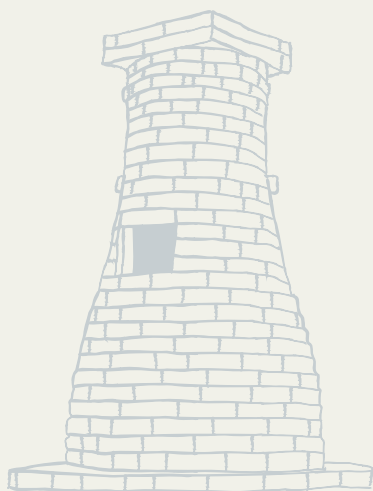


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KNS 2015 Fall 추계학술발표회

KOREAN NUCLEAR SOCIETY

2015.10.28(수)~30(금)
호텔현대 경주



사단
법인 한국원자력학회
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[한국원자력학회 특별회원 및 국제학술회의 광고]

학회장 인사말



성풍현 학회장

안녕하십니까? 학회장 성풍현입니다.

주위에 낙엽이 지는 아름다운 늦가을에 한국원자력학회 추계학술발표회를 옛 신라의 수도 경주에서 갖게 되었고 많은 분들이 참가하시게 되어서 참으로 기쁘게 생각합니다. 부디 이 모임을 통하여 그동안 피곤했던 심신이 쉬고 새로운 힘으로 충전되는 시간을 갖게 되기를 바랍니다.

이번부터 학술발표대회가 약간의 변화를 갖게 될 예정입니다.

그 변화의 기본 철학은 다음 세 가지입니다.

- 1) 한국원자력학회의 일년에 두 번 있는 학술대회를 원자력인의 축제로 만들자
- 2) 학술대회인 만큼 학술발표내용의 질도 높이고 학술발표에의 참여도도 높이자
- 3) 학술발표대회의 핵심 준비주체인 연구부회와 지부들의 조직과 활동을 좀 더 체계화하자

먼저 우리 한국원자력학회의 학술대회를 원자력인의 축제로 만들자는 내용은 학술대회에 참석하는 모든 분들이 이 모임 때문에 즐겁고 기쁘기를 바란다는 말입니다. 오랫동안 만나지 못 했던 분들을 만나서 근황도 알게 되고 다른 사람들의 학술발표 내용을 들으면서 무슨 새롭고 흥미로운 일이 있었나 알게 되고 만찬 시에는 흥겨운 시간을 같이 갖도록 하자는 것입니다.

둘째 학술발표에 관한 이야기입니다. 우리가 간과해서는 안 될 것은 학술발표도 축제의 일부라는 것입니다. 그래서 학술발표의 내용도 알차고 흥미로워서 듣는 사람들로 하여금 참석의 보람을 느끼게 해 주어야 한다는 것입니다. 이를 위해 우선 우리 학술발표 마치는 시간을 금요일 점심때에서 저녁으로 늦추었습니다. 그리고 그 동안은 투고해서 통과 된 논문만 발표했던 학술구두발표를 각 기관의 중진들을 초청해서 발표하게 하는 초청구두발표도 포함하게 하였습니다. 그리고 포스터 논문 게재 시간도 목요일 오후부터 금요일 마칠 때까지로 연장했습니다.

만찬 시간에 관한 이야기입니다. 만찬시간도 이제부터는 미리 프로그램을 미리 만들어 진행하고 회원의 특별한 장기를 선 보일 수 있는 시간을 별도로 갖도록 할 예정입니다. 구두 발표와 포스터 논문 게재 마치는 시간이 금요일 저녁식사시간으로 늦추어졌기 때문에 우수 포스터시상과 마지막 경품추천시간은 금요일 저녁시간으로 옮겨집니다.

마지막으로 연구부회와 지부들의 조직과 활동을 좀 더 체계화하는 세번째 기본 철학에 관한 문제입니다. 우리 연구부회가 시작된 게 약 15년쯤 되었고 지부들이 만들어진 것은 불과 4년 전인 것 같습니다. 그 동안 연구부회/지부의 꾸준한 발전이 있었지만 좀 더 체계화하고 정비가 되어야 할 부분들이 아직 여럿 있다고 생각되어 연구부회장/지부장들의 공식적인 활동 실적/계획의 발표를 학회 기간 중에 하도록 하였고 이는 금요일 오후에 시행될 예정입니다. 조직의 목적과 임무와 회원을 정리하고 활동 등을 점검할 기회가 될 것으로 기대하고 이 일을 시도하는 것입니다.

이번에 처음 시도하는 일들이 여럿 있어서 처음에는 불편하게 생각하는 분도 있겠지만 부디 이 모임을 마친 뒤 많은 분이 긍정적인 변화였다고 생각하게 되기를 진심으로 바랍니다. 즐겁고 보람찬 시간 가지시기를 바랍니다.

감사합니다.

2015년 10월

성 풍 현 학회장

전체행사 일정표

10월 28일(수)										10월 29일(목)										10월 30일(금)									
등록 (12:30 ~ 17:30)										등록 (08:00 ~ 17:30)										등록 (08:00 ~ 17:30)									
09:00 - 10:00	10:00 - 11:00	11:00 - 12:00	12:00 - 13:00	13:00 - 14:00	14:00 - 15:00	15:00 - 16:00	16:00 - 17:00	17:00 - 18:00	18:00 - 19:00	09:00 - 10:00	10:00 - 11:00	11:00 - 12:00	12:00 - 13:00	13:00 - 14:00	14:00 - 15:00	15:00 - 16:00	16:00 - 17:00	17:00 - 18:00	18:00 - 19:00	09:00 - 10:00	10:00 - 11:00	11:00 - 12:00	12:00 - 13:00	13:00 - 14:00	14:00 - 15:00	15:00 - 16:00	16:00 - 17:00	17:00 - 18:00	18:00 - 19:00
										[5A] 원자력영수령 및 안전 구두발표										[5E] 원자력영수령 및 안전 구두발표									
다이내스티 B2																													
팔레스 B2																													
칸베시아 B1																													
칸베시아B B1																													
칸베시아C B1																													
다이아몬드 B1																													
크리스탈 B1																													
제이드 B1																													
금강 B1																													
에메랄드 2F																													
루비 2F																													
사파이어 2F																													
오팔 2F																													
제니퍼 2F																													
메이플 2F																													
마호가니 2F																													
보론 2F																													
남경 2F																													
시라 1F																													

학술발표회 회의장 배치도

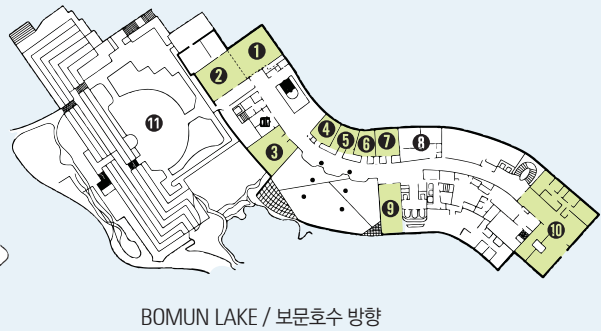
1F

- ① 베이커리 '더샵'
- ② 로비라운지
- ③ 커피숍 '사라'
- ④ 프론트 데스크
- ⑤ 비즈니스 센터
- ⑥ 뷔페식당 '토파즈'



2F

- ① 에메랄드 홀
- ② 루비 홀
- ③ 사파이어 홀
- ④ 오팔 홀
- ⑤ 제니퍼 홀
- ⑥ 메이플 홀
- ⑦ 마호가니 홀
- ⑧ 아델리아
- ⑨ 중 · 일식당 '남경'
- ⑩ 보문 홀
- ⑪ 루프 가든



B1F

- ① 컨벤션 홀
- ② 다이아몬드 홀
- ③ 크리스탈 홀
- ④ 제이드 홀
- ⑤ 노블레스
- ⑥ 금강 홀
- ⑦ 주차장



B2F

- ① 다이내스티 홀
- ② 팔래스 홀
- ③ 신부대기실
- ④ 가화루
- ⑤ 웨딩샵
- ⑥ 의무실
- ⑦ 주차장



한국원자력학회 제28대 임원진

회장



성평헌

수석부회장



황주호

부회장



김범년



김용수



박원재

감사



박정용



조직래

고급정책연구소장



서종태

총무이사

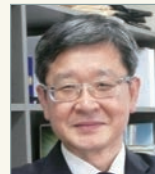


김군태



윤종일

학술이사



정동욱



황용석

사업이사



박석빈



전경락

편집이사



최선주



최성민

재무이사



이승철



채수열

홍보협력이사



이나영



임채영

한국원자력학회 연구부회장 · 지부장

연구부회장



이두정
원자로시스템기술



주한규
원자로물리 및 계산과학



김승평
방사성폐기물관리



이찬복
핵연료 및 원자력재료



정법동
원자력열수력 및 안전



김교윤
방사선이용 및 방호



오영국
양자공학 및 핵융합기술



정대율
원전건설 및 운영기술



김군태
원자력정책, 인력 및 협력



이동영
원자력계측제어 및 자동원격

국내외 지부장



김승평
광주/전남/전북 지부



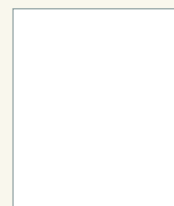
이재영
대구/경북 지부



정재준
부산/울산/경남 지부



이시영
미국 지부



이주상
UAE 지부



강기식
IAEA/Europe 지부

청년지부



이연건 지부장

학생지부



김태석 지부장



김성중 지도교수

한국원자력학회 NET (부)편집위원장 · 사무국 직원

편집위원장



나만균

사무총장



남장수

국내 부편집위원장



구양현



김은희



최기용

실장



민현정

대리



송지현

국외 부편집위원장



Won Sik Yang



Hideo Nakamura



Thorsten Stumpf

직원



심수연

제48회 정기총회 및 특별강연 일정

| 일시 2015년 10월 29일(목) 15:00 ~ 17:50

| 장소 컨벤션 A홀 (B1)

일정	프로그램
15:00 ~ 16:00	국민의례 [사회: 윤종일 총무이사]
	개회사 및 취임사 성풍현 학회장
	축사 최양식 경주시장
	제48회 정기총회 <ul style="list-style-type: none"> • 각 업무별 보고 • 심의의안 1 : 2014년도 결산(안) • 심의의안 2 : 2015년도 가결산(안) • 심의의안 3 : 2016년도 사업계획 및 예산(안) • 심의의안 4 : 정관 개정(안)
16:00 ~ 16:30	한국원자력대상 시상 (수상소감 발표)
	기술상, 두산원자력기술상, HANA 기술상, 원자력과 사회소통상, 퀴리상 시상
	공로패 및 감사패 증정 <ul style="list-style-type: none"> • 공로패 : 장문희 제27대 학회장 • 감사패 증정 [연임하지 않은 제27대 임원] - 부회장 : 김영진, 김하방 - 이 사 : 강현국, 김국현, 김용균, 남영미, 성계용, 유호식, 유홍규, 이광원, 이기복, 주한규 [고급정책연구소장] 노태선 [연임하지 않은 (부)편집위원장] - 편집위원장 : 김무환 - 부편집위원장 : 김규태, 송진호, 송철화 [한미 원자력협력 협상에 기여한 공직자] 박노벽
	[사회: 김균태 총무이사]
16:30 ~ 17:10	특별강연 I 정근모 (한국전력공사 고문) 지구온난화 - 기후변화 극복을 위한 한국원자력발전산업계의 역할
17:10 ~ 17:50	특별강연 II 허동현 (경희대학교 후마니타스칼리지 교수) 실패와 성공의 역사가 주는 교훈

축사

| 일시 | 2015년 10월 29일(목) 15:00 | 장소 | 컨벤션 A홀 (B1)



