50 Investigation of Hydrogen Risk in the Major Containment Compartments of OPR1000 Using MELCOR Code under SBO Scenario
Nam Kyung Kim, Joongoo Jeon, Wonjun Choi, and Sung Joong Kim(HYU)
- 16:10 H₂ Combustion Analysis in the Containment of APR1400 for a SBLOCA Using a Multi-dimensional H₂ Analysis System
hyung seok kang, jongtae kim, sang-baik kim, and seong-wan hong(KAERI)
- 16:30 TEXAS-V Code Analysis for Ex-vessel Fuel Coolant Interaction in IVR-ERVC Strategy
Sang Ho Kim, Seong-Wan Hong, Sang-Baik Kim, and Rae-Joon Park(KAERI)

5M

원자력 열수력 실험 (Thermal Hydraulics and Safety Experiment) – Poster

5. 18 (목)
- 19 (금)

| 좌장 조윤제(YunJe Cho), 전지한(Jihan Chun)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P05M01 Effects of Overlap Length on Pool Boiling from Two Horizontal Tubes in Vertical Alignment
Myeong-Gie Kang(ANU)
- P05M02 Suggestion of Empirical Correlation to Evaluate Effects of Tube Inclination on Pool Boiling Heat Transfer of Various Saturated Liquids
Myeong-Gie Kang(ANU)
- P05M03 Evaluation of a Heat Exchanger Performance Plugged in the RCP Facility
Hae-seob Choi, Young-Jung Youn, Jong-Kuk Park, Seok Kim, and Seok Cho(KAERI)
- P05M04 Sensitivity Analysis of Condensation and Air Natural Convection Coefficients of Air-cooled Condensing Heat Exchanger of Emergency Cooldown Tank in Long-term Passive Cooling System
Seon Jeong Huh and Hee Joon Lee(KMU), Joo Hyung Moon, Youngmin Bae, and Young In Kim(KAERI)
- P05M05 Prospect for Seal Performance Test of the Localized APR1400's RCP
Seok CHO, Seok KIM, Byoung-Uhn BAE, Yun-Jae CHO, Yeon-SIK KIM, Woo-Jin Jeon, and Young-Jung Yun(KAERI)

-
- P05M06 **Integral Effect Test on 17% Cold Leg IBLOCA for Investigation of Scaling Effect**
Byoung-Uhn Bae, Kyoung-Ho Kang, Yu-Sun Park, Jong-Rok Kim, Hyung-Gil Jun, Nam-Hyun Choi, and Ki-Yong Choi(KAERI)
- P05M07 **An Experimental Study of Droplet Entrainment in the Horizontal Stratified Flow**
Byeongeon Bae, Jaejun Jeong, and Byongjo Yun(PNU)
- P05M08 **Design of the Down-scaled Test Vessel for a Hydrodynamic Simulation Reflecting Recent Specification of PGSFR**
Seok-Kyu Chang, Woo Shik Kim, and Dong-Jin Euh(KAERI)
- P05M09 **Strategy Development of the Experimental Characterization for Mixing Characteristics inside Reactor Vessel for Reactor Transient Condition**
Dongjin Euh, Ki-Hwan Kim, and Tae-Soon Kwon(KAERI)
- P05M10 **Experimental Validation for Heat Removal Rate of Single Fin-Tube Heat Exchanger**
Kihwan Kim, Kil-won Park, and Tae-soon Kwon(KAERI)
- P05M11 **An Investigation on the Effect of Break Location on the Thermal-hydraulic Characteristics of the SMART-ITL**
Jaemin Kim, Myoung Jun Kim, Hwang Bae, Sung Uk Ryu, Byoung-Guk Jeon, Jin-Hwa Yang, Eun-Koo Yoon, Yong-Cheol Shin, Kyoung-Ho Min, Jong-Kuk Park, Nam-Hyun Choi, Yun-Gon Bang, Chan-Jong Seo, Sung-Jae Yi, and Hyun-Sik Park(KAERI)
- P05M12 **Design and Simulation for a Helical-coil Steam Generator of FINCLS Facility**
Eunkoo Yun, Hwang Bae, Sung-Uk Ryu, Byong-Guk Jeon, Jin-Hwa Yang, Sung-Jae Yi, and Hyun-Sik Park(KAERI)
- P05M13 **Introduction of the ATLAS Test Facility Upgrade**
Yusun Park, Byoung-Uhn Bae, Jongrok Kim, Hyung-Gil Jun, Young-Chul Shin, Kyoung-Ho Min, Nam-Hyun Choi, Kyoung-Ho Kang, and Ki-yong Choi(KAERI)
- P05M14 **Experiments on Reflood with Deformed Fuel Rods during SB-MB LOCA in PWR**
SeungHyun Hong, Jong-Kuk Park, Young-Jung Youn, Hae Seob Choi, and Sang-Ki Moon(KAERI)
- P05M15 **CFD Analysis for Verification of SFR Reactor Flow Distribution Test Facility**
Woo Shik Kim, Seok-Kyu Chang, and Dong-Jin Euh(KAERI)
- P05M16 **Analysis of Thermal-Hydraulic behavior of PSIS in the SMART-ITL Facility during SBLOCA Test of Pressurizer Safety Valve Line Break**
Myoung Jun Kim, Hwang Bae, Sung Uk Ryu, Byoung-Guk Jeon, Jin-Hwa Yang, Eun-Koo Yoon, Jaemin Kim, Yong-Cheol Shin, Kyoung-Ho Min, Jong-Kuk Park, Nam-Hyun Choi, Yun-Gon Bang, Chan-Jong Seo, Sung-Jae Yi, and Hyun-Sik Park(KAERI)
- P05M17 **An Experimental Investigation of the Curvature Effect on Condensation Heat Transfer of the Air-steam Mixture on a Vertical Cylinder**
Un-ki Kim, Ji-Woong Yoo, Yeong-Jun Jang, and Yeon-Gun Lee(JNU)
- P05M18 **A Study on the Local Flow Structure in a Strongly Heated Rectangular Riser Duct with a Flow Visualization Experiment and CFD Analysis**
Sin-Yeob Kim, Dong-Ho Shin, Goon-Cherl Park, and Hyoung Kyu Cho(SNU), Chan-Soo Kim(KAERI)
- P05M19 **Review of Condensation Mass Flux in the Presence of Non-condensable Gas**
Soon-Joon HONG(FNC Tech.)
- P05M20 **Study of Droplet Movement on Surface of Titanium Plate and Aluminum Plate Surface-modified with S.A.M Coating Method**
Sang-Hyup Lee, Dae-Yun Ji, and Kwon-Yeong Lee(HGU), Jeong-Won Lee and Woonbong Hwang(POSTECH)
- P05M21 **Enhanced Critical Heat Flux in the Downward Facing Pool Boiling Using Layer-by-layer Assembled Carbon Nanotube**
Taeseok Kim, Uiju Jeong, Gwang Hyeok Seo, Hong Hyun Son, and Sung Joong Kim(HYU), Jaemin Lee and Wonjoon Choi(KU)
- P05M22 **Combined Thermal Management and Power Generation Concept for the Spent Fuel Dry Storage Cask**
Inguk Kim and Incheol Bang(UNIST)
- P05M23 **CHF Experiment for Heater Inclination Angle and Material Effect for Downward Facing Surface**
Jun Yeong Jung, Hae Min Park, and Yong Hoon Jeong(KAIST)
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열수력 해석 (TH Analysis) – Poster

5. 18 (목)
- 19 (금)

| 좌장 신안동(An Dong Shin), 이승욱(Seung-Wook Lee)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P05N01 Effect of Transverse Heat Conduction on Plate Type Fuel Wall Heat Flux Distribution
Hyung Min Son and Jonghark Park(KAERI)
- P05N02 Analysis on Containment Response for ECCS Performance Evaluation Following a LBLOCA of APR1400
KyuHyun Han(KINS)
- P05N03 Stress Analyses of IHX Facility in SFR
Hae-seob Choi, Woo-shik Kim, Min-suk kong, and Dong-jin Euh(KAERI)
- P05N04 Evaluation of Fuel Burnup Effects on LOCA PCT Using MARS/FRAPTRAN Coupled Code
Hyong Chol Kim, Young Jin Lee, and Sam Hee Han(NSE)
- P05N05 Numerical Simulation of Highly Buoyant Fluid at Supercritical Pressure
Yoon-Yeong Bae, Eung-Seon Kim, and Minhwan Kim(KAERI)
- P05N06 Development the DEC PIRT for APR1400 ATWS
Bum Soo Youn, Jae Hwa Koh, and Dong Hyuk Lee(KHNP CRI)
- P05N07 Preliminary Thermal Stress Analysis for a Fuel Transfer Cask of PGSFR
Kang Soo Kim, Sung Kyun Kim, and Keun Bae Park(KAERI)
- P05N08 CFD Analysis of Reactor Vessel Internals with Porous Media
Tae-Jin Kim, Sang-Yun Je, and Yoon-Suk Chang(KHU)
- P05N09 Numerical Study to Find Mechanisms Behind the Spread of Fire in a Multi-room Environment
Gong Hee Lee and Ae Ju Cheong(KINS)
- P05N10 Development of RCS-Containment Coupled Analysis Model and Evaluation of LBLOCA for APR-1400
Jeongyun Kim, Young Seok Bang, and Kyuhyun Han(KINS)
- P05N11 Analysis of Loss of RHRS in POSRV Open Case for ATLAS Mid-Loop Test Using MARS-KS Code
Muhammed Mufazzal Hossen(UST), Jongrok Kim, Yusun Park, Byoung-Uhn Bae, Nam-Hyun Choi, and Kyoung-Ho Kang(KAERI)
- P05N12 Performance Assessment of Safety Injection Tank with Fluidic Device during LBLOCA
Seung Hun Yoo and Young Seok Bang(KINS)
- P05N13 Numerical Analysis on Single & Two-phase Turbulent Flow in Subchannel of 2x2 Rod Bundle Using the CUPID Code
Jong Hyuk Lee, Jae Ryong Lee, and Ik kyu Park(KAERI), Jeong-woo Kim(SEOULTECH)
- P05N14 Parametric Study for Designing PCM Condenser as PCCS for APR1400
Hwa-Young Jung, A-Reum Ko, and Jeong Ik Lee(KAIST), Ho Joon Yoon(KUSTAR)
- P05N15 The Assessment of the Accuracy of MARS-KS V1.4 & RELAP5/Mod3.3 for Natural Convection Heat Transfer in a Chimney System
Chul Kyu Lim, Dong Sik Jin, and Sook Kwan Kim(ACT Co., Ltd.)
- P05N16 The Numerical Study for Chimney Heights on Laminar Natural Convection Heat Transfer
Chul Kyu Lim and Sang Koo Han(ACT Co., Ltd.), Bum Jin Chung(KHU)
- P05N17 Evaluation on the Simulation Capability of SPACE Code with Respect to System Pressurization
Eun Ju Lee, Chan Eok Park, Min Soo Park, Jae Young Huh, and Gyu Cheon Lee(KEPCO E&C)
- P05N18 A Study on the Thermal-hydraulic Safety Assessment of Irradiation Capsule for Mini-plate Type Fuel using RELAP5
KYUNGHOO NAM, KEENAM CHOO, MANSOON CHO, and SEONGWOO YANG(KAERI)