최 양 식

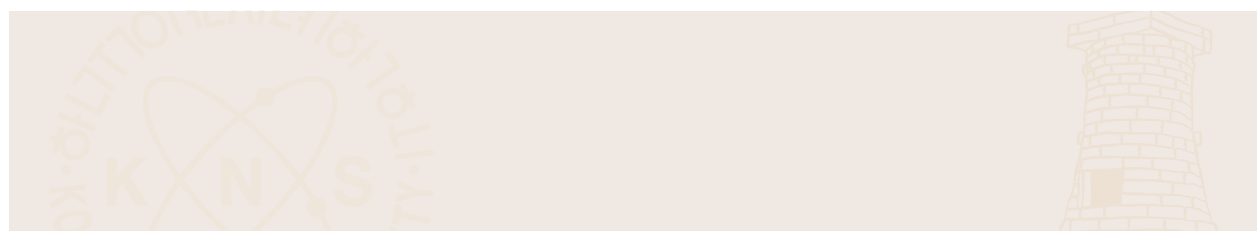
경주시장

| 주요 학력 |

- 중앙대학교 졸업
- 영국 리버풀대학교 행정대학원 졸업
- 백석대학교 명예교육학 박사

| 주요 경력 |

- 1977. 9. 제20회 행정고시 합격
- 2002. 3. 행정자치부 인사국장
- 2003. 4. 행정자치부 기획관리실장
- 2004. 3. 행정자치부 행정개혁본부장
- 2005. 1. 행정자치부 정부혁신본부장
- 2006. 8. 행정자치부 제1차관
- 2008. 3. 경주대학교 총장
- 2010. 7. 제31대 경주시장
- 2014. 7. 제32대 경주시장



특별강연

| 일시 2015년 10월 29일(목) 16:30 ~ 17:50 | 장소 컨벤션 A홀 (B1)



정근모

한국전력공사 고문

제12대, 15대
과학기술처 장관

제4대 한국과학기술
한림원장

제2대 세계 원자력
한림원장

지구온난화·기후변화 극복을 위한 한국원자력발전산업계의 역할

오는 12월 세계정상지도자들은 불란서 파리에 모여 지구온난화-기후변화 극복을 위한 각국의 대응 방안을 제시하고 국제적인 협력방안을 모색한다. 기후변화가 가져올 재앙을 방지하려면 세계는 화석연료의 사용을 억제하고 환경가스의 배출을 적극적으로 막아야 할 것이다. 이를 위하여 한국원자력발전산업계는 국내외에서 원자력 발전사업을 추진하고 있으며 여기에는 독자적인 원자력발전사업의 지속적인 추진 뿐 아니라 국제적인 협력사업에도 적극적으로 나서서 연구개발사업과 원전건설사업을 시행하고 있다.

「과학기술입국」을 국가건설의 기본정책으로 채택하여 세계 최빈국에서 선진국 대열에 오른 대한민국에 있어서 원자력발전산업은 선진산업개발의 원동력을 제공해왔으며 자원빈국으로서의 한계를 극복하는데 결정적 공헌을 해오고 있다. 현재 진행중인 Jordan 및 Netherland에서의 하나로 연구로사업, Saudi Arabia와 공동개발중인 SMART SMR형 원자로 사업 및 UAE에서 건설중인 대형 발전소 건설사업 등은 지구온난화-기후변화 극복을 위한 한국원자력 산업계의 실천적 업무라 하겠다. 특히 Barakah 현장에서 진행되고 있는 UAE원자력발전소 건설사업은 단일부지에서 4기의 대형원자력발전소를 건설하는 역사적인 최대전력공급사업이다.

원자력 발전사업을 지속적으로 추진하는데 가장 중요한 것이 유능한 전문기술인력의 확보임을 인식하고 한국 원자력산업계는 「한국전력국제원자력대학원대학교」를 설립운영하고 있으며 이 학교에서는 이론뿐만 아니라 실무적 능력 배양을 위하여 Systems Engineering 방법을 통한 Project 중심 교과과정을 제공하고 있으며 국내외 유망한 기술자들에게 장학지원을 하고 있다.

한국원자력발전산업계는 원자력발전산업이 국가산업발전을 넘어서 세계적 난제인 지구온난화-기후변화 극복의 관건임을 확신하고 국내외 과학기술계와 협력하여 인류문명의 지속가능발전에 실질적인 일역을 감당할 것이다.



허동현

경희대학교
후마니타스 칼리지 교수
국사편찬위원회 위원
광복70주년기념사업
추진위원회
민족공지분과 위원장

실패와 성공의 역사가 주는 교훈

서양세력이 물밀듯 동아시아로 밀려들던 19세기 동아시아 사람들에게 주어진 시대적 과제는 제국주의 열강의 침략을 막아 내고 국민국가를 수립하는 것이었다. 그때 동아시아의 중심국가 중국은 반식민지가 되었고, 일본은 국민국가로 재탄생했으며, 소중화(小中華)를 자처하던 조선은 문화적으로 열등하다고 간주해 왔던 일본에 나라를 갖기는 실패의 역사를 쓰고 말았다.

근대란 무엇인가? 부르주아지가 일찍 자라난 선발국 영국과 프랑스에게는 굴뚝과 인권 세우기가 함께 행해진 시대였고, 그렇지 못했던 후발국 독일과 일본에게는 인권을 유보한 국가주도의 산업화가 추동(推動)된 시대였다. 당시 굴뚝도 세우지 못했던 우리는 망국의 통사(痛史)를 쓰고 식민지로 전락하고 말았다.

그러나 우리는 반쪽으로 찢어진 산하를 잿더미로 만든 6·25전쟁의 폐허를 딛고 일어섰다. “바쁘다 바빠”와 “빨리 빨리”를 입에 달고 압축성장의 시대를 산 우리는 60여년 만에 굴뚝과 인권을 함께 세우는 ‘따라잡기’에 성공했다. 그러나 거북이가 토끼를 누르는 우화 속 이야기를 현실로 만든 세계사에 유례가 없는 이러한 성취에도 불구하고 오늘 우리 미래의 진로는 오리무중의 안개 속이다. 어찌 보면 토끼를 따라잡기 전 거북이에게는 따라 배울 청사진, 즉 앞서 고민하고 성취했던 일본과 서구라는 발전모델이 있었다. 하지만 오늘 우리가 직면한 딜레마는 더 이상 우리가 당면한 현실 문제를 푸는 데 유효한 처방전을 베풀어 줄 수 없다는 것이다.

현안을 푸는 방정식을 세우기 위해 열어야 할 지혜의 보고는 우리의 특수한 경험이 커커이 쌓여 있는 역사라는 보물창고가 아닐까? 이 강좌의 목적은 실패와 성공의 역사가 주는 교훈을 살펴봄으로써 현안을 푸는 방정식을 세우기 위한 브레인스토밍에 일조하려는 데 있다.

2015 정기총회 및 추계학술발표회 수상자 명단

| 시상식 | 2015년 10월 29일(목) 16:00 ~ 16:30

| 장 소 | 컨벤션 A홀 (B1)



한국원자력대상

| 성명 | 정근모 (한국전력공사 고문)

| 소속 | 한국전력공사, 고문

| 주요 공적 |

제12, 15대 과학기술처 장관, 제4대 한국과학기술 한림원장, 제2대 세계원자력 한림원장, 원전표준화를 제안하여 한국형 원전개발의 발판을 마련, 원전 엔지니어링 자립기반을 구축, UAE원전사업 수주에 전략적 우위 확보, KSTAR 사업 기획으로 핵융합 연구를 국제화, 원자력 및 에너지분야 인력양성에 기여, 한국 원자력계의 국제화에 기여



기술상

| 성명 | 하상준

| 소속 | 한국수력원자력(주) 중앙연구원, 안전해석그룹장(수석연구원)

| 주요 공적 |

원전 안전해석코드 및 방법론 기술 개발
재순환 집수조 여과기술 등 가동 원전 안전성향상 기술 개발



두산원자력기술상

| 성명 | 김용수

| 소속 | 한국수력원자력(주) 중앙연구원, EU-APR 팀장

| 주요 공적 |

APR1400 유럽표준설계(EU-APR) 개발 및 유럽사업자요건 인증 추진으로 한국형원전의 해외수출 기반 강화와 중대사고 대처 피동 노외 노심용융물냉각설비 등 원전 안전성 증진 기술 개발에 기여



HANA 기술상

| 성명 | 김규태

| 소속 | 동국대학교 경주캠퍼스, 원자력및에너지시스템공학과 교수, 산학협력단장

| 주요 공적 |

- 국내 경수로핵연료 및 핵연료소재 중장기 개발방향 수립, 지르코늄합금 튜브 국산화 개발전략 수립, HANA 튜브 상용화기술 개발 지원
- 한국표준형 고성능핵연료(PLUS7) 및 수출선도형 고유핵연료(HIPER16)개발 책임자
- 고리2호기용 KOFA 핵연료 대량손상원인 규명



원자력과 사회소통상

| 성명 | 정범진

| 소속 | 경희대학교, 원자력공학과 교수

| 주요 공적 |

- 원자력에 대해 일반인이 이해하기 쉬운 논리개발 및 기고
- 원자력 현안에 대한 시각을 원자력계 내외에 확산
- 방송 및 인터뷰를 통하여 원자력관련 허위정보 대응

퀴리상

성명	소속
김혜진	서울대학교
박민영	서울대학교
채명선	경희대학교

2015 정기총회 및 추계학술발표회 수상자 명단

| 시상식 2015년 10월 29일(목) 18:00 ~ 18:30

| 장소 컨벤션 A, B, C홀 (B1)

학회지 우수논문상

성명	소속
김지현	울산과학기술원
방인철	울산과학기술원
심형진	서울대학교
정재준	부산대학교
홍봉근	전북대학교

학회지 발전기여상

성명	소속	구분
김만철	중앙대학교	금상
김연식	한국원자력연구원	은상
김지현	울산과학기술원	
박현식	한국원자력연구원	
공치동	울산과학기술원	동상
탁태우	울산과학기술원	
심형진	서울대학교	
김요찬	한국원자력연구원	
김승환	한국원자력연구원	

학술발표회 우수논문상

성명	소속
감동훈	한국과학기술원
김도현	한양대학교
김종환	한국원자력연구원
김태호	울산과학기술원
노승국	한국원자력연구원
박준희	한국원자력연구원
서상규	한국과학기술원
이원욱	한국원자력연구원
정순일	미래와 도전(주)
정재호	한국원자력연구원
전인섭	한국과학기술원
지영택	한국과학기술원
최수영	울산과학기술원

2015 춘계 학생 / 청년 Competition Session

성명	소속	구분
이주형	한국과학기술원	최우수상
정은희	한양대학교	
허태민	서울대학교	
박해균	경희대학교	우수상
이호중	한국과학기술원	
윤도균	가톨릭대학교	

만찬 행사 일정

| **일시** 2015년 10월 29일(목) 18:00 ~ 20:30

| **장소** 컨벤션 A, B, C홀 (B1)

일 정	프로그램
18:00 ~ 18:30	[사회 : 정동욱 학술이사] 장내 안내말씀
	인사말 : 성풍현 학회장
	학회지 우수논문상, 학회지 발전기여상, 학술발표회 우수논문상 시상 학생/청년 Competition Session 시상
	PHYSOR 장학증서 : 육승수, 현해리 NUCHI 장학증서 : 전인섭 학생지부장 위촉장 : 김태석
18:20 ~ 20:00	만찬 추계학술발표회 영상 상영
19:00 ~ 19:10	[사회 : 최선주 편집이사] 수상소감 : 정용환 단장 (대한민국최고과학기술인상 수상 기념) 건배제의
19:10 ~ 20:00	[원자력재주꾼 공연] 클래식기타 독주 : 우중섭 Band "Safeguard" 공연 : 박중윤 외 5인
20:00 ~ 20:30	[사회 : 최성민 편집이사] 경품 추첨행사 [경품 협찬 특별회원] 두산중공업(주), 선광티앤에스, (주)엑트 한국수력원자력(주), 한국원자력안전기술원 한국원자력연구원, 한국원자력의학원, 한국원자력환경공단 한국전력기술(주), 한전원자력연료(주)