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- P05N19 Study on Application of Phase Change Material for Passive Containment Cooling
A-Reum Ko, Hwa-Young Jung, and Jeong Ik Lee(KAIST), Ho Joon Yoon(Khalifa)
- P05N20 Mathematical Model for Effective Thermal Conductivity of Reinforced Concrete Including Round Bar
Hyung Gyun Noh and Hyun Sun Park(POSTECH)
- P05N21 A study on Measuring Hot Leg Temperature with Core Exit Thermocouple in In-Core Instrumentation Guide Tube
Heeyoung Kim, Hocheol Jang, Seokjeong Yune, and Seongchan Park(KEPCO E&C)
- P05N22 Uncertainty Estimation of Henry-Fauske Critical Flow Model Considering Thermal-nonequilibrium Constant and Discharge Coefficient in MARS-KS
Il S. LEE, Young S. Bang, Deog Y. Oh, Byung S. Kim, Suk H. Lee, Jeong Y. Kim, and Chae Y. Yang(KINS)
- P05N23 Behavior and Response Capability of CANDU 6 NPP at Shutdown Condition during Extended Loss of All AC Power
Kyung Jin Lee, Seo Bin Oh, and Su Hyun Hwang(FNC Tech.), Duck Joo Yoon and Seung Chan Lee(KHNP CRI)
- P05N24 Assessment of Condensation Models in the Presence of Noncondensable Gases with Vertical Rectangular Duct and in-tube Tests Using MARS and TRACE
Chi-Jin Choi, Je-Hee Lee, Hyoung-Kyu Cho, and Goon-Cherl Park(SNU)
- P05N25 Two-Fluid Equations with Temporally- and Spatially-Varying Fluid Porosity
Byoung Jae Kim(CNU), Kyung Doo Kim(KAERI)
- P05N26 Application of Adjoint Sensitivity Analysis Procedure(ASAP) to Single Phase Thermal-Hydraulic System Analysis Code
Min-Gil Kim, Won Woong Lee, and Jeong Ik Lee(KAIST)
- P05N27 Performance Comparison of Higher-Order Numerical Schemes Applied to 1D Thermal-Hydraulic System Analysis Code
Won Woong Lee and Jeong Ik Lee(KAIST)
- P05N28 Validation of KAIST-STA (System Transient Analysis) Code with CO2 Experimental Data under the Trans-critical Operating Condition.
Seong Jun Bae, Jinsu Kwon, and Jeong Ik Lee(KAIST)
- P05N29 CFD Simulation Concerning Effect of Aligned Obstacles on Downward Facing CHF
Yeon Soo Kim, Uiju Jeong, and Sung Joong Kim(HYU Nuclear)
- P05N30 Analysis of Loop Seal Clearing and Reformation Phenomena During SBLOCA of the ATLAS Facility
Chang-Yong Jin, Suk-Ho Lee, and Young Seok Bang(KINS)
- P05N31 Optimization Methodology for Fin Geometry on Pool-dry PDHR to Enhance Air Cooling Using CFD
Do Yun Kim and Hee Cheon NO(KAIST)
- P05N32 Numerical Analysis on Instability of Supersonic Impinging Jet using LES
Se-Hong Oh and Choengryul Choi(ELSOLTEC), Won Tae Kim(RETECH), Yoon-Suk Chang(KHU)
- P05N33 Comparison of Different Safety Injection Tank Models in MARS-KS
Jai Oan Cho and Jeong Ik Lee(KAIST), Young Seok Bang and Seung Hun Yoo(KINS)
- P05N34 Adjoint Sensitivity Analysis and Design Optimization of S-CO2 Recompression Brayton Cycle for SFR Application
Seongmin Son and Jeong Ik Lee(KAIST)
- P05N35 Heat Structure Coupling between CUPID and MARS for the Wall Film Condensation Analysis with Non-condensable Gases
Jehee Lee, Goon-Cherl Park, and Hyoung Kyu Cho(SNU)
- P05N36 Enhancement of Heat Transfer in Steam Generator using Turbulentization at Unique Geometry
Joonyoung Sung and Jaeyoung Lee(HGU)
- P05N37 Analysis of Natural Circulation in a Parallel-channel for Single Phase Flow Instability with RELAP5/MOD3
Ki Moon Park and Jeong Ik Lee(KAIST)
- P05N38 The Sensitivity Analysis of Pressure Tube Creep Rates for Dryout Power
Euseung Ryu(KHNP CRI)
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- P05N39 Application of MATRA for Low Flow Subchannel Analysis - PNL 7x7 Blockage Test
Kyong-Won Seo, Hyuk Kwon, Seong-Jin Kim, Juhung Lee, and Dae-Hyun Hwang(KAERI)
- P05N40 Numerical Study of Thermal Hydraulic Behavior of Moisture Separator of Steam Generator by CUPID Code
Jae Ryong Lee, Yun Je Cho, and Han Young Yoon(KAERI), Yong Shin Lee(KNFC)
- P05N41 Code Evaluation on the Conservative Critical Flow Models in SPACE3.0
Suk-Ho Lee(KHNP CRI)
- P05N42 Development the DEC PIRT for APR1400 MSGTR_
Bum Soo Youn, Dong Hyuk Lee, and Jae Hwa Koh(KHNP CRI)
- P05N43 Comparing Different Wall Heat Transfer Packages in the Pre-CHF Regime of Various System Analysis Codes
Sung Gil Shin, Min-Gil Kim, and Jeong Ik Lee(KAIST)
- P05N44 Applicability of Two-fluid Model in Predicting Onset of Flow Instability in a Narrow Rectangular Cooling Channel under Low Pressure
Jong-Pil Park, Hyeonil Kim, and Suki Park(KAERI)
- P05N45 Simple Numerical Study of Molten Metal Fuel Behavior Inside Channel using Explicit Finite Difference Method
Sungbo Moon, Hyo Heo, and In Cheol Bang(UNIST), Dong Wook Jerng(CAU)
- P05N46 Study for Thermal Hydraulic and Radiological Effects on Main Steam Line Break in Westinghouse Type Nuclear Power Plants
Seung-Chan Lee and Duk-Joo Yoon(KHNP CRI)
- P05N47 Swirling Performance of Rotational Mixing Vane in Subchannel using CFD
Haneol Park, Han Seo, and Incheol Bang(UNIST)

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중대사고 IV (Severe Accident IV) – Poster

5. 18(목)
- 19(금)

| 좌장 서미로(Mi Ro Seo), 김성일(Sung Il Kim)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P05001 Validation Test of Computational Code for Corium Pool Behavior in the Lower Plenum of the Reactor Pressure Vessel Against LIVE Experiments
Donggun Son, Jin-Sung Jang, Jun-Ho Bae, Rae-Joon Park, Dong-Ha Kim, and Hwan-Yeol Kim(KAERI)
- P05002 A Behavior of Lower Head by Ex-Vessel Steam Explosion in External Reactor Vessel Cooling
Jihoon Bae, Jongrae Cho, Kwanghyun Bang, and Hyoungtak Kim(KMOU)
- P05003 Conversion Ratio of Molten Corium in TROI Steam Explosion Experiment
Seong-Wan HONG, Young-Su NA, and Rae-Joon PARK(KAERI)
- P05004 Development of Parametric Correlation and Source Term Evaluation
Sung Il Kim and Kwang Soon Ha(KAERI)
- P05005 An Apparatus and Method for a Hemispherical Thickness Measurement using Magnetostrictive Ultrasonic Wave
Ki-Mo Koo and Hwan-Yeol Kim(KAERI), Chiseung Park(UMI)
- P05006 Effect of SIT-FD Modeling on Severe Accident Analysis Using MAPP5
Dong-Kyu Lee, Hyungsok Lee, Chang-Suk Cho, and Geol-Woo Lee(KNFC)
- P05007 Experimental Research on Aerosol Decontamination Performance of the Filtered Containment Venting System in ARIEL Test Facility
Jae Bong Lee, Sung il Kim, Jaehoon Jung, Kwang Soon Ha, and Hwan Yeol Kim(KAERI)
- P05008 The Preliminary Analysis for SBO Accident in SMART with PCCS System
Jong Hwa Park, Sang Ho Kim, and Rae Joon Park(KAERI)

- P05009 Preliminary Calculation for Passive Autocatalytic Recombiner Model of Severe Accident Containment Analysis Package Code
Jaehwan Park, Yu Jung Choi, and Tae Hyub Hong(KHNP CRI)
- P05010 Experimental Study on Pool Boiling Heat Transfer in Water Using Sintered Copper Microporous Coatings on Metal Surface
Hwan Yeol Kim(KAERI), Seungchul Jun and Seung M. You(UTD)
- P05011 Effect of Air-Curtain Discharge Speed on the Effectiveness of Vortex-like Air-Curtain Approach for Severe Accident Management
Sana Ullah and Man Sung Yim(KAIST)
- P05012 Methodology of HPME/DCH Analysis in CINEMA Code
JaeGwon Lee and ChangHwan Park(FNC Tech.)
- P05013 Evaluation of a Spray Technology to Capture Aerosols for Severe Accident Mitigation Outside a Nuclear Power Plant
JongWook Go and ManSung Yim(KAIST)
- P05014 A Study of Nuclear Reactor Pressure Vessel Lower Head Penetration using Numerical Analysis
Wung Jae Wang and Man Sung Yim(KAIST), Jaehoon Jung and Hwan Yeol Kim(KAERI)
- P05015 Current Status of Study for Severe Accidents in the SFPs of CANDU Plants
Sung-deok Yi, Eun-kyung Jang, and Seoung-rae Kim(NESS), Yong-mann Song and Bo-wook Rhee(KAERI)
- P05016 Assessment of Mitigating Strategies using CFVS and CVWM at CANDU Plant under Severe Accident Conditions
gaeul choi, keohyoung lee, and jinyong lee(FNC Tech.)

5P

확률론적안전성평가 (PSA) – Poster

5. 18 (목)
- 19 (금)

| 좌장 한석중(Seok-Jung Han), 장동주(DongJu Jang)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P05P01 A methodology for Level 1 PSA Success Criteria during Mid-loop Operation for Low Power Shutdown Probabilistic Safety Assessment
Jaegab Kim and Tae Hee Hwang(KEPCO E&C)
- P05P02 ISLOCA Analysis for a Typical 1000MW PWR: Accident Progression, FP Distribution, and Accident Management
Sooyong Park, Kwang-Il Ahn, and Dong-San Kim(KAERI)
- P05P03 A Study on Screening Method for Developing External Hazard PSA Models
Ki-In Bahng, Hojun Jeon, and Kyemin Oh(KHNP CRI)
- P05P04 Effect on the Offsite Consequence of the MACCS Non-Site-Specific Best Modeling Practices Used in the US SOARCA Project
Dong Sik Jin, Sang Koo Han, and Chul Kyu Lim(ACT Co., Ltd.), Kwang Il Ahn(KAERI)
- P05P05 Sensitivity Study of the Designs to Improve for OPR1000 Reactor Type
Gumin Ji and Eun-Chan Lee(KHNP CRI)
- P05P06 A Technical Survey of Methodology for the Multi-Unit Probabilistic Safety Assessment
Seunghyun Jang, Dohyun Lim, and Moosung Jae(HYU)
- P05P07 A Quantitative Assessment for Various Severe Accident Management Strategies
Hoyoung Shin, Sunghyun Park, and Moosung Jae(HYU)
- P05P08 Improvement of the Reliability Data Management System(RDMS) for Domestic CANDU Plants
Ho-Chang Yang, Jae-Geun Lee, and Seong-Soo Choi(ACT Co., Ltd.)

- P05P09 **A Study on the Safety Enhancement Idea of EU-APR Design Using the LPSD PSA**
Keun Sung Lee and Do Hyun Hwang(KHNP CRI), Eden Kim and Hyun-Bin Chang(FNC Tech.)
- P05P10 **Application of HuRECA Analysis Method to APR-1400 HRA**
SAEHAN KIM and KYEMIN OH(KHNP CRI)
- P05P11 **A Sensitivity Analysis for Containment Integrity of OPR1000**
Sunghyun PARK, Hoyoung SHIN, and Moosung JAE(HYU)
- P05P12 **Simplified Method for Quantification of Multi-unit STC**
Kyemin Oh, Ho-Jun Jeon, and Ki-in Bahng(KHNP CRI)

5Q

안전현안 및 화재방호 (Safety Issues and Fire Protection) – Poster

5. 18(목)
- 19(금)

| 좌장 박종석(Jong Seuk Park), 서영하(Young Ha Seo)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P05Q01 **Evaluation of Leak Path Factor using MELCOR in Non-Nuclear Facilities**
Hwa Jeong Han, Beom Kyu Kim, Ji Hye Park, Won Ki Kim, and Byung Gi Park(SCHU)
- P05Q02 **Analysis of Overpressure Protection at Low Temperature Condition in EU-APR**
Won Seok Yang and Yong Soo Kim(KHNP CRI), Gil Gon Kim(KEPCO E&C)
- P05Q03 **Evaluation of Performance and Safety Issues in FCVS with MELCOR Code**
Eun Hye Lee, Hoe Yeol Kim, and Dong Wook Jerng(CAU), Tae Woon Kim(KAERI)
- P05Q04 **Analysis of Multiple Spurious Operation Scenarios for Reactor Shutdown Function of CANDU Reactors**
Youngseung Lee, Yeonkyoung Bae, and Myungsu kim(KHNP CRI)

방사선 이용 및 방호 (Radiation Utilization and Protection)

6A

5. 18 (목)

방사선이용 및 방호 (Radiation Utilization and Protection I)

| 좌장 정효준(Hyojoon Jeong), 박종국(Jong Kuk Park)

| 발표장소 402A

- 09:00 The Preparation of Dysprosium Microsphere for $^{166}\text{Dy}/^{166}\text{Ho}$ in Vivo Generator System
Bo-Bae Cho, Ul-Jae Park, Sung Soo Nam, Kyung Duk Jang, Kwon Mo Yoo, and Kanghyuk Choi(KAERI)
- 09:20 Development of Fission Mo-99 Production System for Hot Irradiation Test at HANARO
Seung-Kon Lee, Suseung Lee, Soon-Bog Hong, Kyung-Duk Jang, Ul Jae Park, and Jun Sig Lee(KAERI)
- 09:40 Radiological Impacts Assessment for Possible Occurrence of Incidents during the Decommissioning Operations in EU-APR
Do Hyun Hwang(KHNP CRI), Sukhoon Kim(FNC Tech.)
- 10:00 ^{67}Cu Radioisotope Production with using $^{70}\text{Zn}(p,\alpha)^{67}\text{Cu}$ Nuclear Reaction on Cyclone-30 High Current Cyclotron
Kwon Soo Chun, Sang Kwon Bang, Seo Won Kang, Junyong Choi, and Byeongil kim(KIRAMS)
- 10:20 Dosimetric Evaluation of I-125 Seeds for Treatment of Portal Vein Tumor Thrombosis
Seongmoon Jung and Sung-Joon Ye(SNU), Sujeong Lee(KHU)
- 10:40 Coffee Break
- 11:00 Analysis of the Effect of Radiation Doses on UV Transmission of Intraocular Lenses Using a Spectrophotometer
Jimin Lee, Chang Heon Choi, Ilhan Kim, and Sung-Joon Ye(SNU)
- 11:20 Dual-energy Imaging Performance of a Sandwich Detector for Mouse Imaging
Dong Woon Kim, Junwoo Kim, Jiwoong Park, and Ho Kyung Kim(PNU)
- 11:40 Comparison between FBP and SART for Digital Tomosynthesis for PCB Inspection
Jonghee Yun, Junbeom Park, Seungwoo Ha, and Ho Kyung Kim(PNU)
- 12:00 Feasibility Study of Gamma CT Based on Compton Kinematics
Jae Hyeon Kim, Young-su Kim, and Chan Hyeong Kim(HYU)
- 12:20 Preliminary Study for Body Shape Deformation of Mesh-type Computational Phantoms
Hanjin Lee, Yeon Soo Yeom, Chansoo Choi, Haegin Han, Thang Tat Nguyen, Bangho Shin, and Chan Hyeong Kim(HYU)

6B

5. 19 (금)

방사선이용 및 방호 (Radiation Utilization and Protection II)

| 좌장 김기현(Geehyun Kim), 김영수(Young Soo Kim)

| 발표장소 402A

초청발표

- 09:00 Introduction to Detectors for Synchrotron Radiation Detection and Application
Hyun-Joon Shin(PAL)
- 09:30 A New Approach to Identifying Man-made Radiation
Myungkook Moon(KAERI)

- 10:00 Development of Dose Rate Spectroscopy and Its Application to the In Situ Gamma-Ray Spectrometry
Young-Yong Ji, Chang-Jong Kim, Wannoo Lee, Kun Ho Chung, and Mun Ja Kang(KAERI)
- 10:20 Examination of the Feasibility of Detecting Partial Defect of Spent Fuel Assembly with Radiation to Electricity Conversion Approach
Haneol Lee and Man-Sung Yim(KAIST)
- 10:40 Coffee Break
- 11:00 Benchmark of MCNP6 for Ionization Chamber Simulation in the Presence of a Magnetic Field Using the Fano Cavity Theory: Dose Comparison with EGSnrc, PENELOPE, and Geant4
Jaegi Lee, Jimin Lee, Dongmin Ryu, and Sung-Joon Ye(SNU), Hochan Lee(Ajou Univ.)
- 11:20 Review Study on Variables for Performance Improvement of BF₃ Combination Detector
Nakwon Sung and Heereyoung Kim(UNIST)
- 11:40 Development and Performance Evaluation of Large-area Compton Camera
Young-su Kim, Jae Hyeon Kim, Hyun Su Lee, Jong Hoon Park, and Chan Hyeong Kim(HYU), Han Rim Lee(KAERI)
- 12:00 Absorbed Dose Analysis of Dental Cone-beam Computed Tomography Using Monte Carlo Simulations
Jinwoo Kim, Bitbyeol Kim, and Ho Kyung Kim(PNU)

6C

5. 19 (금)

방사선이용 및 방호 (Radiation Utilization and Protection III)

| 좌장 김홍석(Hongsuk Kim), 이정일(Jungil Lee)

| 발표장소 402A

초청발표

- 13:30 Comparison of the Evaluation Methods for the Effectiveness of the Active Shielding
Cheol-Woo LEE(KAERI), Sangjin LEE(IFS)
- 14:00 Strategy for Enhancing Emergency Response in Relation to Radiological Threat
Hongsuk Kim(KINS)
- 14:30 3-D Virtual Reality Based Radiological Exercise System Phase 1 Study: Basic Modelling of Implementing Virtual Reality
Dewhey Lee, Byung Il Lee, Wook Jo Lee, Min Ho Cha, Hee Sung Ahn, and Younwon Park(Bees Inc)
- 14:50 Evaluation of Atmospheric Source Term Release from Fukushima Daiichi with ORIGEN-MELCOR Code Frames
Tae Woon Kim, Bo Wook Rhee, Sung Il Kim, Kwang Soon Ha, and Jin Ho Song(KAERI)
- 15:10 Coffee Break
- 15:30 On-site Emergency Plan for Nuclear Power Plant Accident
Shaaban Mohamed and Hak Kyu Lim(KINGS)
- 15:50 A Study on Efficiency Improvement of the Hybrid Monte Carlo/Deterministic Method for Global Transport Problems
Jong Woo KIM, Myeon Hyeon WOO, Jae Hyun KIM, Do Hyun KIM, Chang Ho SHIN, and Jong Kyung KIM(HYU)
- 16:10 Measurement of Neutrons Induced by 50 MeV/u Uranium Beams on Thin Graphite Target
Nam-Suk Jung, Arim Lee, and Hee-Seock Lee(PAL), Leila Mokhtari Oranj and Mahdi Bakhtiari(POSTECH), Noriaki Nakao(Shimizu Corporation), Yoshitomo Uwamino(RIKEN)
- 16:30 Calculation of Local Skin Dose Coefficients with ICRP Mesh-type Reference Computational Phantoms
Chansoo Choi, Yeon Soo Yeom, Haegin Han, Thang Tat Nguyen, Hanjin Lee, Min Cheol Han, Hyun Su Lee, Bangho Shin, and Chan Hyeong Kim(HYU)

6D

방사선이용 및 방호 (Radiation Utilization and Protection IV) – Poster

5. 18 (목)
- 19 (금)

| 좌장 김희령(Hee Reyoung Kim), 서보균(Bo Kyun Seo)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P06D01 Feasibility Study of SNF Transportation Risk Assessment using INTERTRAN
Minchul Kim and Kyoong-ho Cha(KHNP CRI)
- P06D02 Design Study of Radiation Protection and Safety System for National Radiation Equipment Research and Fabrication Center in KAERI
Soo Min Lee and Chan Hyeong Kim(HYU), Byeong-No Lee, Moonsik Chae, Jae Hyun Kim, Se Hee Kim, and Hyung Ki Cha(KAERI)
- P06D03 Design and Assessment of Aerosol Sampling System for RMS of HANARO
Sung-Ho Lee, Tae-Woo Go, Seung-Eun Jung, and Kwang-Pyo Hong(KAERI)
- P06D04 Establish of Instant Performance Testing Systems for Neutron Area Monitor by using the Movable Neutron Irradiator
Seung Kyu Lee, Insu Chang, Jungil Lee, Hyoungtaek Kim, Min Chae Kim, Jang-Lyul Kim, and Bong-Hwan Kim(KAERI), Sang In Kim(Naieel technology)
- P06D05 A Preliminary Study on Thermoluminescence of AMOLED Glass from Mobile Phones for Retrospective Dosimetry
Hyoungtaek Kim, Jungil Lee, Insu Chang, Seung Kyu Lee, Min Chae Kim, Sang Won Park, Jang-Lyul Kim, and Bong-Hwan Kim(KAERI), Hyungjoon Yu and Ah-reum Kim(KINS)
- P06D06 A Preliminary Computational Investigation for Flow Distribution in Impregnated Active Carbon Adsorber
MinSeok Ko, JinSeok Hwang, HyunChul Lee, YongJae Song, and DooYong Lee(FNC Tech.), HakSoo Kim(KHNP CRI)
- P06D07 Comparison between Experiment and MCNP Simulation for Retrospective Dosimetry According to the Geometry of Exposure using Electronic Components in a Mobile Phone
Min Chae Kim, Hyoungtaek Kim, Seung Kyu Lee, Insu Chang, Jungil Lee, Jang-Lyul Kim, and Bong-Hwan Kim(KAERI), Chan Hyeong Kim(HYU)
- P06D08 Effect Analysis of Artificial Rare Earth Compound-based Neutron Absorber in Radiation Dose Rate Distribution
Kyung-O Kim, Gyuhong Rho, and Byungchul Lee(KAERI)
- P06D09 A Preliminary Study on the Evaluation of Radiation Damage to Safeguards Instruments in the Head-End Pyroprocess Based on Dose Rate Evaluation
Jinhwan Kim and Gyuseong Cho(KAIST)
- P06D10 Comparison of Shielding Factors Derived from Point Kernel and Monte Carlo Methods
Hae Sun Jeong, Won Tae Hwang, Jo Eun Lee, Eun Han Kim, Hyo Joon Jeong, and Moon Hee Han(KAERI)
- P06D11 Shielding Design of Multi-View 9MeV X-Ray Imaging Facility for Cargo Container Inspection using Monte Carlo Method
Ik-Hyun Kim, Chang-Hwy Lim, Jeong-Hee Lee, and Jong-Won Park(KRISO)
- P06D12 Study of Shielding Performance with Box Shielding Block of the HANARO Cold Neutron Triple-Axis Spectrometer II
Ji-Myung Ryu, J. M. Sungil Park, and Baek-Seok Seong(KAERI)
- P06D13 Radiation-Shielding Calculation of Concrete Wall in Hotcell using High Burnup Spent Fuel Rod
Sanghee Jung, Heemoon Kim, Kwonpyo Hong, Sang-Youl Baik, and Sangbok Ahn(KAERI)
- P06D14 Shielding Performance Evaluation of the Alternative Design for a Concrete Plug of Calandria Vault in the Wolsong Units 3 and 4
Sukhoon Kim and Changhwan Park(FNC Tech.)

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- P06D15 **Design Improvement of an X-ray Tube Applicator to Reduce ORE**
Juhuk Lee, Hyun Nam Kim, Han Beom Park, and Sung Oh Cho(KAIST)
- P06D16 **Towards Optimization of Emergency Management for Radiological Accidents**
INN SEOCK KIM, MISUK JANG, and SEOUNG RAE KIM(NESS)
- P06D17 **Estimation of Source Term Release to Environment in Three Severe Accident Scenarios in Typical PWR and Comparison with Other Research or Accidents**
Tae Woon Kim(KAERI)
- P06D18 **Rapid Determination of U Isotopic Ratios in the Vicinity of Nuclear Facilities**
Jong-Myoung Lim, Ji-Young Park, Yoonhee Jung, Hyuncheol Kim, Won-Young Kim, and Gun-Ho Chung(KAERI)
- P06D19 **Effect of the Duration of Meteorological Data Collection on the Atmospheric Dispersion Assessment**
Yoomi Choi and Eunhee Kim(SNU)
- P06D20 **Concentration Ratios of Various Elements for Wildlife in Freshwaters around the Younggwang Nuclear Site**
Yong-Ho Choi, Kwang-Muk Lim, In Jun, Dong-Kwon Keum, and Hyo-Joon Jeong(KAERI)
- P06D21 **The Combined Effect of Alpha Particles and Cigarette Smoke on Human Lung Epithelial Cells in Terms of DNA Double Strand Breakage Induction**
Ui-seob Lee and Eun-hee Kim(SNU)
- P06D22 **MCNP Dosimetry Study for Prediction of Sn-117m Radiopharmaceuticals Production Yield**
Sang June Jeon, Byung Il Kim, and Jong Guk Kim(KIRAMS), Hanbean Youn(PNUYH)
- P06D23 **Use of the H2AX Activation Response to Investigate DNA Repair Process**
Min-ho Lee and Eun-hee Kim(SNU)
- P06D24 **Clonogenic Cell Surviving Fractions under Modulated X-ray Beam Fields**
Min-ho Lee, Ki-man Lee, and Eun-hee Kim(SNU)
- P06D25 **Analysis Strength of Ir-192 Sealed Capsule for Welding Variable using a FEM**
Jong Han Park, Jin Joo Kim, and Kwang Jae Son(KAERI), Byeok Gi Song(Hojin)
- P06D26 **Performance Evaluation of Ni-63 Betavoltaic Battery**
Jin Joo Kim, Sang Mu Choi, Kwang Jae Son, and Jintae Hong(KAERI), Byoung Gun Choi(ETRI)
- P06D27 **Status and Plans of Sr-82 Development Using a High Energy Proton Accelerator**
Kye-Ryung Kim, Myung-Hwan Jung, Won-Je Cho, Hye-Ran Jeon, Yi-Sub Min, Sang-Pil Yoon, Hyeok-Jung Kwon, and Yong-Sub Cho(KAERI)
- P06D28 **A Neutron Ray Tracing Simulation of Tapering Optics on the Cold Neutron Guide 5 of the HANARO Cold Neutron Research Facility**
J. M. Sungil Park and Baek-Seok Seong(KAERI)
- P06D29 **A Feasibility Study to Characterize the Performance at RIKEN Compact Neutron Source**
Jin Man Kim, Jongyul Kim, ChangHee Lee, and TaeJoo Kim(KAERI),
Atsushi Taketani, Yasuo Wakabayashi, Yoshie Otake, Makoto Goto, and Takao Hashiguchi(RIKEN)
- P06D30 **Experimental Study of Fast Neutron Irradiation on n-Channel MOSFET**
Sung Ho Ahn, Gwang Min Sun, and Hani Baek(KAERI)
- P06D31 **Future Applications of Neutron Beam Instruments for Jordan Research and Training Reactor (JRTR)**
Saed Almomani, Mahmoud Suaifan, and Beak-Seok Seong(KAERI), O. Nusair(JAEC-JRTR)
- P06D32 **An Overview on the Characteristics and Capabilities of the Jordan Research and Training Reactor (JRTR)**
Mahmoud Suaifan, Saed Almomani, and Baek-Seok Seong(KAERI), Omar Nusair(JAEC-JRTR)
- P06D33 **Inspection of Defect in Component of NBI System using Fast-Neutron Imaging**
Youngseok Lee, Jong-Gu Kwak, Hee-Soo Kim, and Seung-Tae Oh(NFRI)
- P06D34 **Measurement of Radon Exhalation Rate from Soils Around Daegu, Korea**
Jihye Seo, Seongjin Maeng, Syam Nur Syamsi, Myo Gwang Kim, and Sang Hoon Lee(KNU)
- P06D35 **Study for Development of Magnetic Particles for Remove Radioactive Cesium and Iodine**
Taewoon Kim and Sang Wook Kim(DGU), Seung-Kon Lee, Suseng Lee, and Jun Sig Lee(KAERI)
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6E