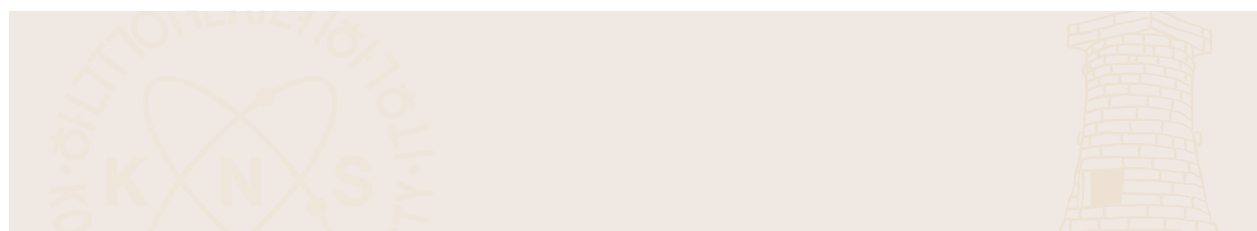


폐회 및 석식 행사 일정

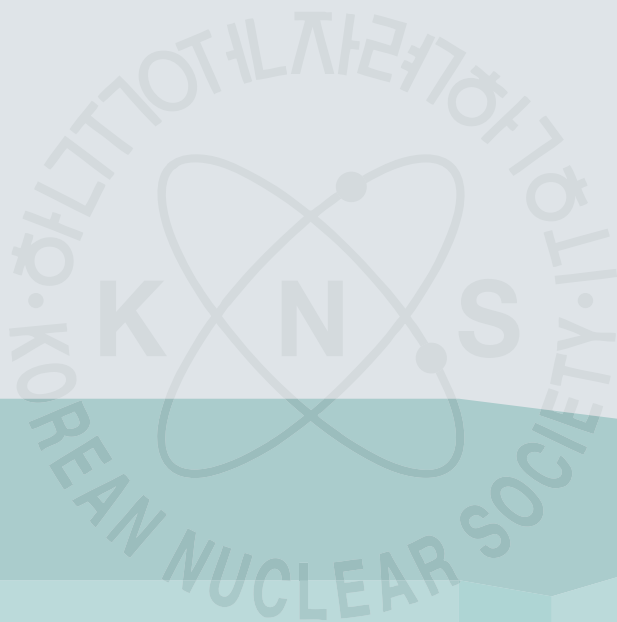
| 일시 2015년 10월 30일(금) 17:30 ~ 18:30

| 장소 팔래스홀 (B2)

일 정	프로그램
17:30 ~ 18:30	참가자 석식
18:00 ~ 18:15	[사회: 황용석 학술이사] 인사말: 성풍현 학회장 분과별 우수포스터 시상 (시상: 각 연구부회장)
18:15 ~ 18:30	경품 추첨 행사 및 폐회 [경품 협찬 특별회원] 두산중공업(주), 선광티앤에스, (주)엑트, 한국수력원자력(주), 한국원자력안전기술원, 한국원자력연구원, 한국원자력의학원, 한국원자력환경공단, 한국전력기술(주), 한전원자력연료(주)



Workshop



Workshop

A

소듐냉각고속로(SFR), 경수로와 무엇이 다른가?

| 일시·장소 2015년 10월 28일(수) 13:30~18:00 · 호텔현대 경주, 지하1층 제이드

| 주최 한국원자력학회 원자시스템기술 연구부회

일 정	내 용
13:30 ~ 13:35	인사말 (연구부회장)
13:35 ~ 13:50	SFR 원형로 개발 현황 소개, 김태완 (SFRA)
13:50 ~ 14:20	소듐냉각고속로(SFR)와 경수로의 안전특성 비교, 정동욱 (중앙대)
14:20 ~ 14:50	소듐냉각고속로(SFR)와 경수로의 인허가성 비교, 정해용 (세종대)
14:50 ~ 15:20	소듐냉각고속로(SFR)와 경수로의 노심 특성 비교, 김용희 (KAIST)
15:20 ~ 15:40	Coffee Break
15:40 ~ 16:10	소듐냉각고속로(SFR)와 경수로의 NSSS계통 특성 비교, 이태호 (KAERI)
16:10 ~ 16:40	소듐냉각고속로(SFR)와 경수로 핵연료 특성 비교, 천진식 (KAERI)
16:40 ~ 17:10	소듐냉각고속로(SFR)와 경수로의 BOP계통 특성 비교, 장영식 (KEPCO E&C)
17:10 ~ 18:00	질의 응답

| 기타사항 - 등록비 : 없음

- 문의처 : 김태완 / 소듐냉각고속로개발사업단 / 042-868-8791 / twkim3@kaeri.re.kr
 안규석 / 소듐냉각고속로개발사업단 / 042-868-8979 / ksahn@kaeri.re.kr

B

공론화 이후의 합리적인 사용후핵연료 관리 방안

| 일시·장소 2015년 10월 28일(수) 14:00~18:00 · 호텔현대 경주, 2층 에메랄드

| 주최 한국원자력학회 방사성폐기물관리 연구부회, 한국원자력환경공단 (KORAD)

일 정	내 용
13:00 ~ 14:00	등 록
14:00 ~ 14:10	개회사 (김승평 교수 / 연구부회장)
14:10 ~ 14:20	격려사 (이종인 이사장 / 원자력환경공단)
14:20 ~ 14:50	(특별강연) 사용후핵연료 관리에 대한 권고안 및 정부의 기본계획 방향 / 산업통상자원부
14:50 ~ 15:00	휴 식
15:00 ~ 15:20	(주제발표 I) 사용후핵연료 관리기술 개발 현황 / 박주완 소장 (원자력환경공단)
15:20 ~ 15:40	(주제발표 II) 해외 사용후핵연료 관리시설 지원사례 및 시사점 / 정지범 박사 (행정연구원)
15:40 ~ 16:00	(주제발표 III) 사용후핵연료 관리에 대한 지역 수용성 제고 방안 / 오영석 교수 (동국대학교)
16:00 ~ 16:20	(주제발표 IV) 미래를 위한 사용후핵연료 관련 연구개발 방안 / 정범진 교수 (경희대학교)
16:20 ~ 16:40	휴 식
16:40 ~ 18:00	종합 토론 / 주제 발표자 및 패널 등
18:00 ~ 18:10	폐 회

| 기타사항 - 등록비 : 5만원 (저녁식사 제공)

- 문의처 : 이재학 / KORAD 사용후핵연료정책팀장 / 054-750-4250 / jaihak@korad.or.kr

Workshop

C

제4회 한 - 일 원자력재료 워크샵 - 핵융합재료

| 일시 · 장소 2015년 10월 28일(수) 10:00~12:30 · 호텔현대 경주, 지하1층 크리스탈

| 주최 한국원자력학회 핵연료 및 원자력재료 연구부회

Time	Content
09:45 ~ 09:55	Registration
09:55 ~ 10:00	Welcome Remark – Dr. Chan-Bok Lee (KNS–Nuclear Fuel and Materials Division)
	Session I : Structural Materials (Chair : Prof. Changheui Jang)
10:00 ~ 10:20	Development of iron-based composites with high thermal conductivity for DEMO – Prof. Naoyuki Hashimoto (Hokkaido Univ.)
10:20 ~ 10:40	Development of advanced reduced-activation alloy (ARAA) for fusion reactor applications – Dr. Y.B. Chun, D.W. Lee, S. Cho, C.K. Rhee, Y.H. Jeong (KAERI)
10:40 ~ 11:00	Development of silicon carbide composites for nuclear application – Prof. Tatsuya Hinoki
11:00 ~ 11:20	Oxidation of SiC ceramics and composites in high-temperature He with various oxygen partial pressures – Dr. W.-J. Kim, D. Kim, D.J. Kim, J.Y. Park (KAERI)
11:20 ~ 11:30	Break
	Session II : Plasma Facing Materials (Chair : TBD)
11:30 ~ 11:50	Development of tungsten based plasma facing components for KSTAR upgrade – Dr. Suk-Ho Hong (NFRI)
11:50 ~ 12:10	Tungsten material development and evaluation for fusion reactor application – Prof. Akira Hasegawa (Tohoku Univ.)
12:10 ~ 12:30	Development of a PVD/PS W coating on graphite panel – Prof. C. Jang, H. Kim (KAIST)
12:30 ~	Lunch

| 기타사항 – 등록비 : 3만원 (발표책자 및 점심식사 제공)

– 문의처 : 장창희 교수 / KAIST / 042-350-3824 / chjang@kaist.ac.kr

김현명 / KAIST / 042-350-3864 / h46kim@kaist.ac.kr

D

가동원전 재료열화 연구 현황 및 전망

| 일시 · 장소 2015년 10월 28일(수) 13:30~18:00 · 호텔현대 경주, 지하1층 크리스탈

| 주최 한국원자력학회 핵연료 및 원자력재료 연구부회

일 정	내 용
13:30 ~ 14:00	등록
14:00 ~ 14:10	핵연료 및 원자력재료 연구부회장 인사, 이찬복 (KAERI)
	좌장 : 김홍표(KAERI)
14:10 ~ 14:40	장기가동원전 재료열화 규제연구 현황, 강성식, 박정순, 이기형 (KINS)
14:40 ~ 15:10	한수원의 가동원전 재료현안 및 연구현황, 이경수 (KHNP-CRI)
15:10 ~ 15:40	BMI노즐 Laser Shock Peening기술개발, 박광수 (두산중공업)
15:40 ~ 16:10	원전 구조재료의 환경피로 시험연구 현황, 장창희 (KAIST), 이준호 (KAIST), 김태순 (한수원)
16:10 ~ 16:30	휴식
	좌장 : 장창희 (KAIST)
16:30 ~ 17:00	증기발생기 전열관 파손거동, 김진원, 엄기현 (조선대), 김종성 (순천대)
17:00 ~ 17:30	냉각계통 재료열화 완화기술 개발 현황, 허도행 (KAERI)
17:30 ~ 18:00	가동원전 재료열화 연구현황, 황성식 (KAERI)
18:00 ~	Dinner

| 기타사항 – 등록비 : 5만원 (발표집 및 저녁식사 제공)

– 문의처 : 황성식 / KAERI / 042-868-2310 / sshwang@kaeri.re.kr

Workshop

E

원전 화재 방호 기술현안과 규제

| 일시·장소 2015년 10월 28일(수) 14:00~18:00 · 호텔현대 경주, 2층 마호가니

| 주최 한국원자력학회 원자력 열수력 및 안전 연구부회

일 정	내 용
14:00 ~ 14:10	개회사, 정법동 (원자력 열수력 및 안전연구부회장)
14:10 ~ 14:20	격려사, 성몽현 (한국원자력학회장)
14:20 ~ 14:50	원자력 화재방호 규제 기술 기준, 이상규 (KINS)
14:50 ~ 15:20	석유화학 플랜트에서의 화재방호, 박승규 (산업안전보건공단)
15:20 ~ 15:50	원전 화재방호 운영 현안기술 및 협업 전문화, 지문학 (KHNP)
15:50 ~ 16:10	휴 식
16:10 ~ 16:40	화재와 원전 안전 현안, 김위경 (KINS)
16:40 ~ 17:10	화재 PSA 기술현황, 강대일 (KAERI)
17:10 ~ 17:40	전기배선 화재, 임춘택 (KAIST)
17:40 ~ 18:00	종합 토의

| 기타사항 - 등록비 : 3만원 (저녁식사 제공)