방사선이용 및 방호(Radiation Utilization and Protection V) – POSTER

5. 18 (목)
- 19 (금)

| 좌장 차형기(Hyunki Cha), 김한수(Han Soo Kim)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P06E01 Neutron Beam Monitors Using B_4C Thin Films for Neutron Scattering Instruments
Jongyul Kim, Ki-Seo Lim, Joo-Hyun Lee, Byoungil Jeon, Myung-Kook Moon, and Sang-Jin Cho(KAERI)
- P06E02 Fabrication of Optimized Flattening Filter of Miniature X-ray Tube based on Carbon Nanotubes for a Skin Diseases Treatment
Hyun nam Kim, Han Beom Park, Ju Hyuk Lee, and Sung Oh Cho(KAIST)
- P06E03 Light Collection Efficiency of Large-volume Plastic Scintillator for Radiation Portal Monitoring System
Jin Hyung Lee and Jong Bum Kim(KAERI)
- P06E04 A Preliminary Study on a Compact Muon Tomography Station for Educational Exhibition Purposes
Suhyun Lee, Cheong-Soo Lee, Hwan Shin, Yu-Sun Yeom, Ji Eun Park, Sung Ho Yoo, and Seo Kon Kang(KHNP)
- P06E05 Effect of Annealing Temperature on the Performance of Au/TIBr/Au Semiconductor Radiation Detectors
Seung Hee Lee, Joon-Ho Oh, Young Soo Kim, Chang Goo Kang, Jeongmin Park, Soo Mee Kim, Ah Hyun Park, Park Lee, and Han Soo Kim(KAERI)
- P06E06 Scintillation Properties of $CdWO_4$ Single Crystal Grown at KAERI
J.M. Park, H.S. Kim, Y.S. Kim, J.-H. Oh, C.G. Kang, S.M. Kim, A.H. Park, S.-J. Lee, and S.H. Lee(KAERI)
- P06E07 Film Dosimetry and Spatial Dose Distribution of Electron Beam
Sangyoon Lee, Hyungsan Lim, and Sungoh Cho(KAIST)
- P06E08 Spectral Responsivity of In-house Fabricated Silicon PIN Photodetector for Scintillator Coupling
Chang Goo Kang, Ah Hyun Park, Jang Ho Ha, Young Soo Kim, Joon-Ho Oh, Jeong Min Park, Soo Mee Kim, Seung-Jae Lee, Seung Hee Lee, and Han Soo Kim(KAERI)
- P06E09 Fabrication of Safeguards Neutron Coincidence Counter and Its Inner Structure
Hee Seo, Jong-Myeong Oh, Chaehun Lee, Seong-Kyu Ahn, Jeong-Hoe Ku, and Ho-Dong Kim(KAERI), Seonkwang Yoon(UST)
- P06E10 Characteristics and Fabrication of Silicon PIN Photodiode for Radiation Detectors
Ah Hyun Park, Chang Goo Kang, Young Soo Kim, Joon-Ho Oh, Jeong Min Park, Soo Mee Kim, Seung-Jae Lee, Seung Hee Lee, and Han Soo Kim(KAERI)
- P06E11 Development of a High Performance Charge Sensitive Preamplifier for 3-Dimensional Radiation Imaging
Young Soo Kim, Han Soo Kim, Joon-Ho Oh, Chang Goo Kang, and Soo Mee Kim(KAERI)
- P06E12 Scintillation Properties of Ce doped $Y_3Al_5O_{12}$ Crystal Grown by the Kyropoulos Method
MinJeong Kim, Hongjoo Kim, and Jaeyoung Cho(KNU), M. K. Ki(Kihtec Inc.), H. D. Kim(Gamma Spectra Co.)
- P06E13 FPGA-based 96-CH Digital DAQ System of Double-Scattering Compton Camera
Soo Mee Kim, Han Soo Kim, Joon-Ho Oh, Chang Goo Kang, Jeongmin Park, Ah Hyun Park, Seung-Jae Lee, Seung Hee Lee, and Young Soo Kim(KAERI)
- P06E14 Study of n/g discrimination of He-3 Proportional Counter for the Development of Neutron Survey Meter
Joonbum Choi, Dong Geon Kim, and Yong Kyun Kim(HYU)
- P06E15 Comparison of $^{10}B_4C$ Neutron Monitors of Various Type for Nuclear Material Inspection in Cargo Container Using Monte Carlo Simulation
Chang Hwuy Lim, Jong-Won Park, Jeong-Hee Lee, and Ik-Hyun Kim(KRISO), Myung-Kook Moon(KAERI)
- P06E16 Effect of Geometrical Misalignment on the MTF Measurement
Junwoo Kim, Jiwoong Park, Jinwoo Kim, and Ho Kyung Kim(PNU)
- P06E17 Quantitative Comparison of Continuous and Step Scan Motions in a Micro-Computed Tomography System
Junbeom Park, Eunpyeong Park, Jonghee Yun, Seungwoo Ha, and Ho Kyung Kim(PNU), Seung Ho Kim(KAI)

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- P06E18 **Digital X-ray Tomosynthesis of Very Thin-Slab Objects**
Seungwoo Ha, Daecheon Kim, Jonghee Yun, Junbeom Park, and Ho Kyung Kim(PNU)
- P06E19 **An Analysis of Energy Spectrum for Detection of Gd and Mo in the Nuclear Fuel**
Ajin Jo, Changyeon Yoon, and Wonho Lee(KU), Sung-woo Gwak and Aeri Lee(KINAC)
- P06E20 **The Scintillation Properties of Encapsulated NaI(Tl) Crystal**
Cho Jaeyoung, Kang Sinchul, and Kim Hongjoo(KNU)
- P06E21 **Light Output of Plastic Scintillators Fabricated by UV Curing**
Sangmin Lee, Jaebum Son, and Yong Kyun Kim(HYU)
- P06E22 **Characteristics of Plastic Scintillators Fabricated by DLP 3D Printer**
Dong Geon Kim, Junesic Park, and Yong Kyun Kim(HYU)
- P06E23 **Optimization Study of the Velocity of a Cargo Moving Stage for Container Inspection System**
SangJoon Park, KyungMin Oh, Moonsik Chae, ByungNo Lee, JaeHyun Kim, Jinsik Joo, SooMin Lee, SeHee Kim, HyungKi Cha, HanSoo Kim, MinKoo Heo, and JangHo Ha(KAERI), DongHyeon Lee(KAIST)
- P06E24 **Status of 100-MeV Low-flux Proton Beam Facility Installation at KOMAC**
Kye-Ryung Kim, Dong-Seok Kim, Myung-Hwan Jung, Yong-Seok Hwang, Yi Sub Min, and Yong Sub Cho(KAERI)
- P06E25 **A Method for Improving Reliability of Radiation Detection using Deep Learning Framework**
Hojong Chang, Tae-Ho Kim, Byunghun Han, and Hyunduk Kim(KAIST), Ki-duk Kim(Sun Medical Center)
- P06E26 **MDA Changes due to Prolonged Measurement Time for an HPGe System**
Seongjin Maeng, Muttaqin Margo Nirwono, and Sang Hoon Lee(KNU)
- P06E27 **Prototype Design of a High Sensitive Phase-contrast Computed Tomography at 54.3keV X-ray**
Seho Lee, Youngju Kim, Daeseung Kim, and Seung Wook Lee(PNU), Insoo Kim and Bumsoo Han(EB Tech)
- P06E28 **Novel Method for Graphene Synthesis using PVC through Electron Beam Irradiation**
Na Eun Lee and Sung Oh Cho(KAIST), Jun Mok Ha(KAERI)
- P06E29 **3D Printing Openable Imaging Phantom Design**
Myoung Keun Kim, Jun Hyeok Won, and Seung Wook Lee(PNU)
- P06E30 **Development of UV Absorbing PET through Electron Irradiation**
Jung Woo Kim, Na Eun Lee, Hyung San Lim, Yang Jeong Park, and Sung Oh Cho(KAIST)
- P06E31 **Physical and Optical Changes to Polymers after Electron Irradiation**
Hyung San Lim and Sung Oh Cho(KAIST)
- P06E32 **Construction of 15 MeV NDT System Based on S-band LINAC**
Jae Hyun Kim, Byeong-No Lee, Moonsik Chae, Kyung Min Oh, Jin Sik Ju, Soo Min Lee, Myungkook Moon, Han Soo Kim, Hyung Ki Cha, and Jang Ho Ha (KAERI)
- P06E33 **Development of X-ray Stereo Scanner Simulator for Cargo Inspection**
Ohsung Oh, Youngjoo Kim, Seho Lee, Sun Young Lee, and Seung Wook Lee(PNU)

양자공학 및 핵융합기술 (Quantum Engineering and Nuclear Fusion)

7A

5. 18 (목)

양자공학 및 핵융합기술 (Quantum Engineering and Nuclear Fusion)

| 좌장 오병훈(Byung-Hoon Oh), 김종원(Jong-Won Kim)

| 발표장소 401B

초청발표

- 09:00 Development of Key Technologies for a High-current Superconducting Heavy Ion Linear Accelerator
Jongwon Kim(IFS)
- 09:25 Ultrafast Electron Diffraction Technology for Watching Dancing Atoms
Young Uk Jeong(KAERI)
- 09:50 Ultra-intensity 4 PW Laser and its Applications
Seong Ku Lee, Jae Hee Sung, and Jin Woo Yoon(APRI-GIST, IBS)
Hwang Woon Lee, Je Yoon Yoo, and Chang Hee Nam(IFS)
- 10:15 Status of ITER Construction and KO Procurement Activities
Seungyon Cho, Kijung Jung, Hyeon Gon Lee, Woo Ho Chung, and ITER Korea Team(NFRI)
- 10:40 Coffee Break
- 11:00 Development of W_{mesh} , $W_{\text{short Fibers}}$ and $W_{3D\text{-mesh}}$ Reinforced High Entropy Alloy Composites with Enhanced Toughness for Fusion Applications
Owais Ahmed Waseem and Ho Jin Ryu(KAIST)
- 11:20 Influence of Relief Valves Operation in ITER Vacuum Vessel Pressure Suppression System During Hydrogen and Dust Explosion Accident
Soo Min Lim, Sung Bo Moon, and In Cheol Bang(UNIST)
- 11:40 Fabrication and Characteristics Evaluation of Applicator System of Miniature X-ray Tube Based on Carbon Nanotubes Emitter for Treatment of Skin Cancer
Han Beom Park, Hyun Nam Kim, Ju Hyuk Lee, and Sung Oh Cho(KAIST)

7B

5. 18 (목)

- 19 (금)

양자공학 및 핵융합기술 (Quantum Engineering and Nuclear Fusion) – Poster

| 좌장 오병훈(Byung-Hoon Oh), 허성렬(Sung-Ryul Huh)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P07B01 The Preliminary Design of the Neutron Production Target for the KOMAC Pulsed Neutron Source
Sang-Pil Yoon, Hyeok-Jung Kwon, Han-Sung Kim, Seung-Hyun Lee, Jeong-jeung Dang,
and Young-Gi Song(KAERI)
- P07B02 Current Status of the 10 MeV RF Electron Linear Accelerator for KAERI Electron Beam Irradiation Facility
Sungsu Cha, Yujong Kim, Kyuon Tae Lee, Pikad Buaphad, Youngwoo Joo, Hyerie Lee, Jae-Ho Kim,
and Young-Ouk Lee(KAERI)
- P07B03 Beam Loss and Vacuum Requirement in Heavy Ion Accelerator
Sang Ryul In(KAERI)

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- P07B04 **Development of a 100 MHz RF Ion Source Test Stand at KOMAC**
Soon-Gook Cho, Dae-Il Kim, Hyeok-Jung Kwon, and Yong-Sub Cho(KAERI)
- P07B05 **Design of Solid-state Marx Modulator with High Duty Factor for the Proton Beam Extraction**
Kern Lee, Kyoung-Jae Chung, and Y. S. Hwang(SNU)
- P07B06 **Preliminary Design of the Straight Beam Transport System for Secondary Particle Production Based on the 100-MeV Proton Accelerator**
Hyeok-Jung Kwon, Han-Sung Kim, Young-Gi Song, Seunghyun Lee, Jeong-Jeung Dang, Sang-Pil Yun, and Yong-Sub Cho(KAERI)
- P07B07 **Implementation of the Integrated Alarm System for KOMAC Facility Using EPICS Framework and Eclipse**
Young-Gi Song, Jae-Ha Kim, Han-Sung Kim, Hyeok-Jung Kwon, and Yong-Sub Cho(KAERI)
- P07B08 **EM Analysis of Superconducting Half Wave Resonator for KOMAC 100-MeV Proton Accelerator Energy Upgrade**
Han-Sung Kim, Hyeok-Jung Kwon, Young-Gi Song, Seung-Hyun Lee, Jeong-Jeung Dang, Sang-Pil Yun, and Yong-Sub Cho(KAERI)
- P07B09 **Modeling and Measurement of Hydrogen Ion Species Fractions in a Penning Plasma Discharge**
Kyumin Choe, Kyoung-Jae Chung, and Y. S. Hwang(SNU)
- P07B10 **Initial Test of 1 MV Electrostatic Accelerator with Compact RF Ion Source at KOMAC**
Dae-Il Kim, Soon-Gook Cho, Hyeok-Jung Kwon, and Yong-Sub Cho(KAERI)
- P07B11 **Mechanical Properties of Electron Beam Welds of ARAA Material**
Jae Sung Yoon, Suk-Kwon Kim, Eo Hwak Lee, Hyung Gon Jin, Dong Won Lee, Seong Dae Park, and Dong Jun Kim(KAERI), Seungyon Cho(NFRI)
- P07B12 **Nuclear Fusion Fuel Cycle Bed Materials**
Kwangjin Jung(UST), Hee-Seok Kang and Hongsuk Chung(KAERI), Sei-Hun Yun(NFRI)
- P07B13 **Effective Heat Capacity Method with Mesh Adaptation for Efficient Simulation of Phase Change in the Plasma Facing Wall of Fusion Demo Reactor**
Hee Su Choe, Geon-Woo Kim, Hyoung Kyu Cho, and Goon Cherl Park(SNU), Ki-Hak Im(NFRI)
- P07B14 **Tritium Permeation Rate Estimation for HCCR-TBS NAS**
Yunjeong Hong and Hyung Gon Jin(KAERI), Seungyon Cho(NFRI)
- P07B15 **Measurements of Neutron Flux in 2016 KSTAR Campaign by Ni-58 Activation Foil**
Hyo Jong Lee and In Chang Choi(HU), Jong Ku Kwak(NFRI)
- P07B16 **Fundamental Design Study for Target/Ion Source to Produce ^8Li Beam**
Jeong-Jeung Dang, Hyeok-Jung Kwon, Seung-Hyun Lee, Han-Sung Kim, Young-Gi Song, Dae-Il Kim, and Yong-Sub Cho(KAERI)
- P07B17 **Determination and Comparison of PDD and Isodose Curves for Different Depths of EBT Films**
Arif Hussain, Hyun Nam Kim, Ju hyuk Lee, Han Beom Park, and Sung oh Cho(KAIST)

원전건설 및 운영기술 (Nuclear Power Plant Construction and Operation Technology)

8A

5. 18 (목)