- 문의처 : 김지숙 / KAIST / 042-350-3870 / jisook2@kaist.ac.kr

강현국 / KAIST / 042-350-3830 / hyungook@kaist.ac.kr

F

외부사건 안전성 평가 현황 및 향후 연구 방향

| 일시·장소 2015년 10월 28일(수) 14:00~18:00 · 호텔현대 경주, 2층 사파이어

| 주최 한국원자력학회 원자력 열수력 및 안전 연구부회

일 정	내 용
14:00 ~ 14:10	개회사, 양준언 (한국원자력연구원 종합안전평가부장)
14:10 ~ 14:20	격려사, 백원필 (한국원자력연구원 안전연구본부장)
14:20 ~ 14:50	국내원전 외부재해 대처방안, 장천중 (한국수력원자력 중앙연구원)
14:50 ~ 15:20	외부사건에 대한 설계 및 안전성 평가 현황, 이성면 (한국전력기술)
15:20 ~ 15:50	외부사건 리스크 국내외 연구현황, 김민규 (한국원자력연구원)
15:50 ~ 16:20	휴 식
16:20 ~ 16:50	극한 외부사건 선별 분석 및 향후 연구방향, 전영선 (한국원자력연구원)
16:50 ~ 17:20	국내 원전부지의 외부침수 시뮬레이션, 한건연 (경북대학교)
17:20 ~ 18:00	종합토의

| 기타사항 - 등록비 : 3만원 (저녁식사 제공)

- 문의처 : 김민규 / 한국원자력연구원 / 042-868-8790 / minkyu@kaeri.re.kr

박준희 / 한국원자력연구원 / 042-868-4859 / jhpark78@kaeri.re.kr

Workshop

G

국산 사이클로트론 기술 현황과 미래 방향

- 한국 사이클로트론 30년, 국산 사이클로트론 15년 -

| 일시 · 장소 2015년 10월 28일(수) 13:00~18:00 · 호텔현대 경주, 지하1층 금강

| 주최 한국원자력학회 방사선이용 및 방호 연구부회, 한국방사선진흥협회

일 정	내 용
13:00	Coffee break
13:10	인사말 / 이명철 (한국방사선진흥협회 / 회장)
13:20	1부 시작 (좌장: 유국현 (동국대학교 / 교수))
13:20	국산 사이클로트론 개발의 배경과 미래기술개발 방향 채종서 (성균관대학교 / 교수)
13:45	한국 핵의학의 발전과 권역별 사이클로트론 센터 설치의 의의 강건욱 (서울대학교 / 교수)
14:10	권역별 사이클로트론 센터의 현황과 미래 방향 김중우 (듀켄바이오 / 사장)
14:35	경기 권역 사이클로트론 센터의 운영 현황과 향후 계획 이병철 (분당서울대병원 / 교수)
15:00	Coffee break
15:10	2부 시작 (좌장: 양승대 (원자력연구원 / 책임연구원))
15:10	국산 RFT-30 사이클로트론 시설 및 운영 현황과 향후 계획 허민구 (한국원자력연구원 / 책임연구원)
15:35	30 MeV 사이클로트론의 RF 기술 현황과 앞으로의 방향 정인수 (한국원자력의학원 / 책임연구원)
16:00	대전류 사이클로트론용 multicusp 이온원 기술 현황 연영흠 (성균관대학교 ITAEC / 연구원)
16:25	Coffee break
16:40	RFT-30 사이클로트론 이용 연구개발 박정훈 (한국원자력연구원 / 책임연구원)
17:05	초전도 사이클로트론의 기술 개발 현황과 향후 계획 김현욱 (한국원자력의학원 / 연구원)
17:30	질의 응답

| 기타사항 - 등록비: 1만원 (저녁식사 제공)

- 문의처: 이승현 / 성균관대학교 / 010-3455-9070 / genesisimp@skku.edu

김건욱 / 한국방사선진흥협회 / 010-2390-9077 / konuk@ri.or.kr

H

동위원소 미래비전

| 일시 · 장소 2015년 10월 28일(수) 15:00~18:00 · 호텔현대 경주, 2층 루비

| 주최 한국원자력학회 방사선 이용 및 방호 연구부회, 한국원자력연구원

일 정	내 용
15:00 ~ 15:30	등 록
15:30 ~ 16:00 (30")	인사말 김교윤 (방사선이용 및 방호연구부회장, 한국원자력연구원 해양원전개발센터장)
	환영사 임인철 (한국원자력연구원 하나로이용연구본부장)
	축사 성풍현 (한국원자력학회 회장)
16:00 ~ 16:30 (30")	국가 동위원소 산업육성 전략 김용균 (한양대학교 원자력공학과 교수)
16:30 ~ 16:50 (20")	국가 동위원소 프로그램 (안) 김상욱 (동국대학교 신소재화학학과 교수)
16:50 ~ 17:10 (20")	중성자 기반 동위원소: 현황과 전망 이준식 (한국원자력연구원 동위원소이용연구부장)
17:10 ~ 17:30 (20")	양성자 기반 동위원소: 현황과 전망 안광일 (한국원자력의학원 분자영상연구부)
17:30 ~ 17:50 (20")	기장 연구로 건설 추진 현황 이기홍 (한국원자력연구원 신행연구로 실증사업 사무국장)

| 기타사항 - 등록비: 없음

- 문의처: 이수승 / 한국원자력연구원 / 042-866-6212 / ssl1863@kaeri.re.kr

Workshop

I EU-APR 개발 및 유럽사업자요건(EUR) 인증 추진 현황

| 일시·장소 2015년 10월 28일(수) 13:00~18:00 · 호텔현대 경주, 지하1층 컨벤션A

| 주최 한국원자력학회 원전건설 및 운영기술 연구부회

일 정	내 용
13:00 ~ 13:05	개회사: 이재용 소장 (한수원 CRI)
13:05 ~ 13:15	환영사: 채규남 과장 (산업부 원전수출진흥과)
13:10 ~ 13:15	격려사: 정대율 연구부회장 (한수원 CRI)
13:15 ~ 13:30	EU-APR 인증 사업 현황 및 전망 (김용수 / 한수원 CRI)
13:30 ~ 13:45	EUR 인증 개요 및 EU-APR 설계 특성 (김지환 / 한수원 CRI)
13:45 ~ 14:00	EU-APR 일반배치 (이현규 / 한기IAE)
14:00 ~ 14:15	EU-APR 토목 설계기준 및 지진 해석 (이진우 / 한기IAE)
14:15 ~ 14:30	EU-APR 노심 및 연료 설계 (박상원 / KNF)
14:30 ~ 14:45	EU-APR 안전 해석 (이상섭 / 한기SD)
14:45 ~ 15:00	휴 식
15:00 ~ 15:15	EU-APR NSSS 유체계통 설계 (박성찬 / 한기SD)
15:15 ~ 15:30	EU-APR 전기계통 설계 (최성엽 / 한기IAE)
15:30 ~ 15:45	EU-APR MMIS 설계 (김진구 / 한기IAE)
15:45 ~ 16:00	EU-APR 방사선방호 설계 (강상호 / 한기IAE)
16:00 ~ 16:15	EU-APR 중대사고 대처설계 (김병조 / 한기IAE)
16:15 ~ 16:30	EU-APR 내부재해분석 (이규복 / 한기IAE)
16:30 ~ 16:45	EU-APR 확률론적안전성평가 (석호 / 한기IAE)
16:45 ~ 17:00	휴 식
17:00 ~ 18:00	패널 토의
18:30 ~ 20:00	만찬

| 기타사항 - 등록비 : 없음 (만찬제공)

- 문의처 : 황도현 / 한수원 EU-APR팀 / 042-870-5719 / crihwang@khnp.co.kr

J 장기 가동원전 안전성 증진

| 일시·장소 2015년 10월 28일(수) 13:00~18:00 · 호텔현대 경주, 지하1층 컨벤션B

| 주최 한국원자력학회 원전 건설 및 운영기술 연구부회

일 정	내 용
13:00 ~ 14:00	등 록
개막행사	사 회 : 한수원 중앙연구원 문석호 차장
14:00 ~ 14:05	개회사 (건설 / 운영연구부회장)
14:05 ~ 14:10	환영사 (설비개선실장)
14:10 ~ 14:15	인사말 (한국원자력연구원 백원필 박사)
주제발표 I	계속운전 심사 및 계속운전 제도
14:15 ~ 14:30	월성1호기 계속운전 규제활동 (KINS / 어근선 PM)
14:30 ~ 14:45	월성1호기 계속운전 추진현황 및 개선방안 (한수원 / 정영식 팀장)
14:45 ~ 15:00	Break
주제발표 II	장기 가동원전 주기적안전성평가
15:00 ~ 15:15	가압경수로형 원전 PSR 심사지침 개선 (KINS / 김대식 박사)
15:15 ~ 15:30	원전설비 경년열화관리 강화방안 (KOPEC / 정성규 상무)
15:30 ~ 15:50	Break
주제발표 III	장기 가동원전 스트레스테스트 평가
15:50 ~ 16:05	스트레스테스트 수행 (KHNP / 중앙연구원 윤봉요 부장)
16:05 ~ 16:20	대형 지진에 대한 기간시설물의 지진 취약도 (건국대학교 / 이태형 교수)
16:30 ~ 16:50	Break
16:50 ~ 17:30	패널 토론 (좌장 : 백원필 박사)

| 기타사항 - 등록비 : 없음 (식사 제공 : 무)

- 문의처 : 조미영 / 한수원 중앙연구원 / 042-870-5629 / minmycho@khnp.co.kr

Workshop

K

비원자력계에서 바라본 원자력에 대한 제언

| 일시·장소 2015년 10월 28일(수) 14:00~17:30 · 호텔현대 경주, 2층 오펜

| 주최 한국원자력학회 원자력정책, 인력 및 협력 연구부회, (사)한국여성원자력전문인협회

일 정	내 용
13:30 ~ 14:00	등록
	사회 : 최유정 (한수원 중앙연구원)
14:00 ~ 14:10	개회식 <ul style="list-style-type: none"> • 개회사 : 이레나 ((사)한국여성원자력전문인협회 회장) • 환영사 : 김군태 (한국원자력학회 원자력정책, 인력 및 협력 연구부회장)
14:10 ~ 14:50	원자력에너지를 넘어 지역에너지로의 전환 이윤진 (에너지기후정책연구소 연구기획위원)
14:50 ~ 15:30	일본 후쿠시마 원전사고 이후 국내 원자력손해배상제도의 문제점과 발전방향 함철훈 (한양대학교 대학원 과학기술정책학과 교수)
15:30 ~ 15:50	휴식
	패널 토의
15:50 ~ 17:30	좌 장 : 이승숙 (한국원자력의학원 국가방사선비상진료센터 센터장) 토론자 : 김상원 (한국원자력안전기술원 원자력안전학과 교수), 박재구 (발전산업신문 기자), 이병국 (한국수력원자력(주) 원자력정책팀 팀장), 이상기 (경주 경실련 원자력정책연구소 소장), 정환삼 (한국원자력연구원 정책연구부 책임연구원), 함철훈 (한양대학교 대학원 과학기술정책학과 교수) (가나다순)
17:30 ~	만찬

| 기타사항 - 등록비 : 5만원 (저녁식사 제공)

- 문의처 : 김중선 / (사)한국여성원자력전문인협회 / 042-866-4202 / wink@winkorea.or.kr

L

제5차 원자력진흥종합계획 수립을 위한 토론회

| 일시·장소 2015년 10월 28일(수) 13:00~15:30 · 호텔현대 경주, 지하1층 다이아몬드

| 주최 한국원자력학회 원자력 정책 · 인력 및 협력 연구부회, 한국에너지기술평가원, 한국연구재단

일 정	내 용
12:30	등록
13:00	개회사
13:10	진흥종합계획 추진 경과 소개 : 연구재단
13:40	진흥종합계획 수립 현황 : KAERI
14:10	Coffee Break
14:30	패널토의 : 좌장 양병호 (KAERI) 이종호 (한수원), 주한규 (서울대), 송기찬 (KAERI), 석광훈 (에너지시민연대)
15:00	Floor discussion
15:20	폐회사
15:30	종료

| 기타사항 - 등록비 : 없음

- 문의처 : 노승국 / KEARI / 042-866-6249 / skroh@kaeri.re.kr

※ 15:30에 본 행사가 종료된 후 곧이어 16:00부터 18:00까지 한국에너지기술평가원 주관 「원자력핵심
기술개발사업 2016년도 R&D 기획공개 설명회」가 개최되오니 많은 참석을 바랍니다.

Workshop

M

제1회 국가 원자력 인력양성 컨퍼런스

| 일시 · 장소 2015년 10월 28일(수) 10:00~18:00 · 호텔현대 경주, 지하1층 컨벤션C
| 주최 한국원자력학회 원자력 정책, 인력 및 협력 연구부회, 원자력교육협력협의회
| 주관 한국원자력협력재단, 한국원전수출산업협회

일 정	내 용
10:30 ~ 11:00	등록
11:00 ~ 12:00	〈정책분야〉 원자력 인력양성 정책목표와 추진현황 • (개회사) 성풍현 한국원자력학회장 • (축 사) 민병주 국회의원, 최양식 경주시장 • 기조연설: 박원재 원자력교육협력협의회장 • 초청연사 주제발표: 오세기 KINGS 총장
12:00 ~ 13:00	오찬 (도시락 제공)
13:00 ~ 14:20	〈인력수급〉 원자력 인력양성 동향과 전문인력 수급 • 좌 장: 정범진 경희대 교수 • 발표자: 정범진 경희대 교수 • 토론자: 박현중 산업통상자원부 사무관, 김동민 미래창조과학부 사무관, 김민지 원자력안전위원회 사무관
14:20 ~ 15:40	〈국내 교육훈련〉 교육훈련을 통한 원자력 종사자 역량강화 • 좌 장: 강장두 한수원 인재개발원 센터장 • 발표자: 윤형익 한국전기기술인협회 팀장, 김현덕 (주)TED컨설팅 대표, 조정래 한수원인재개발원 팀장
15:40 ~ 16:00	커피 브레이크
16:00 ~ 17:20	〈해외 교육협력〉 해외 원자력 교육훈련 협력을 통한 시너지 창출 • 좌 장: 남영미 KAERI 원자력교육협력센터장 • 발표자: 남영미 KAERI 원자력교육협력센터장, 강현국 KAIST 교수, 박민철 KONICOF 팀장

| 기타사항 - 등록비: 없음 (점심식사 제공)
 - 문의처: 김주영 / 한국원자력협력재단 / 042-867-0186 / juyoung@konicof.or.kr

N

원자력사고 원격대응 기술혁신 및 적용성 증대방안

| 일시 · 장소 2015년 10월 28일(수) 13:00~18:00 · 호텔현대 경주, 지하2층 팔레스
| 주최 한국원자력학회 원자력 계측제어 및 자동원격 연구부회

일 정	내 용
13:00 ~ 13:20	개회사 (연구부회장), 환영사 (최순 본부장, KAERI)
13:20 ~ 13:30	워크숍 소개 (정경민, KAERI)
13:30 ~ 14:10	(특강) 원자력사고대응 로봇경진대회 결과 (이정호, Rainbow)
14:10 ~ 14:35	원자력사고 원격대응 기술지원 체계구축 방안 (최영수, KAERI)
14:35 ~ 15:00	중대사고 환경에서 인공지능을 이용한 필수정보 예측 (나만균, 조선대)
15:00 ~ 15:25	원전사고 긴급조치용 이족 작업로봇 및 격벽 중계 통신용 비행체 개발 (김종석, KHNP)
15:25 ~ 15:45	Coffee Break
15:45 ~ 16:10	Highly Reliable Wireless Power and Communications under Severe Accident of NPPs (임춘택, KAIST)
16:10 ~ 16:35	Technologies for mitigation of severe accident consequences through out-containment
16:35 ~ 17:00	원자력사고 원격대응기술 국제협력 방안 (최영, KAERI)
17:00 ~ 17:25	미국의 원자력로봇과 사고대응 로봇 (박영수, 미국 ANL)
17:25 ~ 17:50	국가 방사능방재체계 (박상현, KINS)
17:50 ~ 18:00	Wrap-up
18:00 ~ 20:00	만찬

| 기타사항 - 등록비: 4만원 (저녁식사 제공)
 - 문의처: 정경민 / KAERI / 042-868-8835 / kmjeong@kaeri.re.kr
 이동영 / KAERI / 042-868-2927 / dylee2@kaeri.re.kr

Workshop

0

중대사고 현상규명 및 대처체계 구축 로드맵

| 일시 · 장소 2015년 10월 28일(수) 13:30~18:00 · 호텔현대 경주, 지하2층 다이너스티

| 주최 한국원자력학회 중대사고 현상규명 및 대처체계 구축 로드맵 작성 특별위원회

일 정	내 용
13:00 ~ 13:30	등 록
13:30 ~ 13:45	환영사 및 특별 위원회의 취지, 류용호, 한국원자력안전기술원, 특별위원회 위원장
13:45 ~ 14:10	중대사고 및 열수력 안전 연구의 현황 및 미래, 박군철, 서울대학교
14:10 ~ 14:35	국내외 중대사고 로드맵 개발 현황 및 전망, 송진호, 한국원자력연구원
14:35 ~ 15:00	원자로 방호 분과 로드맵 개발, 김동하, 한국원자력연구원
15:00 ~ 15:25	격납건물 방호 분과 로드맵 개발, 박현선, 포항공과대학교
15:25 ~ 15:50	핵분열 생성물 거동 분과 로드맵 개발, 김한철, 한국원자력안전기술원
15:50 ~ 16:15	중대사고와 PSA의 연계, 양준언, 한국원자력연구원
16:15 ~ 16:30	휴 식
16:30 ~ 18:00	주제 발표 및 패널 토론
주제 발표 : 정부 주도 과제 중대사고 연구 방향 (예기평 : 정화성 PM, 연구 재단 : 박홍준 PM, 방안재단 : 유영우 부장)	

| 기사사항 — 등록비 : 3만원 (저녁식사 제공)

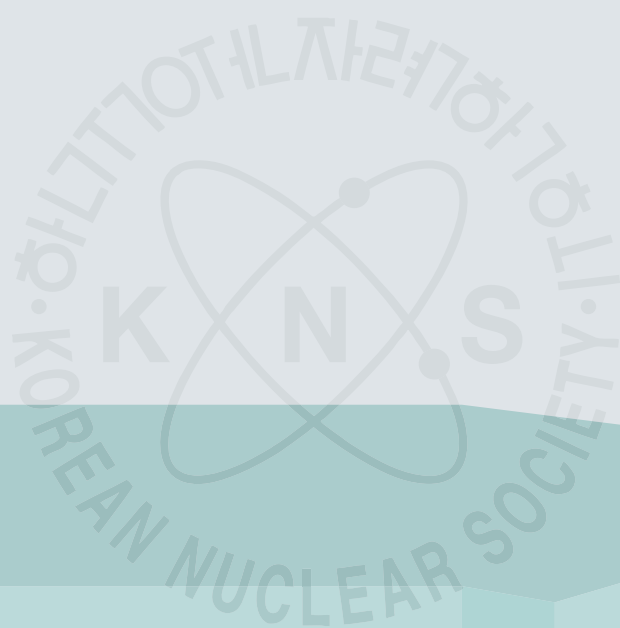
— 문의처 : 김성일 / 한국원자력연구원 / 010-9072-7796 / sikim@kaeri.re.kr

KOREAN NUCLEAR SOCIETY

KNS 2015 Fall

2015 추계학술발표회

분과별 논제 및 발표자



1A
10. 29 (목)

소듐냉각고속로 (Sodium Cooled Fast Reactor)

I 좌장 조충호(Chungho Cho), 이정익(Jeong Ik Lee)

I 발표장소 제이드(지하1층)

초청발표

09:30

Status of Prototype Gen-IV Sodium Cooled Fast Reactor and its Perspective
Jae Woon Yoo(KAERI)

10:00

Experimental Study of Na Based Titanium Nanofluid-Water Reaction

Gunyeop Park, Soo Jae Kim, Hyun Soo Kim, Sun Ryung Oh, Hyun Sun Park, Moo Hwan Kim, and Jehyun Baek(POSTECH)

10:20

Gas-Liquid Separator Design of SWRPRS in PGSFR

Jung Yoon and Tae-ho Lee(KAERI)

10:40

Coffee Break

11:00

Experimental Investigation of Gaseous Reaction Products from Na-CO₂ Reaction in Na/CO₂ Heat Exchanger Leakage ScenarioA-Reum Go, Hwa-Young Jung, Min Seok Kim, and Jeongik Lee(KAIST),
Jaehong Min and Myung-Hwan Wi(KAERI)

11:20

Chemisorption of Na on the Ti Nanoparticle Surface and Its Effects on the Na-H₂O Reaction Reactivity

Soo Jae Kim(KAERI), Gunyeop Park, Hyun Sun Park, and Jehyun Baek(POSTECH), Moo Hwan Kim(KINS)

11:40

Numerical Analysis of Flow Distribution in a Sodium Chamber of a Finned-tube Sodium -to- Air Heat Exchanger

Youngchul Jo, Seockkwon Son, Hyungmo Kim, Jaehyuk Eoh, and Jiyoung Jeong(KAERI)

12:00

Development of a Program for Predicting Flow Instability in a Once-through Sodium-Heated Steam Generator

Eui Kwang Kim, Dehee Kim, Jong Bum Kim, and Tae-Ho Lee(KAERI)

12:20

Design Features of the Separate Effect Test Facility for a Forced-Draft Sodium-to-Air Heat Exchanger (FHX) with Helical Finned Tubes

Hyungmo Kim, Jaehyuk Eoh, Yung Joo Ko, Youngil Cho, Jong-Man Kim, Hyeong-Yeon Lee, and Ji-Young Jeong(KAERI)

1B
10. 30 (금)

고온가스로 (High Temperature Gas Cooled Reactor)

I 좌장 김응선(Eung Seon Kim), 임홍식(Hong Sik Lim)

I 발표장소 제이드(지하1층)

초청발표

09:00

Strategy for VHTR Realization

Jonghwa Chang(KAERI)

09:30

The Application of Supercritical CO₂ Power Cycle to Various Nuclear Systems

Jeong Ik Lee(KAIST)

10:00

CORONA Verification on the Pin-By-Pin Power Distribution of the VHTR Core

Sung Nam Lee, Nam-il Tak, and Min-Hwan Kim(KAERI)

10:20

Enhanced Oxidation Resistance of SiC Coating on Graphite by Crack Healing at the Elevated Temperature

Jae-Won Park, Eung-Seon Kim, Jae-Un Kim, Yoo-Taek Kim, and William E. Windes(KAERI)

- 10:40 Coffee Break
- 11:00 Preliminary Analysis of Scale Effect on Heat Removal Mechanism in Reactor Cavity Cooling System
Chan Soo Kim, Byung Ha Park, and Y. Y.Bae(KAERI)
- 11:20 Quasi-static Cycle Performance Analysis of Micro Modular Reactor for Heat Sink Temperature Variation
Seong Kuk Cho, Jekyoung Lee, Yoonhan Ahn, and Jeong Ik Lee(KAIST)
- 11:40 Heat Balance Study on Integrated Cycles for Hydrogen and Electricity Generation in VHTR -Part2-
Sang Il Lee and Yeon Jae Yoo(Hyundai Engineering), Gyunyoung Heo, Soyoung Park, and Yeon Kwan Kang(KHU)
- 12:00 Mechanical Analysis of TRISO Particles in a Stiff Matrix
Jonghwa Chang and Yong Wan Kim(KAERI)

1C 10. 30 (금)

경수로/중소형로/연구로 (LWR/Small-Medium Size Reactor/Research Reactor)

| 좌장 김정만(Jeong Mann Kim), 강한옥(Han Ok Kang)

| 발표장소 크리스탈(지하1층)