건설 및 운영 (Construction & Operation)

| 좌장 오영진(Young Jin Oh), 유극종(Keuk Jong Yu)

| 발표장소 202B

- 09:00 Initial Overnight Construction Cost Estimate for Small Modular Reactor
Chul Seung Choi(SPC)
- 09:20 A Study on C-CAP During a Construction Phase of NPPs Project
Chul Hyun Kwon, Hee Cheol Kim, and Myung Sub Roh(KINGS)
- 09:40 Load Follow Control Algorithm Improvement through Optimizing Weighting Factors
Keuk-Jong Yu, Sung-Heum Han, and Jae-Gon Lee(KHNP CRI)
- 10:00 A Study on the Distortion of Air Operated Valve Flow Characteristics in the System
Min Kim, Seok Beom Kim, and Hong Sik Park(KEPCO E&C), Hyun Jong Yang(KHNP)
- 10:20 Case Study on Configuration Management System Strategy and Implementation at Krsko NPP, Slovenia
Kyungik An and Jinsang Hwang(PartDB), Kent R. FREELAND(PKE)
- 10:40 Coffee Break
- 11:00 Improvement of the Emergency Operating Procedures for Domestic CANDU Plants
Se-Hoon Oh, Dong-Cheol Kim, and Seong-Soo Choi(ACT Co., Ltd.), Chang-Soo Kim(KHNP)
- 11:20 Corrosion Behavior of SA508 Coupled with and without Magnetite in Chemical Cleaning Environments
Yeong-Ho Son, Soon-Hyeok Jeon, Geun Dong Song, and Do Haeng Hur(KAERI), Jong-Hyeon Lee(CNU)
- 11:40 Suggestion of Use of Containment Integrated Leakage Rate Test for Code Model Validation
Han-Chul Kim, Su-Kyoung Pak, and Jun-Soo Lee(KINS)
- 12:00 Calandria Tube Sagging Prediction of Operating CANDU Reactor Fuel Channel
Oh Young-Jin, Kim Kyung-Su, and Park Heung-Bae(KEPCO E&C), Choi Sung-Nam(KHNP CRI)

8B

5. 19 (금)

지진해석 (Seismic Analysis)

| 좌장 정대울(Dae-Yul Jung), 김진원(Jin Weon Kim)

| 발표장소 202B

- 09:00 Preliminary Core Seismic Analysis for SFR Prototype Reactor
Gyeong-Hoi KOO and Sung-Kyun KIM(KAERI)
- 09:20 Study on IHA Vibration Characteristics with TM-ICI
Jung-Dae Son, Sung-ho Chung, Yu-Sung Kim, and In-Geun Jo(DOOSAN)
- 09:40 Seismic Fragility Reevaluation of SSCs in NPP with Site-specific Response Spectrum
In-Kil Choi, Junghan Kim, Jinhee Park, and Minkyu Kim(KAERI), Jaeho Jeon(JACE Korea)
- 10:00 Issues in Generating Accurate In-Cabinet Response Spectra for Seismic Qualification of Electrical Equipment
Abhinav Gupta(NCSU), Sung-Gook Cho and Minsoo Han(Innose Tech CO. Ltd.), Kee-Jeung Hong(Kookmin Univ.)
- 10:20 Ultimate Strength Test using Simulated Specimen under Excessive Seismic Loads
Jin Weon Kim and Ik Hyun Song(CSU), Heong Do Kweon(KHNP CRI), Jong Sung Kim(Sejong Univ.), Yun Jae Kim(KU)

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- 10:40 Coffee Break
 - 11:00 **Structural Evaluation Method for Protection Against Failures of Safety Class 1 Components under Large Seismic Load**
Hyeong Do Kweon and Eun Ju Heo(KHNP CRI), Jong Sung Kim(Sejong Univ.),
Jong Min Lee, Hyun Suk Nam, and Yun Jae Kim(KU), Jin Won Kim(CSU)
 - 11:20 **A Round Robin Analysis for Developing Strain-based Structural Integrity Assessment Procedure of Nuclear Components under Beyond Design Basis Earthquake**
Jong-Sung Kim and Seok Hyun Lee(Sejong Univ.), Yun-Jae Kim and Jong Min Lee(KU),
Hyeng Do Kweon and Eun Ju Heo(KHNP CRI)
 - 11:40 **Development of Korean Standard Design Response Spectrum for Conventional Facilities**
Jung Han Kim(KAERI), Jae Kwan Kim and Tae Min Heo(SNU), Jin Ho Lee(PKNU)
 - 12:00 **Parametric Seismic Analyses of a Nuclear Power Plant Considering Structure-soil-structure Interaction**
Choon-Gyo Seo, IL-Hwan Moon, and Sang-Pill Han(KEPCO E&C)

8C
5. 19(금) **설계, 수화학 및 구조해석**
(Plant Design, Plant Water Chemistry & Structural Analysis)

| 좌장 허도행(Do Haeng Hur), 원세열(Se Youl Won)

| 발표장소 202B

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- 13:30 **The Design Characteristic and Operating Experience of OPR 1000**
Dae-yul Jung(KHNP)
 - 13:50 **Simulation of RMI(Reflective Metal Insulation) Design for Air-gap Effect between Multi-layer Plates and Side-wall**
Sungmyung Lee, Keywhan Jang, and Wonseok Kim(BHI Co., Ltd), Hongyeong Oh(KLES)
 - 14:10 **Effect of the Outer Diameter of Flywheel on Reactor Coolant Pump Flywheel Integrity Evaluation**
Dong-Hak Kim(KHNP CRI)
 - 14:30 **CT Selection for the Medium Voltage Switchgears in Nuclear Power Plants**
Choong-koo Chang(KINGS)
 - 14:50 **Acceleration of the Corrosion of Alloy 690 by the Galvanic Coupling with Magnetite in Alkaline Solutions Containing Chloride Ions**
Geun Dong Song, Soon-Hyeok Jeon, and Do Haeng Hur(KAERI)
 - 15:10 Coffee Break
 - 15:30 **Protective Structures for mid- and Long-term Dry Intermediate Storage of Spent Fuel Assemblies in Casks - state of the Art and Recent Trends**
Martin Sallmann, Joerg Moersch, and Anna Gallinat(MAEG)
 - 15:50 **Considerations for Dissolved Hydrogen in Primary Water of a PWR**
Do Haeng Hur, Soon Hyeok Jeon, Hee Sang Shim, and Seung Heon Baek(KAERI)
 - 16:10 **Failure Strain and Deformation Angle Measurement for a Steel Pipe Elbow Using Image Signal under In-plane Cyclic Loading Test**
Sung Wan Kim, Bub Gyu Jeon, Dong Uk Park, and Hyoung Suk Choi(PNU)
 - 16:30 **Development of External Flooding Hazard Assessment Methodology for Korea Nuclear Power Plants**
Junhee Park, Young-Sun Choun, and Min Kyu Kim(KAERI), Ju Whan Kang(MNU), Kun Yeon Han(KNU)

8D

5. 18 (목)
- 19 (금)

원전건설 및 운영기술

(Nuclear Power Plant Construction and Operation Technology) – POSTER

| 좌장 김형남(Hyung-Nam Kim), 김성민(Sung Min Kim)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P08D01 Assessment of Safety Effect Due to the Change of the Assumptions Related to ECCS for Safety Analysis of Wolsong Unit 1
sungmin kim(KHNP CRI), dongsik jin and Jong-Hyum Kim(ACT Co., Ltd.)
- P08D02 Protection Scheme of Open Phase Condition for APR1400 NRC DC
Che Wung Ha(KHNP)
- P08D03 Fuel Handling Process between Spent Fuel Storage Pools in APR1400 NPPs
Il Seon Hwang, Sung Hwan Kim, Kwang Jeok Ko, Min Gyu Kim, Yeon Ho Cho, and Hyun Min Kim(KEPCO E&C)
- P08D04 Numerical and Parametric Study on RPV Lower Head Rupture Behavior
Ji-Hoon Kang, Tae-Hyun Kim, and Yoon-Suk Chang(KHU)
- P08D05 Design of Experimental Apparatus for Aging of TEDA-Impregnated Activated Carbon
Jin-Seok Hwang, Min-Seok Ko, Hyun-Chul Lee, Yong-Jae Song, and Doo-Yong Lee(FNC Tech.), Hak-Soo Kim(KHNP CRI)
- P08D06 Characteristics of EU-APR General Arrangement and Structure Design
Daejun Kim, Won Seok Yang, and Ji Whan Kim(KHNP CRI), Hee Cheol Cho and Ji Whan Kim(KEPCO E&C)
- P08D07 Deterministic Cost Estimate of EU-APR
Gag Hyeon Ha and Dae Jun Kim(KHNP CRI), K. J. Park, S. E. Park, S. C. Kim, and M. C. Kim(KEPCO E&C)
- P08D08 Assessment of the Plant Availability in EU-APR
Byung Joon Jung and Yong Soo Kim(KHNP CRI)
- P08D09 Dynamic Analysis of Mineral Insulated Cable Depending on the Routing Shapes
Woocheol Choi, Jinseok Park, Youngju Kwon, Myounggoo Lee, Yeonho Cho, and Hyunmin Kim(KEPCO E&C)
- P08D10 Development of Boron on-line Monitoring System in Reactor Coolant System (RCS)
Seban Lee, Jongsuk Park, and Jinhyun Sung(Huvis Water Corporation),
Seunghee Shin, Jooheon Lee, and Geumyong Hong(BL Process)
- P08D11 Tube Plugging Criteria for Heat Exchangers with U-Tubes Applying USNRC Reg. Guide 1.121
Hyung-Nam Kim(KHNP CRI)
- P08D12 Establishment of a Data Management System to Administrate Inspection History
Hyun Joo Yoo, YongSik Kim, and YooSung Kim(KHNP CRI)
- P08D13 Risk Assessment of Improvement Reactor Shutdown Signal Redundancy for Rcp Breaker Opening
Byung-Pil Choi and Eun-Chan Lee(KHNP CRI)
- P08D14 The Environmental Qualification of Non-metallic Part of Pneumatic Valve by System 1000 Analysis and Type Testing
Kyung-Heum Park, Keug-Jin Bhang, Sun-Chul Jeong, Chul-Hwan Yun, and Han-Su Kim(KHNP CRI)
- P08D15 Methodology for Selecting Periodic Safety Inspection Items to Reinforce the First Level of Defense-in-Depth
Jihan LIM, Jinyoung PARK, Younwon PARK, and Heesung ANN(BEES, Inc)
- P08D16 Code Case Development Procedures through the KEPIC-MN Q&A System
SoYoung Jeon, MinSuk Lee, Gunsuk Choi, and JongHae Kim(KEA)
- P08D17 Application of Stochastic Model on Evaluation of Neutralization Probability for Physical Protection System Design
Min Ho Kang(KINAC)
- P08D18 Performance Analysis for a 12-Finger CEA Drop Test of the SHN Unit 1
SungHyun Shin, MyungJun Song, Inho Song, and GyuCheon Lee(KEPCO E&C),
YoungBaek Kim and YoungJae Choi(KEPCO NF)

원자력정책, 인력 및 협력 (Nuclear Policy, Human Resources and Cooperation)

9A

5. 18(목)

원자력정책, 인력 및 협력 1 (Nuclear Policy, Human Resources and Cooperation 1)

| 좌장 정범진(Bum-Jin Chung), 윤병조(Byong-Jo Yun)

| 발표장소 202A

초청발표

- 09:00 Prospects for Nuclear Energy and Non-proliferation Policies of the Trump Administration
Jae Soo Ryu, Eunju Jun, Youngwoo Lee, and Koenhee Lee(KAERI)
- 09:40 The Influence of Supervisor's Transformational Leadership on Learning Culture and Learning Transfer of Nuclear R&D Personnel
Sang-Ki Min, Hye-Seon Hwang, You-Rim Jin, Eui-Jin Lee, Su-Jin Lee, and Soo-Jin Lee(KAERI)
- 10:00 Upgrading of an SAT Based Design Approach for Nuclear Education and Training Programs
Eui Jin Lee, Youngmi Nam, Hyeseon Hwang, Sipyo Rho, and Eunsook Jang(KAERI), Kyong Won Han(RadWorks)
- 10:20 A Study of the Pre-retirement Program Implementation for KAERI Nuclear Experts
Hyo-Jeong Hong, Hye-Seon Hwang, Young-Mi Nam, You-Rim Jin, and Eun-Ju Song(KAERI)
- 10:40 Coffee Break
- 11:00 Public's Cognitive and Emotional Responses to Nuclear Messages : Implications for Effective Nuclear Communication Programs
Hyo Jung Kim(KINGS)
- 11:20 The Policy Making and NPP Construction Processes in Korea - The Reality of Civil Participation and a Suggestion to Improve the Public Acceptance
Jae Young Yang(KINGS)
- 11:40 The Analysis for IAEA Policy using Big Data
Byungmarn Koh and Sunyoung Chang(KINAC)

9B

5. 19(금)

원자력정책, 인력 및 협력 2 (Nuclear Policy, Human Resources and Cooperation 2)

| 좌장 유호식(Ho-Sik Yoo), 임만성(Man-Sung Yim)

| 발표장소 202A

- 09:00 Feasibility Assessment of ROK's Military Countermeasures Against North Korean Nuclear Weapons
Young A Suh and Man-Sung Yim(KAIST)
- 09:20 An Analysis on Risk of Nuclear Materials and Threat of Domestic Nuclear Terrorism
YeoRyeong Jeon and Yongmin Kim(CU), Sunyoung Chang(KINAC)
- 09:40 A Study on the Implementation Procedures of Export/Import Controls Pursuant to a Bilateral Nuclear Cooperation Agreement
Jinho Chung(KINAC)
- 10:00 Climate Change Modeling for Nuclear Industry Using Systems Thinking : Spirit at the University of Maryland
TAE HO WOO(Yonsei Univ.)
- 10:20 A Review on the Concept of "Practical Elimination"
Jihan Lim and Young Sung Choi(KINS)
- 10:40 Coffee Break

- 11:00 Japan's Nuclear Safety Regulation After the Fukushima Accident : Regulatory Framework Changes and Current Restart Status of NPPs
Jihwan Lim, Young Eal Lee, Minjeong Byeon, Jeongwon Yoo, and Jongmin Lee(KINS)
- 11:20 Public Engagement in Nuclear Safety
Youngeal Lee, Jeongwon Yoo, Minjeong Byeon, Jongmin Lee, and Jihwan Lim(KINS)
- 11:40 Institutional Strength in Depth for Nuclear Safety
Chang Rae Kim, Su Jin Jung, and Young Sung Choi(KINS)