초청발표

- 09:00 Overall Design Features and Key Technology Development for KJRR
Cheol Park(KAERI)
- 09:30 SMART Pre-Project Engineering Between KAERI and K.A.CARE
Han Ok Kang(KAERI)
- 10:00 Simplified Study for the Proposed APR1400 Condenser Performance Based on El-Dabaa Site, Egypt, with Respect to BNPP&Shin Kori NPP.
M. Gomaa Abdoelatef, Osama Rezk, and YonKwan Lee(KINGS)
- 10:20 Numerical Simulation of the Pressure Distribution in the Reactor Vessel Downcomer Region Fluctuated by the Reactor Coolant Pump
Dong Hwa Jeong, Byung Ryul Jung, Ho Cheol Jang, Seok Jeong Yune, and Eun Kee Kim(KEPCO E&C)
- 10:40 Coffee Break
- 11:00 Development of Reactor Vessel Bottom Mount Instrumentation Nozzle Routine Inspection Device
Khaled Atya Ahmed Abdallah, and Ihn Namgung(KINGS)
- 11:20 A Study on Conjugate Heat Transfer Analysis of Reactor Vessel Including Irradiated Structural Heat Source
Kunwoo Yi, Hyuksu Cho, Inyoung Im, and Eunkee Kim(KEPCO E&C)
- 11:40 Investigation of Na-CO₂ Reaction with Initial Reaction in Various Reacting Surface
Hyun Su Kim, Gunyeop Park, Soo Jae Kim, Hyun Sun Park, and Moo Hwan Kim(POSTECH)
Myung-Hwan Wi(KAERI)
- 12:00 Performance Analysis of Shutdown Cooling System Using Steam Generator in an Integral Reactor
Cheong Bong Chang, Young In Kim, Hun Sik Han, Joo Hyung Moon, and Minkyu Lee(KAERI)

1D 10. 30 (금)

소듐냉각고속로/고온가스로 (SFR/VHTR)

| 좌장 윤정(Jung Yoon), 강지호(Ji Ho Kang)

| 발표장소 제이드(지하1층)

- 13:30 The Effect of Duct Level on the Performance of Reactor Vault Cooling System in the PGSFR
Sujin Yeom, Seung Ho Ryu, Dehee Kim, and Tae-Ho Lee(KAERI)
- 13:50 The Effect of Air Separator Geometry on the RVCS in PGSFR
Seung Ho Ryu, Sujin Yeom, and Tae-Ho Lee(KAERI)

- 14:10 **Evaluation of the Applicability of RTD to SFR**
Moon-Oh Kim and Dong-Su Kim(NUTHOTH), Su-Jin Yeom and Tae-Ho Lee(KAERI)
- 14:30 **A Preliminary Analysis of PHTS Preheat Using High-Temperature Gas**
Huee-Youl Ye, Jung Yoon, and Tae-Ho Lee(KAERI), Moonchul Choi and Jong-Soo Lim(JEI)
- 14:50 **Technology Development of an Advanced Small-Scale Microchannel-Type Process Heat Exchanger (PHE) for Hydrogen Production in Iodine-Sulfur Cycle**
Injin Sah, Chan Soo Kim, Yong Wan Kim, Jae-Won Park, Eung-Seon Kim, and Min-Hwan Kim(KAERI)
- 15:10 **Coffee Break**
- 15:30 **An Assessment of the VHTR Safety Distance Using the Reliability Physics Model**
Joeun Lee, Jintae Kim, and Moosung Jae(HYU)
- 15:50 **Passive Decay Heat Removal System for Micro Modular Reactor**
Jangsik Moon, Jeong Ik Lee, and Yong Hoon Jeong(KAIST)
- 16:10 **Experimental and Numerical Study on Transient Behavior of Printed Circuit Heat Exchangers**
Byung Ha Park and Chan Soo Kim(KAERI)
- 16:30 **Preliminary Thermohydraulic Analysis of a New Moderated Reactor Utilizing a LEU-Fuel for Space Nuclear Thermal Propulsion**
Seung Hyun Nam, Jae Young Choi, Paolo F. Venneri, Yong Hoon Jeong, and Soon Heung Chang(KAIST)

1E

10. 29 (목)
– 30 (금)

소듐냉각고속로 (Sodium Cooled Fast Reactor) – POSTER

| 좌장 최치웅(Chiwoong Choi), 김성균(Sung-Kyun Kim)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P01E01 **2014 PGSFR Safety Analysis for Loss of Heat Sink**
J. H. Jeong, K. L. Lee, C. W. Choi, T. K. Jeong, J. Yoo, W. P. Chang, S. J. Ahn, S. W. Lee, S. H. Kang, and K. S. Ha(KAERI)
- P01E02 **A Study on the Evaluation of Real Gas vs. Ideal Gas for its Application to the CO₂ Leak Flow Model**
Hwa-Young Jung and Jeong Ik Lee(KAIST)
- P01E03 **The Performance Test of Mechanical Sodium Pump with Water Environment**
Chungho Cho, Jong-Man Kim, Yung Joo Ko, Ji-Young Jeong, and Jong-Bum Kim(KAERI), Bock Seong Ko, Sang Jun Park, and Yoon Sang Lee(SAM JIN Industrial Co. LTD.,)
- P01E04 **Detection Test for Leakage of CO₂ into Sodium Loop**
Sun Hee Park, Myung-Hwan Wi, and Jae Hong Min(KAERI)
- P01E05 **Structural Integrity Evaluation for the IVTM Gripper in PGSFR**
S. H. Kim and G. H. Koo(KAERI)
- P01E06 **A structural Integrity Evaluation of the IHTS Hot Piping for PGSFR**
Nak-Hyun Kim, Sung-Kyun Kim, and Gyeong-Hoi Koo(KAERI)
- P01E07 **Bellows Design of IHX in PGSFR**
Sung-Kyun Kim, Gyeong-Hoi Koo, Jae-Woon Yoo, and Jong-Bum Kim(KAERI)
- P01E08 **Effect of Various Stagnation to Static Conversion Approximations for Obtaining CO₂ Properties Near the Critical Point**
Jekyoung Lee, Seongkuk Cho, and Jeong Ik Lee(KAIST)
- P01E09 **Experimental and CFD Analysis of Printed Circuit Heat Exchanger for Supercritical CO₂ Power Cycle Application**
Seungjoon Baik, Hyeon Tae Kim, Seong Gu Kim, Jekyoung Lee, and Jeong Ik Lee(KAIST)

- P01E10** **The Start-up Test of Mechanical Sodium Pump Installed in STELLA-1**
Chungho Cho, Jong-Man Kim, Yung Joo Ko, Byeongyeon Kim, Youngil Cho, Min-Hwan Jung, Da-Young Gam, Yong Bum Lee, Ji-Young Jeong, and Jong-Bum Kim(KAERI)
- P01E11** **Comparison of CFD Results for a Supercritical CO₂ Compressor with Compressible and Incompressible Working Fluids**
Seong Gu Kim, Seungjoon Baik, Seong Kuk Cho, and Jeong Ik Lee(KAIST), Jinsu Kwon(HYU)
- P01E12** **Safety Analysis on Large Partial Inlet Flow Blockage in PGSFR**
J. Yoo, W. P Chang, J. H. Jeong, and K. S Ha(KAERI)
- P01E13** **CFD Investigation for Flow Blockage Accident in a Lower Plenum**
J. Yoo, J. H. Jeong, W. P Chang, and K. S Ha(KAERI)
- P01E14** **Performance Estimation of Supercritical CO₂ Cycle for the PG-SFR Application with Heat Sink Temperature Variation**
Yoonhan Ahn, Seong Kuk Cho, and Jeong Ik Lee(KAIST)
- P01E15** **The Self-Calibration Test of Flowmeter Installed in STELLA(Sodium Integral Effect Test Loop for Safety Simulation and Assessment) Facility**
Minhwan Jung and Ji-Young Jeong(KAERI)
- P01E16** **Structural Evaluation of Reactor Support Structure for a PGSFR in a Steady State Condition**
In-Su Han, Chang-Gyu Park, Jong-Bum Kim, and Gyeong-Hoi Koo(KAERI)
- P01E17** **Analyses of Design Extended Condition Events for the Prototype Gen-IV SFR**
Chiwoong CHOI, Taekyung Jeong, Kwilim Lee, Jaeho Jeong, and Kwiseok Ha(KAERI)
- P01E18** **New Fuel Pin Axial Expansion Reactivity Feedback Model in MARS-LMR**
Chiwoong CHOI and Kwiseok Ha(KAERI)
- P01E19** **Three-Dimensional Transient Analysis in the Upper Plenum of MONJU with MARS-LMR**
Kwi-Lim Lee, Jae-Ho Jeong, and Kwi-Seok Ha(KAERI)
- P01E20** **Numerical Analysis on the Free Fall Motion of the Control Rod Assembly for the Sodium Cooled Fast Reactor**
Se-Hong Oh, Choengryul Choi, and Sung-Man Son(ELSOLTEC), Jae-Yong Kim and Kyung-Ho Yoon(KAERI)
- P01E21** **Influence of Thermal Aging on Material Strength Behavior in Grade 91 Steel**
Hyeong-Yeon Lee and Woo-Gon Kim(KAERI)
- P01E22** **Investigation of CO₂ Recovery System Design in Supercritical Carbon Dioxide Power Cycle for Sodium-cooled Fast Reactor**
Min Seok Kim, Hwa-Young Jung, Yoonhan Ahn, Seong Kuk Cho, and Jeong Ik Lee(KAIST)
- P01E23** **Preliminary Study for the Design of Mesh Region in Cold Trap**
Sang-Min Park and Ji-Young Jeong(KAERI)
- P01E24** **Design Evaluation of a Piping System in the SELFA Sodium Test Facility**
Seok-Kwon Son, Young-Chul Jo, Hyeong-Yeon Lee, and Ji-Young Jeong(KAERI)
- P01E25** **Evaluation of Melt Behavior with Initial Melt Velocity Under SFR Severe Accidents**
Hyo Heo and In Cheol Bang(UNIST), Dong Wook Jerng(CAU)

1F

10. 29 (목)
- 30 (금)

고온가스로/중소형로 (VHTR/Small-Medium Size Reactor) – POSTER

| **좌장** 김중환(Jong-Hwan Kim), 김영인(Young In Kim)

| **발표장소** 다이아몬드(지하1층)

| **게시시간** 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| **저자 발표시간** 10월 29일(목) 13:00 ~ 15:00

- P01F01** **Uncertainty Analysis for OECD-NEA-UAM Benchmark Problem of TMI-1 PWR Fuel Assembly**
Hyuk Kwon, S. J. Kim, K.W. Seo, and D. H. Hwang(KAERI)