9C 원자력정책, 인력 및 협력 3 (Nuclear Policy, Human Resources and Cooperation 3)
5. 19 (금) | 좌장 김효정(Hyo-Jung Kim), 박병기(Byung Gi Park) | 발표장소 202A

초청발표

- 13:30 Touch on Valuing Investment with Uncertainty Focusing on R&D
M.K. LEE, S.S. KIM, and J.H. LEE(KAERI)
- 14:00 Results of 6th Review Meeting and Perspective of the 7th Review Meeting of the Convention on Nuclear Safety
Sukho Lee, Manwoong Kim, Jeoungwon You, and Youngeal Lee(KINS)
- 14:20 Leadership for Safety and Responsibility in Abnormal Situation
Chang Rae Kim, Myung Hyun Yoon, and Young Sung Choi(KINS)
- 14:40 A Study on Improving Korean Regulatory System on Decommissioning of Nuclear Power Plants
Chul Hoon Ham(HYU)
- 15:00 Coffee Break
- 15:20 Comparison Analysis of Nuclear Regulatory Body based on Characteristics of an Effective Nuclear Regulator
Minjeong Byeon, Youngeel Lee, Jeongwon Yoo, Jongmin Lee, and Jihwan Lim(KINS)
- 15:40 Establishment of Nuclear Safety Recored Management System and Informaiton Dsclosure
Byung hoo Yu, Gye hwi Lee, and Kil joong Kim(KINS)
- 16:00 Comparative Analysis on the Post-Fukushima Action Items of Key Countries
Jongmin Lee, Young Eal Lee, Minjeong Byeon, Jeongwon Yoo, and Jihwan Lim(KINS)
- 16:20 Mapping the Knowledge on Socio-nuclear Studies in Korea through Keyword Network Analysis
Youngjune Kim(KONICOF)

9D 원자력정책, 인력 및 협력 (Nuclear Policy, Human Resources and Cooperation) – POSTER
5. 18 (목) - 19 (금) | 좌장 이정현(Jung-Hyun Lee), 노승국(Seungkook Roh) | 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P09D01 Internal Regulation on the Training for the Nuclear Control in KAERI
Hyunsook Kim, Byungdoo Lee, Incheol Kim, Hyunjo Kim, Juang Jung, and Sungho Lee(KAERI)
- P09D02 A Study on the Development of Cooperation System for Nuclear Liability in North-East Asia
Jung Yoon Ham(BEES, Inc)

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- P09D03 **Effects of Safety Education on Nuclear Power Among Students in Korean Elementary, Middle, and High Schools According to Gender**
EUNOK HAN, SEUNGKOO LEE, and YOONSEOK CHOI(KANS)
- P09D04 **Development of On-line Reporting System for Nuclear Material**
Jung Hee SON, Chul HEO, and Seung Ho AHN(KINAC)
- P09D05 **Approach on Origin Management of Nuclear Materials at KAERI**
Hyun-Jo Kim, Sung-Ho Lee, Byung-Doo Lee, In-Chul Kim, Hyun-Sook Kim, and Juang Jung(KAERI)
- P09D06 **A Study on the Establishment of Additional Protocol System at KAERI**
Juang Jung, Sung-Ho Lee, Byung-Doo Lee, In-Chul Kim, Hyun-Sook Kim, and Hyun-Jo Kim(KAERI)
- P09D07 **Establishment of the Obligated Material Management Policy**
Seung Ho Ahn and Cheol Hue(KINAC)
- P09D08 **The Improvement of Small Quantity NM Management System at the ROK**
Seung Ho Ahn, Cheol Hue, and Seungmin Lee(KINAC)
- P09D09 **The Path Analysis Algorithm for a 2D Map Configuration of Physical Protection System**
Sung Soon Jang(KINAC)
- P09D10 **Comparative Analysis of Site-selection Process for Power Plants in Korea : Cases of Thermal, Nuclear, and Renewable Energies**
Myongsuk Kang, Ji Wong Yoon, Myounghoon Lee, Ho Cheol Choi, Chan-mi Chu, Jihye Park, and Hokyu Lee(KHU)
- P09D11 **Study on the Regulation Improvement of Domestic Cyclotron Decommissioning through the Questionnaires on the Current Cyclotron Operation Status**
Da-yeong Gwon and Yong-min Kim(CU), Nam-suk Jung and Hee-seock Lee(PAL), Kyu-young Jeong(CBNU)
- P09D12 **Research on Back-end Fuel Cycle in Japan**
YuJeong Choi and Sunyoung Chang(KINAC)
- P09D13 **Analysis of Koreans' Consciousness of 2016 by Using Wordcloud**
Seungkook Roh and Ik Jeong(KAERI), Dongwook Kim(KAIST), Hyunjin Kim and kibo sim(KONEPA)
- P09D14 **Trade-off Analysis of Nuclear Fuel Cycle**
Chul Min Kim and Man-Sung Yim(KAIST), Sung Ki Kim, Gwang-Rag Kim, Chung Seok Seo, Won Il Ko, Hong Jang, and Hyo On Nam(KAERI)
- P09D15 **A Review on Regulatory Enforcement Policy**
Jihan Lim, Kyung Joo Lee, and Young Sung Choi(KINS)

원자력계측제어, 인간공학 및 자동원격 (Nuclear I&C, Human Factors and Automatic Remote System)

10A

5. 18 (목)

원자력 계측제어, 인간공학 및 자동원격 A (Nuclear I&C, Human Factors and Automatic Remote Systems A)

I 좌장 허균영(Gyunyoung Heo), 황수연(Soo Yun Hwang)

I 발표장소 303A

초청발표

- | | |
|-------|--|
| 09:00 | Role and Opportunity of Nuclear I&C in the Fourth Industrial Revolution
Gyunyoung Heo(KHU), Hyeonmin Kim(KAERI) |
| 09:30 | Development of FPGA Application Program for Diverse Protection System
Soo Yun Hwang, Yoon Hee Lee, Se Do Sohn, and Jae Hee Yun(KEPCO E&C) |
| 10:00 | Improvement of Abnormal Phenomenon Attributable to Fallen Individual Control Rod for UAE BNPP Simulator
Sung Jin Ahn and Jong Beom Lee(KHNP CRI) |
| 10:20 | Analysis of SAMG Entry Condition Considering Operator Action Time in NPPs
Young Gyu No and Poong Hyun Seong(KAIST) |
| 10:40 | Coffee Break |
| 11:00 | The Field Test Methods for The Effect Analysis of Electromagnetic Pulse (EMP) in Operating Nuclear Power Plants
Songhae Ye, Hosun Ryu, and Minyi Kim(KHNP CRI) |
| 11:20 | A Study on Improvements and Harmfulness for the Auto Diagnostic Test of an Interposing Logic System in NPPs
Hyeongmin Jo and Mangyun Na(CSU) |
| 11:40 | Estimation of Residual Stress in a Dissimilar Metal Welding Zone Using CSVr
Young Do Koo, Kwae Hwan Yoo, and Man Gyun Na(CSU) |
| 12:00 | Design Principle for Advanced Nuclear MMIS
Yeonsub Jung(KHNP CRI) |
| 12:20 | A Development of Common Cause Failure Propagation Paths Identification Method Using Coloured Petri Nets
Ho Bin Yim, Jae Min Park, Chang Gyun Lee, Jae Young Huh, and Gyu Cheon Lee(KEPCO E&C) |

10B

5. 18 (목)

원자력 계측제어, 인간공학 및 자동원격 B (Nuclear I&C, Human Factors and Automatic Remote Systems B)

I 좌장 강성곤(Sung Kon Kang), 김사길(Sa Kil Kim)

I 발표장소 303B

초청발표

- | | |
|-------|---|
| 09:00 | Study on the Application Method of Display Sharing System for the APR1400 Digital Main Control Room
Sung Kon Kang, Ki Hwan Kim, and Yeon Sub Jung(KHNP CRI) |
| 09:30 | Empirical Study on Shared Situation Awareness among Operators in Case of Using an Active Group-view Display in Digitalized Control Room of Nuclear Power Plants
Sa Kil Kim, Joo Hyun Sim, Tong Il Jang, and Hyun Chul Lee(KAERI) |

- 10:00 Development of Human-level Decision Making Algorithm for NPPs through Deep Neural Networks : Conceptual Approach
Seung Geun Kim and Poong Hyun Seong(KAIST)
- 10:20 Alternative to Online Hardcopy of Computerized Procedure System
Nokyu Seong and Yeonsub Jung(KHNP CRI)
- 10:40 Coffee Break
- 11:00 HFE V&V Results of Computerized Procedure System for APR+
Yongsoo Kim and Yeonsub Jung(KHNP CRI)
- 11:20 An Operator's Conventional Behaviors Related to Unsafe Acts from Simulator Training Record Analysis
Sun Yeong Choi(KAERI)
- 11:40 Review on Situation Awareness Experiments in the Nuclear Power Plant
Eung-Se Oh and Yun-Goo Kim(KHNP CRI)
- 12:00 Operator Response Time Analysis Method for Important Human Actions
Yun Goo Kim and Eung-se Oh(KHNP CRI)
- 12:20 Analysis of Unexpected Reactor Trips from the Perspectives of Safety I and Safety II
Jooyoung Park and Jonghyun Kim(CSU), Jitae Kim(KINS)

10C
5. 19 (금)

**원자력 계측제어, 인간공학 및 자동원격 C
(Nuclear I&C, Human Factors and Automatic Remote Systems C)**

| 좌장 이현철(Hyun-Chul Lee), 이성욱(Sung-Uk Lee)

| 발표장소 303A

초청발표

- 09:00 Human Factor Design Requirements for the Emergency Headquarter in the Nuclear Facility
Hyun-Chul Lee(KAERI)
- 09:30 Development of an Experimental Measurement System for Human Error Characteristics and a Pilot Test
Tong-II Jang and Hyun-Chul Lee(KAERI), Kwangsu Moon(CAU)
- 10:00 Linguistic Formalism for Semi-Autonomous Reactor Operation
Sungmoon Joo, Sang Mun Seo, Yong-Suk Suh, and Cheol Park(KAERI)
- 10:20 A Technique of Software Safety Analysis in the Design Phase for PLC Based Safety-Critical Systems
Seo Ryong Koo and Chang Hwoi Kim(KAERI)
- 10:40 Coffee Break
- 11:00 An Intuitive Robot Teleoperation System for Nuclear Power Plant Decommission
Chang-hyuk Lee(KERI), Taehyeong Gu and Sung-Joon Ye(SNU), Kyung-min Lee(YNU), Young-bong Bang(AICT)
- 11:20 An Aerial and Ground Monitoring System for Nuclear Accidents
Jongwon Park and Young-Soo Choi(KAERI)
- 11:40 Control of a Decommissioning Hydraulic Manipulator Using Time Delay Control
Myoung-Ho Kim, Sung-Uk Lee, Chang-Hoi Kim, and Jong-Hwan Lee(KAERI)
- 12:00 Accident Classification and Clustering Using RSM in NPPs
Moath Kassim and Gyunyoung Heo(KHU)
- 12:20 Prediction of Transient Scenarios Using AI After Severe Accident Occurrence
Kwae Hwan Yoo, Ju Hyun Back, and Man Gyun Na(CSU)

10D
5. 19 (금)

**원자력 계측제어, 인간공학 및 자동원격 D
(Nuclear I&C, Human Factors and Automatic Remote Systems D)**

| 좌장 김만철(Man Cheol Kim), 허섭(Seop Hur)

| 발표장소 303B

초청발표

- 09:00 Review of Technical Issues in Reliability Analysis of Digital Instrumentation and Control Systems in Nuclear Power Plants
Man Cheol Kim, Seung Hoon Chae, and Jae Seon Ha(CAU)
- 09:30 Development of Cyber-Attack Risk Assessment Model for Nuclear Power Plants
Jong Woo Park and Seung Jun Lee(UNIST)
- 10:00 Development of a Big Data Framework for Operation Support of Nuclear Power Plants
Moon-Ghu Park(Sejong Univ.), Seong-Ki Kang(M&D), Jangbom Chai(AJOU), Ji-Hun Kim(dUpHeare.ai Korea)
- 10:20 Study for Prognostics of Primary Side Pipe in Nuclear Power Plants
Hyeonmin Kim and Jung-Taek Kim(KAERI), Gyunyoung Heo(KHU)
- 10:40 Coffee Break
- 11:00 An Optimal Core Cooling Path Serching Methodology for Eary Human Action During Severe Accidents
Seop Hur, Hyeon-Min Kim, Jae-Hwan Kim, and Chang-Hwoi Kim(KAERI)
- 11:20 Development of a Quantitative Method for Evaluating the Efficacy of Cyber Security Controls in NPPs Based on Intrusion Tolerant Concept
Chanyoung Lee and Poong Hyun Seong(KAIST)
- 11:40 Setting Component Priorities in Protecting NPPs Against Cyber-Attacks Using Reliability Analysis Techniques
Moon Kyoung Choi and Poong Hyun Seong(KAIST), Han Seong Son(Joongbu Univ.)
- 12:00 Study on the Mechanisms of Cyber Security Exercise for the Nuclear Facilities
Hyundoo Kim(KINAC)

10E
5. 18 (목)
- 19 (금)