- P01F02** **Filling Ratio Effect on Thermal Performance of PRHRS for an Integral Reactor**
Joo Hyung Moon, Woo Shik Kim, Seo Yoon Jung, and Young In Kim(KAERI)
- P01F03** **Transient Analysis for Steam Pressurizer of Integral Reactor Using Equilibrium Formulations**
Minkyu Lee, Cheong Bong Chang, Joo Hyung Moon, Hun Sik Han, and Young In Kim(KAERI)
- P01F04** **Modeling and Simulation of the Sulfur-Iodine Process Coupled to a Very High-Temperature Gas-Cooled Nuclear Reactor**
Youngjoon Shin, Taehoon Lee, Kiyong Lee, and Minhwan Kim(KAERI)
- P01F05** **Verification of KAERI-DySCo for the Dynamic Simulation of VHTR-based SI Hydrogen Production Facilities 2: Hydriodic Acid Multistage Distillation Column Module**
Youngjoon Shin, Taehoon Lee, Kiyong Lee, and Minhwan Kim(KAERI)
- P01F06** **VHTR Construction Ripple Effect using Inter-Industry Analysis**
T. H. Lee, K. Y. Lee, and Y. J. Shin(KAERI)
- P01F07** **Impact of the Cooled-Vessel Design on the Peak Fuel Temperature of VHTR**
Ji Su Jun and Chang Keun Jo(KAERI)
- P01F08** **Cycle Average Peak Fuel Temperature Prediction Using CAPP/GAMMA+**
Nam-il Tak, Hyun Chul Lee, and Hong Sik Lim(KAERI)
- P01F09** **The Results of the Second NACEF Test**
Jong-Hwan Kim, Yoon-Yeong Bae, Chan-Soo Kim, Sung-Deok Hong, and Eung-Seon Kim(KAERI)
- P01F10** **Comparison of The Thermal Conductivity of Selected Nuclear Graphite Grades for High Temperature Gas-Cooled Reactor**
Hyun-Ju Kim, Se-Hwan Chi, Eung-Seon Kim, and Min-Hwan Kim(KAERI)
- P01F11** **KAIST-Micro Modular Reactor Steady State Modeling with GAMMA+ Code**
Bongseong Oh, Seong Jun Bae, Yoon Han Ahn, Seong Gu Kim, and Jeong Ik Lee(KAIST)
- P01F12** **Calculation of Steady-State Core Thermal-Fluid Parameters Based on CORONA**
Jun Kyu Song, Bong Hyun Cho, Nam-il Tak, Chang Joon Jeong, and Chang Keun Jo(KAERI)

1G

10. 29 (목)
– 30 (금)

경수로/연구로 (Light Water Reactor/Research Reactor) – POSTER

| 좌장 정병렬(Byung Ryul Jung), 박수기(Suki Park)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P01G01** **Preliminary Design of S-CO₂ Brayton cycle for APR-1400 with Power Generation and Desalination Process**
Seong Jun Bae, Won Woong Lee, Yong Hoon Jeong, and Jeong Ik Lee(KAIST), Ho Joon Yoon(KUSTAR)
- P01G02** **Numerical Study on POSRV Leak Detection**
Yong Sang Ko, Se Jin Baik, Yoon Jae Choe, Seok Jeong Yune, and Eun Kee Kim(KEPCO E&C)
- P01G03** **Design for Hydrostatic Bearing of Vertical Type Pnmp**
Kang Soo Kim, Sung Kyun Kim, Gyeong Hoi Koo, and Keun Bae Park(KAERI)
- P01G04** **Primary Coolant pH Control for Soluble Boron-Free PWRs**
Yang Ho Cheon, Nam Yeong Lee, Byeong Ho Park, Seong Chan Park, and Eun Kee Kim(KEPCO E&C)
- P01G05** **Safety Evaluation for the Design of Non-Safety Class Diesel Generator in KJRR**
Hagtae Kim, Jun-Yeon Kim, and Hee-Taek Chae(KAERI)
- P01G06** **Cooling Performance of Natural Circulation for a Research Reactor**
Suki Park, J. H. Chun, and S. B. Yum(KAERI)

-
- P01G07** **A Proposal on EOG Based on a Symptom-Based Approach for a Research Reactor**
Hyeonil Kim and Su-Ki Park(KAERI)
- P01G08** **A Preliminary Analysis of Reactor Performance Test (LOEP) for a Research Reactor**
Hyeonil Kim and Su-Ki Park(KAERI)
- P01G09** **Design of the Detachable Extension Shaft Assembly for KJRR**
Jin Haeng Lee, Yeon-Sik Yoo, Yeong-Garp Cho, Myoung-Han Ryou, and Jeong-Soo Ryu(KAERI)
- P01G10** **Estimation of the Void Fraction in the Moderator Cell of the Cold Neutron Source**
Jungwoon Choi and Young-ki Kim(KAERI)
- P01G11** **Drop Performance Test of CRDMs for JRTR**
Myoung-Hwan Choi, Yeong-Garp Cho, and Jong-Ha Chung(KAERI), Jung-Hyun Kim(POSCO Plantec),
Kwan-Hee Lee(RIST)
- P01G12** **Feasibility Test of NaK Filled Pressure Transducers for Sodium Test Facility**
Youngil Cho, Jong-Man Kim, Yungju Ko, Hyungmo Kim, Dongwon Lee, Chungho Cho, Min-Hwan Jung,
Jewhan Lee, Da-Young Gam, and Ji-Young Jeong(KAERI)

제2분과

원자로물리 및 계산과학 (Reactor Physics and Computational Science)

2A

10. 29 (목)

노심 해석 방법론 (Reactor Analysis Methods)

| 좌장 심형진(Hyung Jin Shim), 이덕중(Deokjung Lee)

| 발표장소 컨벤션A(지하1층)

초청발표

- 09:00 **Current Status and Future Works in Dynamic Control Rod Worth Measurement Method in KOREA**
Eun-Ki Lee and Ho-chul Shin(KHNP CRI)
- 09:30 **Neutronics/Thermo-fluid Coupled Analysis of PMR-200 Equilibrium Cycle by CAPP/GAMMA+ Code System**
Hyun Chul Lee and Nam-il Tak(KAERI)
- 10:00 **Quantitative Study of Geometrical Effect on CANDU Channel Power by Estimating Real Variance**
Eun Hyun Ryu and Yong Mann Song(KAERI)
- 10:20 **A Comparative Physics Study on Low Boron Concentration Small PWR Core Designs using Different Reflectors**
Ho Seong Yoo and Ser Gi Hong(KHU)
- 10:40 **Coffee Break**
- 11:00 **Preliminary Nuclear Analysis for the HANARO Fuel Element with Burnable Absorber**
Chul Gyo Seo, So Young Kim, and Won Ho In(KAERI)
- 11:20 **Burnable Absorber-Filled Annular UO_2 Fuels for PWR**
Mohd-Syukri Yahya and Yonghee Kim(KAIST), ChangKyu Chung(KEPCO E&C)
- 11:40 **A Comparison of Laser-induced Bremsstrahlung and Laser Compton Scattering for (γ, n) Photo-transmutation of Hazardous Nuclear Waste**
Haseeb ur Rehman, Jiyoung Lee, and Yonghee Kim(KAIST)
- 12:00 **Evaluation of Physical Characteristics of PWR Cores with Accident Tolerant Fuels**
Dae Hee Hwang and Ser Gi Hong(KHU), Wang Kee In(KAERI)

2B

10. 30 (금)

가동원자로 물리해석 (Operating Reactor Physics Analysis)

| 좌장 주한규(Han-gyu Joo), 이현철(Hyun Chul Lee)

| 발표장소 컨벤션A(지하1층)

초청발표

- 09:00 **Simulated Annealing Approach to Relaxation Optimization for Partial Current based Coarse Mesh Finite Difference Method (p-CMFD)**
Chang Je Park and Moon Ghu Park(Sejong Univ.)
- 09:30 **On the Diffusion Coefficient of Two-Step Method for LWR Analysis**
Deokjung Lee and Sooyoung Choi(UNIST), Kord S. Smith(MIT)
- 10:00 **Uncertainty Propagation Analysis for the Monte Carlo Time-Dependent Simulations**
Nadeem Shaukat and Hyung Jin Shim(SNU)
- 10:20 **Importance of All-in-one (MCNPX2.7.0+CINDER2008) Code for Rigorous Transmutation Study**
Oyeon Kum(IMSC), Kwanghyun Kim(RadTek Co.Ltd.)
- 10:40 **Coffee Break**
- 11:00 **A Derivation of Source-based Kinetics Equation with Time Dependent Fission Kernel for Reactor Transient Analyses**
Song Hyun KIM, Myeong Hyun Woo, and Chang Ho SHIN(HYU), Cheol Ho Pyeon(Kyoto Univ.)

- 11:20 Parallelization of Nonoverlapping Local/Global Iterative Method with 2-D/1-D Fusion Transport Kernel and p-CMFD Wrapper for Transient Reactor Analysis
Bumhee Cho and Nam Zin Cho(KAIST)
- 11:40 Predictor-Corrector Quasi-Static Method Applied to Nonoverlapping Local/Global Iterations with 2-D/1-D Fusion Transport Kernel and p-CMFD Wrapper for Transient Reactor Analysis
Bumhee Cho and Nam Zin Cho(KAIST)
- 12:00 An Efficient One-Node and Two-Node Hybrid CMFD Method for Pin-by-Pin Reactor Analysis
Seongho Song, Hwanyael Yu, and Yonghee Kim(KAIST)

2C 10. 30 (금)

신형원자로 핵설계 (Innovative Reactor Nuclear Design)

| 좌장 김도현(Do Heon Kim), 윤성환(Sunghwan Yun)

| 발표장소 컨벤션A(지하1층)

- 13:30 Neutron Fluence Evaluation of Reactor Internal Structure Using 3D Transport Calculation Code, RAPTOR-M3G
Maeng YoungJae, Lim MiJoung, Kim KyungSik, Cho YoungKi, Yoo ChoonSung, and Kim ByoungChul(KRIST)
- 13:50 On Error Analysis of ORIGEN Decay Data Library Based on ENDF/B-VII.1 via Decay Heat Estimation after a Fission Event
Do Heon Kim, Choong-Sup Gil, and Young-Ouk Lee(KAERI)
- 14:10 Comparison of In-Vessel Shielding Design Concepts between Sodium-cooled Fast Burner Reactor and the Sodium-cooled Fast Breeder Reactor
Sunghwan Yun and Sang Ji Kim(KAERI)
- 14:30 Analysis of Transmutation Performance in the Fast Spectrum Systems
Zafar Iqbal ZAFAR and Myung Hyun KIM(KHU)

2D 10. 29 (목) - 30 (금)

원자로물리 및 계산과학 (Reactor Physics and Computational Science) – POSTER

| 좌장 이은기(Eun Ki Lee), 조진영(Jin Young Cho)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P02D01 Reactivity Flattening for a Soluble Boron-Free Small Modular Reactor
JinHa Park, JungKil Kang, and ChangJoo Hah(KINGS)
- P02D02 Comparison of Fuel Temperature Coefficients of PWR UO_2 Fuel from Monte Carlo Codes(MCNP6.1 and KENO6)
Kyung-O KIM, Gyuhong ROH, and Byungchul LEE(KAERI)
- P02D03 Sensitivity Evaluation of Boron Meter Model
Chidong Kong, Hyunsuk Lee, and Deokjung Lee(UNIST), Si Hwan Kim and Seokjean Lyoo(Users InC.)
- P02D04 Estimation of Peaking Factor Uncertainty due to Manufacturing Tolerance using Statistical Sampling Method
Kyung Hoon Lee, Ho Jin Park, Chung Chan Lee, and Jin Young Cho(KAERI)
- P02D05 Performance Evaluation of Neutron Absorption Materials with Temperature Change
Hae Sun Jeong, Hyo Joon Jeong, Eun Han Kim, Moon Hee Han, and Won Tae Hwang(KAERI)
- P02D06 Neutron Resonance Parameters of Dysprosium Isotopes using Neutron Capture Yields
S. G. Shin, Y. U. Kye, and M. H. Cho(POSTECH), G. N. Kim(KNU), M. W. Lee and Y. R. Kang(DIRAMS), W. Namkung (PAL)
- P02D07 Isomeric Yield Ratios for the $^{nat}Ni(\gamma, xn1p)^{58m,g}Co$ Reaction Measured at 60-, 65-, 70-, and 75-MeV Bremsstrahlung Energies
H. J. Kim, S. J. Noh, H. Kim, M. W. Lee, D. H. Jeong, K. M. Yang, and Y. R. Kang(DIRAMS), T.I. Ro(Dong-A Univ.), S. G. Shin and Y. U. Kye(POSTECH), G. N. Kim(KNU)
- P02D08 A Study on the Core Design for Decreasing the Power Peaking Factor in a VHTR Core
Tae Young Han and Hyun Chul Lee(KAERI)

제3분과

방사성폐기물관리 (Radioactive Waste Management)

3A
10. 29 (목)