**원자력 계측제어, 인간공학 및 자동원격
(Nuclear I&C, Human Factors and Automatic Remote Systems) – POSTER**

| 좌장 김종현(Jong Hyun Kim), 김성태(Seong Tae Kim)

| 발표장소 3층 로비

| 게시시간 5월 18일(목) 13:00 ~ 18:00 / 5월 19일(금) 09:00 ~ 17:00

| 저자 발표시간 5월 18일(목) 13:00 ~ 15:00

- P10E01 Development of Open Test-Bed for Autonomous Operation in Nuclear Power Plants
Seungmin Kim and Gyunyoung Heo(KHU)
- P10E02 Equipment Qualification of Long-Lived Self Powered Neutron Detector
Yu Sun Choi and Sang Bae Moon(KHNP CRI)
- P10E03 Application Study for Implementing IEEE 1012-2016
Jin-Ku Kim, Jin-Beom Woo, Se-Jun Kim, Hyun-Woo Kim, You-Sung Ro, Jong-Jae Choi, and Jae-Hyuk Park(KEPCO E&C)
- P10E04 Integrated Toolkit for Accelerator Operation Management of KOMAC Facility
Jae-Ha Kim, Young-Gi Song, Hyeok-Jung Kwon, and Yong-Sub Cho(KAERI)
- P10E05 A Monitoring and Controller Display Method for Each Operation Mode Based on Log Analyses of Operator Actions
Gwi-sook Jang, Seung-min Lee, and Gee-yong Park(KAERI)

-
- P10E06 **A Method of Preventing MMI Display Design Errors**
Jaeseung Kim, Kyeongmin Kim, and Chanho Sung(KHNP CRI)
- P10E07 **Software V&V for the SDLC of the HANARO Control Computer**
Min Woo Lee, Yun Taek Yim, Seung Kyoo Doo, Yeong San Choi, Hyung Kyoo Kim, and Sung Hyo Lee(KAERI)
- P10E08 **Design Study of Control System for Radiation Therapy System Based on 6 MeV X-band LINAC**
Sehee Kim, Jaehyun Kim, Moonsik Chae, Byeongno Lee, Kyeongmin Oh, Jinsik Ju, Sangjoon Park, Hansoo Kim, and Kyeongmin Jeong(KAERI), Soomin Lee(HYU)
- P10E09 **A Condition Monitoring Technique of a Cooling Tower Fan Using CW Radar**
Yun-Taek Im, Jung-Sik Hwang, Seung-Gyu Doo, Min-Su Kim, Jin-Won Shin, Ki-Hyun Kim, Jung-Hee Lee, Hyung-Kyoo Kim, and Young-San Choi(KAERI)
- P10E10 **Fault Detection and Diagnosis of Nuclear Power Plant Using Deep Learning Architecture**
Ibrahim Ahmed, Gyunyoung Heo, and Moath Kassim(KHU)
- P10E11 **Artificial Intelligence and Its Reasonable Application Scenario to Reactor Operation**
Ki Hong Im, Yong-Suk Suh, Cheol Park, and In-Cheol Lim(KAERI)
- P10E12 **Research on Applicability of Positioning System for Access Control in NPP**
Hyunki Kim and Chul Woong Son(KHNP CRI)
- P10E13 **Development of a Fiber-Optic Humidity Sensor for the Online Monitoring of Coolant Leakage**
Hye Jin Kim, Young Beom Song, Mingeon Kim, and Bongsoo Lee(CAU), Sang Hun Shin, Wook Jae Yoo, and Kyoung Won Jang(Konkuk Univ.)
- P10E14 **A Practice of Secure Development and Operational Environment Plan**
Jaekwan Park, Sangmun Seo, Yongsuk Suh, and Cheol Park(KAERI)
- P10E15 **Unit Test for the Change of CCW Pump Control Logics**
Chanho Sung and Yeonsub Jung(KHNP CRI)
- P10E16 **Evaluation of Load Rejection Test of SKN 3 using KISPAC System Analysis**
Eung Seo Kim, Ju Han Lee, In Ho Song, and Gyu Cheon Lee(KEPCO E&C)
- P10E17 **A Lumped Response Time Test Methodology for the Digital Plant Protection System**
Chang Jae Lee and Jae Hee Yun(KEPCO E&C)
- P10E18 **Electrostatic Interference of Ruptured Coaxial Cable with Multiple Dielectrics**
Jaeyul Choo, Hyun Shin Park, and Youngsik Cho(KINS)
- P10E19 **Development of Communication System for Nuclear Safety Data Network**
Myeong-kyun Lee, Kwan-Woo Yoo, Gangmin Park, and Dong-Hwa Yun(SOOSAN ENS)
- P10E20 **Functional Requirements Analysis/Functional Allocation Based on EUR for EU-APR**
Sun Mi Choi(KHNP CRI), Jin Koo Kim(KEPCO E&C)
- P10E21 **Feedback Power Control for TRIGA-II Research Reactor**
Dae In Bang, Yongsuk Suh, and Cheol Park(KAERI)

A

학생/청년 Competition Session

5. 19 (금)

| 좌장 김종범(Jong Bum Kim), 문명국(Myung Kook Moon)

| 발표장소 303A

- 13:30 X-ray Pump–Fluorescence Imaging of Reactive Oxygen Species for Track Analysis of Synchrotron X-ray Photoelectric Nanoradiator Dose
Jae-Kun Jeon and Jong-Ki Kim(CU)
- 13:50 Dose Enhancements and Cellular S-values of Nanoparticle-enhanced Auger Therapy
Wonmo Sung, Seongmoon Jung, and Sung-Joon Ye(SNU)
- 14:10 Monte Carlo Simulations of Target and Moderator for Accelerator-based Boron Neutron Capture Therapy
Sangmin Lee, Justin Malimban, and Sung-Joon Ye(SNU)
- 14:30 Design and Fabrication of Rotational Modulation Collimator (RMC) System for Gamma-Ray/Neutron Dual-Particle Imager
Hyun Suk Kim and Sung-Joon Ye(SNU), Geehyun Kim(Sejong Univ.)
- 14:50 Analytical dose Estimation in Dental Cone-beam CT
Bitbyeol Kim, Jinwoo Kim, and Ho Kyung Kim(PNU)
- 15:10 Coffee Break
- 15:30 Application of Deep Neural Networks for Bone-suppressed Digital Radiography
Eunpyeong Park, Junbeom Park, and Ho Kyung Kim(PNU)
- 15:50 Optical Analysis of a CdWO₄-photodiode Linear Array for X-ray Container Inspection System
Jiwoong Park, Junwoo Kim, and Ho Kyung Kim(PNU)
- 16:10 Effects of Irradiation Dose and Post-irradiation Annealing Temperature on Minority Carrier Lifetime of Proton-Irradiated P-type Silicon
Gihyun Kwon and Chansun Shin(MJU), Gwang-Min Sun(KAERI)

B

학생/청년 Competition Session

5. 19 (금)

| 좌장 반치범(Chi Bum Barn), 조형규(Hyoung Kyu Cho)

| 발표장소 303B

- 13:30 Application of Ceramic Plasma-spray Coatings for Melting Crucible of Metallic Fuel
Ki Won Hong and Sun Ig Hong(CNU), Ki Hwan Kim(KAERI)
- 13:50 Characterization of U-10Zr-RE Heel Residue for Recycling of Metallic Fuel Scraps
SeongJun Ha and Sunlg Hong(CNU), KiHwan Kim(KAERI)
- 14:10 A New Compound of Zr-O-N System Identified by Raman Investigation
Sanggil Park(ACT Co., Ltd.)
- 14:30 An Experiment on Measuring Void Fraction using Impedance Meter in 3×3 Rod Bundle Consisting of Metal Filter
Jong-wook Lee and Jae-young Lee(HGU), Jong-rok Kim(KAERI)
- 14:50 Natural Convection Heat Transfer of the Oxide Layer Varying the Aspect Ratios for a Three-layer Configuration
Su-Hyeon Kim and Bum-Jin Chung(KHU)
- 15:10 Coffee Break

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- 15:30 Effect of Explosive Region Modeling on Steam Explosion Analyses by TNT Model
SeungHyun Kim and Yoon-Suk Chang(KHU), Yong-Jin Cho(KINS)
 - 15:50 Study of Self-passivation Tungsten Alloys for Plasma Facing Materials
Seung Su Kim and Ho Jin Ryu(KAIST)
-

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5. 19(금)

학생/청년 Competition Session

| 좌장 박지성(Ji Sung Park), 박창제(Chang Je Park)

| 발표장소 400

- 13:30 Physics Study on Photoproduction of Tc-99m using NRF Phenomenon
Jiyoung Lee, Haseeb ur Rehman, and Yonghee Kim(KAIST)
- 13:50 Recycling Study of PWR Spent Fuel TRU in the PWR Fuel Assembly
Ye Seul Cho, Dae Hee Hwang, and Ser Gi Hong(KHU)
- 14:10 Uncertainty in Determination of the Pu-to-244Cm-ratio in Pyroprocess
Seung Min Woo, Massimiliano Fratoni, and Joonhong Ahn(UC Berkeley)
- 14:30 An Assessment of Air Sampling Location for Airborne Radioactive Effluent Monitoring in Nuclear Facility using CFD
JungBok Lee(UST), TaeHyung Kim and BongHwan Kim(KAERI)
- 14:50 Comparison of MCNP6.1 with PENELOPE2014 for Electron dose Calculations at very Low Energies
Seongmoon Jung, Wonmo Sung, and Sung-Joon Ye(SNU)
- 15:10 Coffee Break
- 15:30 Analysis of the APR1400 PWR Initial Core with the nTRACER Direct Whole Core Calculation Code and the McCARD Monte Carlo Code
Hyunsik Hong and Han Gyu Joo(SNU)
- 15:50 Experimental Evaluation of Heat Loss Characteristics in Thermally-insulated Piping System of a Sodium Test Facility
Joonki Kim, Hyungmo Kim, and Ji-Young Jung(KAERI)

번호	일시 5월 18일(목) 13:00~18:00	발표장소 3층 300
1	Study of n- γ Separation Property Using Stilbene and Liquid Scintillator Jaeyeong Jang, Taehoon Kim, Dong Geon Kim, Joonbum Choi, and Yong Kyun Kim(HYU)	
2	Development of Review Technology for Fault Trees in Probabilistic Safety Assessment of Nuclear Power Plants EunSeo So and Man Cheol Kim(CAU)	
3	A Study on the Automatized Quantitative Assessment Method for Phantom Image Evaluation of the Mammography Jae Hyun Ahn and Ho Chul Kim(EJU)	
4	Comparative Analysis According to Acquisition Type by Using the Resolution Phantom for Mammography Equipment Jae-Hyun Kim, Kyung-Rae Dong, and Youn-Sang Ji(GHU)	
5	An Analysis of the Perception of the Acceptance of Nuclear Energy as a Solution for Climate Change Ha Man-Jin and Kang se-sik(Catholic Univ.)	
6	Radioiodine (I-131) Thyroid Gland Uptake Measurement Kim Chang-beom and Kim Chang-soo(Catholic Univ.)	
7	A Study on Effects of Calcium Drug on Bone Mineral Density (BMD) Do-ui Lee, Kyung-Rae Dong, and Il-Bong Moon(GHU)	
8	Study on Evaluation of Exposure dose with Various Patient Variables in Diagnostic CT Scan Jong Woon Park, In Sung Back, and Youngjin Lee(EJU)	
9	Development of Image Acquisition Technologies of 4D Digital Tomosynthesis for High-precision Image-guided Radiation Therapy Burnyoung Kim, Sooncheol Kang, Jisoo Eom, and Seungwan Lee(KYU)	
10	Numerical Simulation of Heat Transfer in Film Boiling by ANSYS Yong Hee Lee and Sooseok Choi(JNU)	
11	3D Volume Optical Dosimetry Using Plastic Scintillator JongHwa Kim and Sin Choi(CJU)	
12	Development of DOI Compton Camera System Module Based on dSiPMs Jun Young Lee, Jae Hyeon Kim, Young-su Kim, and Chan Hyeong Kim(HYU)	
13	Assessment of the Usefulness of 3D-printed Phantoms in Evaluating SPECT Performance Youngju Lee and Soonmu Kwon(DHC)	
14	Optimization of the Light Guide of the Scintillation Detectors for Personal Monitoring H. K. Baek , H. M. Park, and K. S. Joo(MJU)	
15	Assessment of dose and Image Quality of Simple Abdomen AP Projection According to the Exposure Time Limitation in Automatic Exposure Control(AEC) System Dae-Jin Yu, Soon-Yong Son, and Ki-Won Kim(WHSU)	
16	Analysis of Airborne Particulate Size Distribution and Concentration at Potassium Industry Woo Jin Kim, Seung Woo Ji, Jung Hwan Jang, and Kwang Pyo Kim(KHU)	
17	Development of Optical Fiber Probe Method for Measurement of Local Bubble Parameters Seong-Hui Park and ByongJo Yun(PNU)	
18	Investigation of the Effects of Scatter in Radiography Image Quality Yein Park(DSU)	

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- 19 **A Study about the Usefulness of Bismuth Shield by Changing Field of View on Dental CBCT**
Kim Taesung and Jung Hongryang(HSU)
 - 20 **Study on Dose Calculation Using Optical Stimulated Luminescence Dosimeters in High-energy Radiation**
Lee Younghoon and Lim Cheonghwan(HSU)
 - 21 **Assessment of Radiation Dose for Transportation of Decontamination Wastes after Fukushima Nuclear Power Plant Accident**
Jin O Lee, Min Jun Kim, A Ra Go, and Kwang Pyo Kim(KHU)
 - 22 **Investigation on Creep-rupture of Pressurizer Surge Line with Stratified Hot-leg Flow During SBO Scenario Using MELCOR Code**
Ji Hwan Cha, Nam Kyung Kim, Joongoo Jeon, Wonjun Choi, and Sung Joong Kim(HYU)
 - 23 **Thermal Analysis Method for Nuclear Spent Fuel Repository Site Under Predicted Condition**
Nakkue Chae(UNIST)
 - 24 **Effect of Surface Wettability and Roughness on Pool Boiling Heat Transfer of Cr-layered Vertical Tube.**
Yun Sik Cho, Hong Hyun Son, and Sung Joong Kim(HYU)
 - 25 **Improvement of Novel InI Semiconductor RT Radiation Detector**
So-Hee Leem, Suk-Jin Hang, Hwan-Seung Yu, and Kihyun Kim(KRU)
 - 26 **Safety Study on Spent Nuclear Fuel Dry Storage System from PSA Viewpoint**
Yujeong Hwang, Kyungho Jin, and Gyunyoung Heo(KHU)
 - 27 **Inconel Electrodeposited Copper Nanowires Heat Transfer Rate Comparative Study for Improved Efficiency of Heat Transfer**
Min-Seok Kim and Heon-Ju Lee(JNU)
 - 28 **Analysis of Tissue Dose Bolus Tracking System of Human Error in CT Scanning**
Ha Young Lee and Dae Cheol Kweon(SHU)
 - 29 **3-Dimensional Design Study of Practical Octupole Magnet for Uniform Beam Distribution**
Do Kil Woo(DGU)
 - 30 **Study of NIR Computed Tomography Algorithm for Necrotic Lesions in Diabetes**
Cheol-Won Shin(DSU)
 - 31 **Development of The Accurate Skin-Dose Evaluation Technique Based on a Monte Carlo Method in Radiation Therapy**
Bo Wee Cheon, Do Hyeon Yoo, and Chul Hee Min(YSU)
 - 32 **CFD Analysis with Measured Wall Temperature Distribution for Natural Convection Heat Transfer in a Narrow Rectangular Riser Duct**
Seong-Jeong Jeong and Hyoung Kyu Cho(SNU)
 - 33 **Comparison of Detection Efficiency with Modified PVT in Geant4 Study**
Bon Tack Koo, Hyun Cheol Lee, Wook-Geun Shin, Hyun Joon Choi, Hyo Jun Park, and Chul Hee Min(YSU)
 - 34 **Assessment of Indoor Radon Gas Concentration Change of College**
Hak-Jae Kim(SGC)
 - 35 **Study on Accuracy Measurement of Z- axis X-ray Beam Collimation in CT Equipment**
Kang Ji Yoon(WHSU)
 - 36 **Production of Personalized Shield by 3D Printer Using HDPE and Its Application Possibility**
Chang-won Lee and Dong-kyoon Han(EJU)
 - 37 **Measuring Changes in the Resolution of the Picture Tube Voltage Changes in Medical X-ray Equipment**
Junghun Choi and Hwayeon yeo(NBU)
 - 38 **Pin-by-pin Core Calculation with SPH Factor for Improving Accuracy of Pinwise Calculation**
Seongpil Yum, Jiwon Choe, Sooyoung Choi, and Deokjung Lee(UNIST)
 - 39 **Physical Investigation for the Suppression of Thermal Shock Fracture of Fuel Rod Cladding During Reflood Quenching of Severe Accidents**
SeungHwan Oh(KAIST)

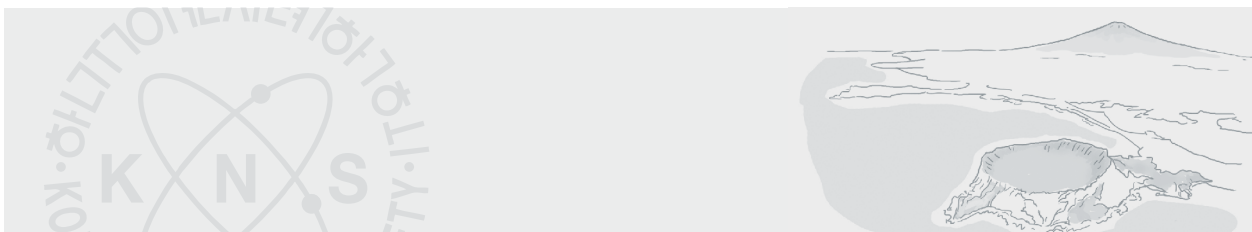
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- 40 A study on Radon Reduction Study Using Charcoal Paint
S.B. Kang and J.K. Park(IUK)
- 41 Carbon Materials Modification Using Electron Beam Irradiation
Jinho Choi and Dong Hyuk Park(IHU)
- 42 PIV Investigation on the Natural Convective Flow Inside 8 × 8 Spent Fuel Assembly
Doyoung Shin, Uiju Jeong and Sung Joong Kim(HYU)
- 43 Quantitative Material Decomposition in Dual Energy Digital Breast Tomosynthesis
Donghoon Lee and Hee-Joung Kim(YSU)
- 44 Performance Estimation of an Inner-crystal Neutron-scatter Camera Using Energy-weighted Image Reconstruction Methods
Ajin Jo and Wonho Lee(KRU)
- 45 Independent Component Analysis Based Signal Classification Technique Using Dynamic Positron Emission Tomography Image
DoYeong Pyeon(DSU)
- 46 Evaluation of NUREG/CR-6361 and NUREG/CR-6698 Methodologies of PWR Spent Fuel Pool and Storage Cask
Sanggeol Jeong, Jaerim Jang, Wonkyeong Kim, Azamat Khassenov and Deokjung Lee(UNIST)
- 47 1 Inch Single Crystal Growth and Evaluation of Ce-doped GAGG Scintillator
Yongseok Lee and Jung Yeol Yeom(KRU)
- 48 Preliminary Epithermal Reactor Design Through Epithermal Neutron Spectrum
Hong Yeop Choi and Chang Je Park(SJU)
- 49 Study on Evaluation Method for Reliability of Radioisotope Thermoelectric Generator (RTG) Materials
Inyoung Song and Ji Hyun Kim(UNIST)
- 50 Thermo-hydraulic Simulation of a Printed Circuit Heat Exchanger
Daehun Lee and Jaesool Shim(YNU)

연구부회/지부 활동 및 계획 발표회

| 시상식 2017년 5월 19일(금) 13:30 ~ 15:30

| 장 소 300호

시간계획	구분	발표자
13:30 ~ 13:35(05')	인사말	임채영 총무이사(사회)
13:35 ~ 13:45(10')	원자로물리 및 계산과학 연구부회	주한규 연구부회장
13:45 ~ 13:55(10')	방사성폐기물관리 연구부회	연제원 연구부회장
13:55 ~ 14:05(10')	양자공학 및 핵융합기술 연구부회	오병훈 연구부회장
14:05 ~ 14:20(15')	휴 식	
14:20 ~ 14:30(10')	원전건설 및 운영기술 연구부회	박영섭 연구부회장
14:30 ~ 14:40(10')	원자력정책, 인력 및 협력 연구부회	김현준 연구부회장
14:40 ~ 14:50(10')	부산/울산/경남 지부	김창락 지부장
14:50 ~ 15:00(10')	학생지부	김형대 지도교수
15:00 ~ 15:30(30')	마무리	



교통편

| 제주 국제컨벤션센터 | 서귀포시 중문관광로 224 Tel. 064-735-1000



🚌 공항리무진 버스 (600번 제주공항 ↔ 중문관광단지)

운행표	공항 → 제주더호텔 → 여미지식물원입구 → 하얏트호텔 → 신라호텔 → 롯데호텔 → 한국콘도 → ICC JEJU
제주국제공항 출발 (06:20 ~ 22:00)	1층 5번 게이트 왼쪽 리무진 버스 승차장 (삼영교통 600번)
ICC JEJU	정문 국기게양대 20m지나 로터리 정류장에 정차 (600번 제주공항 ↔ 서귀포)
이용요금	공항에서 ICC JEJU까지 편도(성인) 4,500원 매 18~20분 간격 ICC JEJU까지 소요시간 50분

🚖 택시안내 (제주공항 ↔ 중문)

승차지점	이용요금	소요시간
장거리 택시 승차장에서 출발	약 3만원 (거리 약 40km)	약 40~45분

🚗 렌터카 이용시 (제주공항 → ICC JEJU)

경로	소요시간	이용노선
1코스 (1135번 도로 평화로)	차량 50분 소요 리무진 60분 소요	공항 → 신제주 → 제주경마장 → 평화로 → 중문관광단지 → ICC JEJU
2코스 (1139번 도로 1100도로)	차량 45분 소요 (초행길, 눈길, 안개조심)	공항 → 신제주 → 한라수목원 → 신비의 도로 → 어리목 → 탐라대학교 → ICC JEJU
3코스 (1131번 도로 516도로)	차량 1시간 10분 소요 (초행길, 눈길, 안개조심)	공항 → 삼성혈 → 제주대학교 → 성판악 → 돈내코유원지 → 16번도로 → 중문관광단지 → ICC JEJU



SMiRT-24

(24th International conference of Structural Mechanics
in Reactor Technology)

August 20~25, 2017

BEXCO/Centum Hotel, Busan, Korea

Hosted by KNS and KPVP

(KNS : Korean Nuclear Society)

(KPVP : Korean Society of Pressure Vessels and Piping)



Invitation to SMiRT-24

Dear Colleagues,

The Structural Mechanics in Reactor Technology (SMiRT) conference is the outstanding international conference for participants to further their capabilities by being exposed to diverse presentations, exchange ideas related to structural mechanics in reactor technology. SMiRT attracts approximately more than 600 attendees with over 500 technical presentations. To continue the high impact growth of this structural integrity area and lead it into the future nuclear safety, the purpose of this conference is to assemble world experts across scientific and engineering disciplines to actively discuss the latest topics under the slogan of "NUCLEAR ENERGY FOR SUSTAINABLE FUTURE." The 24th International Conference on SMiRT will be held August 20~25, 2017 in Busan which is the second largest city in Korea with several beautiful beaches. This conference include plenary lectures, outstanding presentations in each division, young engineers activities, conference banquet, several networking opportunities and technical tours.

We look forward sincerely to welcoming you to BEXCO, Busan Korea in August 2017!

PARK Goon-Cherl, Professor
Conference Chair of SMiRT-24
Seoul National University

Paper Submission and Registration

- ▶ **Deadline for full papers : May 31, 2017**
- ▶ **Registration starts from March 15, 2017.**
- ▶ **Early bird registration ends May 31, 2017.**
- ▶ **SMiRT-24 at BEXCO/Busan August 20~25, 2017**
- ▶ **Contact point : smirt24@smirt24.org**

(Korea Tourism Organization supports this program.)

For more details about Busan:

Busan Tourism Organization (<http://bto.or.kr>),

Busan City Hall (www.busan.go.kr)

TOPIC

Following the Conference topics include but are not limited to :

1. Mechanics of Materials
2. Fracture Mechanics and Structural Integrity
3. Applied Computation, Simulation and Animation
4. Characterization of Loads
5. Modelling, Testing and Response Analysis of Structures, Systems and Components
6. Design and Construction Issues
7. Safety, Reliability, Risk and Margins
8. Issues Related to Operations, Inspection and Maintenance
9. Fuel Cycle Facilities, Waste management and Decommissioning
10. Challenges of New Reactors





빛이 닿지 않는 곳을 우리의 기술로 채워갑니다

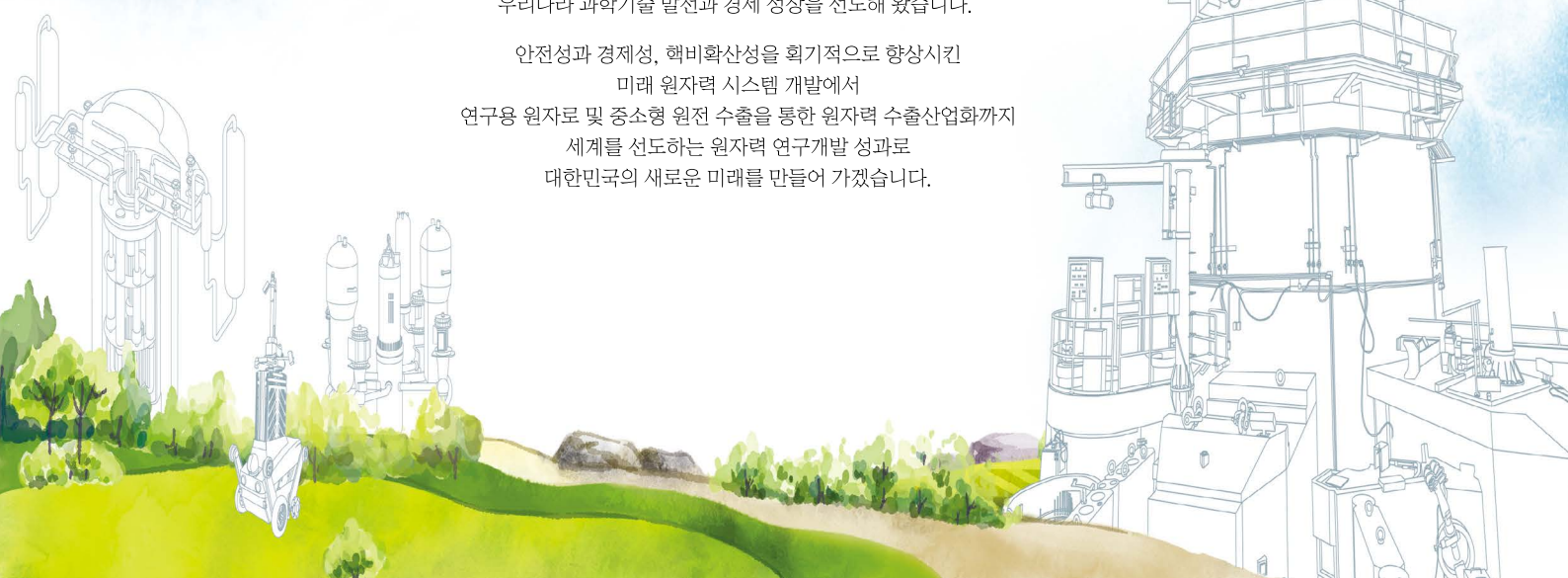
지구의 가치를 높이는 기술 두산중공업



Nuclear R&D Global Leader

한국원자력연구원은 1959년 설립 이래 지난 반세기 동안 한국표준형원전 개발, 핵연료 국산화, 연구용 원자로 자력 설계 건조, 사상 첫 원자력 시스템 일괄 수출 등 빛나는 이정표를 남기며 우리나라 과학기술 발전과 경제 성장을 선도해 왔습니다.

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www.kns.org

KNS 2017 Spring 춘계학술발표회

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