방사성폐기물관리 (Radioactive Waste Management)

| 좌장 최병선(Byung Seon Choi), 김종윤(Jong Yun Kim)

| 발표장소 메이플(2층)

초청발표

- 09:00 Joint Efforts for Radioactive Waste Management Safety
Sang Hoon Park(RadWorks)
- 09:30 The Way Forward for Spent Nuclear Fuel Disposal
Kim Kyung Su(KAERI)
- 10:00 Innovative Nuclear Power Plant Building Arrangement Considering Decommissioning
Choi Won Jun, Roh Myung Sub, and Kim Chang Lak(KINGS)
- 10:20 Selective Removal of Uranium from the Washing Solution of Uranium-Contaminated Soil
Seung Soo Kim, G. S. Han, G. N. Kim, D. S. Koo, J. W. Jeong, and J. W. Choi(KAERI)
- 10:40 Coffee Break
- 11:00 User Interface Technology to Reduce Mental Transformations for Tangible Remote Dismantling Simulator
Dongjun Hyun, Ikjune Kim, Jonghwan Lee, Geun-Ho Kim, Kwan-Seong Jeong, Byung-Seon Choi, Jeikwon Moon, and Jong-Won Choi(KAERI)
- 11:20 Experience on Primary System Decommissioning in José Cabrera NPP
Paloma Molleda, Leandro Sánchez, and David Rodriguez(ENSA)
- 11:40 A New Technology Developed to Remove Aqueous Radioiodine
Seung Yeop Lee and Min Hoon Baik(KAERI)
- 12:00 Development of EU-APR Initial Decommissioning Plan for EUR Design Certification
Keunsung Lee(KHNP CRI), Kyomin Lee and Sangho Kang(KEPCO E&C)

3B
10. 30 (금)

방사성폐기물관리 (Radioactive Waste Management)

| 좌장 김승수(Seung Soo Kim), 홍서기(Ser Gi Hong)

| 발표장소 메이플(2층)

초청발표

- 09:30 LILW(Low&Intermediate Level Radioactive Waste) Disposal Facility Construction & Operation
Jung Sung Tai(KORAD)
- 10:00 Criticality Evaluation of GBC-32 Cask with HBN #3 Fuels in PWR Burnup Credit
Do-Yeon Kim, Hyoungju Yoon, Kwangheon Park, and Ser Gi Hong(KHU)
- 10:20 Dynamic Response Analysis of Storage Cask Lid Structure Subjected to Lateral Impact Load of Aircraft Engine Crash
Belal Almomani and Hyun Gook Kang(KAIST), Sanghoon Lee(Keimyung Univ.)
- 10:40 Coffee Break
- 11:00 Influence of Gd-Dopant on Structural and Electrochemical Property of Uranium Dioxide
Jeongmook Lee, Jandee Kim, Young-Sang Youn, Sang-Eun Bae, Jong-Goo Kim, Yeong-Keong Ha, and Jong-Yun Kim(KAERI)
- 11:20 Preliminary Study of Single-Phase Natural Circulation for Lab-Scaled Molten Salt Application
Yukyung Shin, Sarah Kang, In Guk Kim, Seok Bin Seo, and In Cheol Bang(UNIST), Seong Dae Park(KAERI)

3C

10. 29 (목)
– 30 (금)

방사성폐기물관리 (Radioactive Waste Management) – POSTER

| 좌장 박진백(Jin Beak Park), 정종태(Jongtae Jeong)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P03C01 **A Device for Reduction of Metal Oxides Generated in Electrokinetic Separation Equipment**
Gye-Nam Kim, Seung-Soo Kim, Il-Gook Kim, Jung-Whan Jeong, and Jong-Won Choi(KAERI)
- P03C02 **Chemical Properties of Thorium Nitrate Hydrate: XPS, Raman, and SEM Studies**
Young-Sang Youn, Jeongmook Lee, Jong-Goo Kim, Jong-Yun Kim, and Yeong-Keong Ha(KAERI)
- P03C03 **Quantification and Isotope Ratio Determination of Uranium in Particles of Environmental Samples using Isotope Dilution Thermal Ionization Mass Spectrometry**
Jong-Ho Park(KAERI), Eun-Ju Choi(CNU)
- P03C04 **Depreciation Cost for the Capital Investment of a Pyroprocess Facility**
S. K. Kim, S. H. Lee, and W.I. Ko(KAERI)
- P03C05 **A Feasibility Study on the Treatment of HYBRID-D Decontamination Solution**
H. J. Won, J. Y. Jung, S. B. Kim, S. Y. Park, W. K. Choi, and J. K. Moon(KAERI)
- P03C06 **Basic Research on Selecting ISDC Activity for Decommissioning Costing in KRR-2 Decommissioning Project Experience Data**
Chan-Ho Song, Hee-Seong Park, Hyung-Gon Jin, and Seung-Kook Park(KAERI)
- P03C07 **Calculation of Radioactivity Concentration on Cover Depth of Contaminated Zone for Self-Disposal**
Daeseo Koo, Hyun-Hee Sung, Gye-Nam Kim, Seung-Soo Kim, Ilgook Kim, Gyu Seong Han, and Jong-Won Choi(KAERI)
- P03C08 **Study of Oxide Formation on Alloy 800 by Potentiostatic Polarization**
Chong Hun Jung(KAERI), M. Momeni and C. J. Wren(University of Western Ontario)
- P03C09 **Dissolution of Ce from Cd Solution Containing U/Ce Elements by Electrolysis**
Si Hyung Kim, Gha-Young Kim, Seung-jai Lee, Taek-Jin Kim, Seungwoo Paek, and Do-Hee Ahn(KAERI)
- P03C10 **Electrodeposition Behavior of U into Liquid Cd Cathode at Low Current Density**
Si Hyung Kim, Gha-Young Kim, Jun-Bo SIM, Seungwoo Paek, and Do-Hee Ahn(KAERI)
- P03C11 **TiO₂ Coated Core-Shell Nanoparticles Fabricated through Sol-Gel Reaction of Titanium Precursor on Surface of Silica Core Templates**
Suk Bon Yoon(KHNP CRI)
- P03C12 **2D Thermal Analysis of a Cask Using an Advanced Neutron Absorbing Material under Normal Condition**
Hee-Jae Lee, Mi Jin Kim, and Dong-Seong Sohn(UNIST)
- P03C13 **Comparative Analysis on the Source Term of Spent Fuel Using SCALE 5.1 and SCALE 6.1 Versions**
Zahraddeen Abbati(KAIST), Dae-sik Yook(KINS)
- P03C14 **A Study to Determine Clearance Levels of Radioactive Wastes in Kenya**
Zaphania O. Mukaka(KAIST), Sung Il Kim(KINS)
- P03C15 **Lessons Learned for Decommissioning Planning**
Wook Sohn, Young-gook Kim, and Hee-keun Kim(KHNP)
- P03C16 **Development of the Scenario-Based Training System to Reduce Hazards and Prevent Accidents during Decommissioning of Nuclear Facilities**
KwanSeong Jeong, Jong-Won Choi, JeiKwon Moon, ByungSeon Choi, Dongjun Hyun, Jonghwan Lee, IkJune Kim, GeunHo Kim, and Shin Young Kang(KAERI)
- P03C17 **National Option of China's Nuclear Energy Systems for Spent Fuel Management**
R.X. Gao(UST), W.I. Ko and S. H. Lee(KAERI)

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- P03C18** **Effect of Surface Modification of Silica Nanoparticles on Foam Stability in Decontamination Foam**
In-Ho Yoon, Chong-Hun Jung, Chorong Kim, Han-Beom Yang, Mansoo Choi, Jei-Kwon Moon, and Wang-Kyu Choi(KAERI)
- P03C19** **Status of the Decommissioning Project Management Information System Development of KAERI in 2015**
Hyung Gon Jin, S. K. Park, H. S. Park, and C. H. Song(KAERI)
- P03C20** **Removal of Uranium from Gravel Using Soil Washing Method**
Ilgook Kim, Kye-Nam Kim, Seung-Soo Kim, Dae-Seo Koo, and Jong-Won Choi(KAERI)
- P03C21** **ENVI Model Development for Korean Nuclear Spent Fuel Options Analysis**
Sunyoung Chang, Yon Hong Jeong, Jae-Jun Han, Aeri Lee, and Yong-Soo Hwang(KINAC)
- P03C22** **Dynamic Analysis of Nuclear Waste Generation Based on Nuclear Fuel Cycle Transition Scenarios**
S. R. Yoon(UST), W.I. Ko(KAERI)
- P03C23** **Design of a Requirements System for Decommissioning of a Nuclear Power Plant Based on Systems Engineering**
Hee Seong Park, Seung Kook Park, Hyung Gon Jin, Chan Ho Song, and Jong won Choi(KAERI)
- P03C24** **Analysis on the Current Status of Chemical Decontamination Technology of Steam Generators in the Oversea Nuclear Power Plants (NPPs)**
Taebin Yoon, Sukhoon Kim, Juyoul Kim, Juyub Kim, and Seunghee Lee(FNC Tech.)
- P03C25** **Effects of Gadolinium Content in the Gd-Doped UO₂ Pellet on the Corrosion Current Density**
Jandee Kim, Jeongmook Lee, Young-Sang Youn, Jong-Goo Kim, Yeong-Keong Ha, Sang-Eun Bae, and Jong-Yun Kim(KAERI), Nazhen Liub(Western Univ.)

4A

10. 29 (목)

핵연료 및 원자력재료 (Nuclear Fuel and Materials)

I 좌장 장창희(Changheui Jang), 김홍표(Hong Pyo Kim)

I 발표장소 컨벤션B(지하1층)

초청발표

- 09:00 Multiscale Modeling of Radiation Effects in Nuclear Reactor Structural Materials
Junhyun Kwon(KAERI)
- 09:30 An Overview of Irradiation Creep of Stainless Steels
Woo Seog Ryoo(KAERI)
- 10:00 Comparison between Alloy 600 and Alloy 690 ODSCC Behavior
Dong-Jin Kim, Hong Pyo Kim, and Seong Sik Hwang(KAERI)
- 10:20 Mechanical Property and Oxidation Behavior of ATF Cladding Developed in KAERI
Hyun-Gil Kim, Il-Hyun Kim, Yang-Il Jung, Dong-Jun Park, Jung-Hwan Park, Jeong-Yong Park, and Yang-Hyun Koo(KAERI)
- 10:40 Coffee Break
- 11:00 Evaluation of Fuel Performance Uncertainty in a PWR HFP RIA Analysis
Joosuk Lee and Swengwoong Woo(KINS)
- 11:20 Solid-State Welding of Ferritic-Martensitic Cladding Tubes and End-Plug by Magnetic Pulse Welding
Jin-Ju Park, Joon-Woo Song, Sung-Mo Hong, and Min-Ku Lee(KAERI), Jung Gu Lee(Univ. of Ulsan)
- 11:40 Fabrication of the Supplemental Surveillance Capsules to Construct the Data of High-dose Irradiation Embrittlement
Young Ki Cho, Young Jae Maeng, Kyung Sik Kim, Mi Joung Lim, Choon Sung Yoo, and Byoung Chul Kim(KRIST)
- 12:00 Technology Readiness Levels for the Development of Accident Tolerant Fuel Pellets
Jae Ho Yang, Hyun-Gil Kim, and Yang-Hyun Koo(KAERI)

4B

10. 30 (금)

핵연료 피복관 (Fuel Cladding)

I 좌장 김규태(Kyu Tae Kim), 김현길(Hyun Gil Kim)

I 발표장소 컨벤션B(지하1층)

초청발표

- 09:00 Review on Basic Issues in PWR Fuel Design and Manufacturing
Kyeong Lak JEON(KEPCO NF)
- 09:30 Dry Interim Storage of Spent Nuclear Fuel: Necessity and R&D Status
Yang-Hyun Koo(KAERI)
- 10:00 Effect of Fuel Rod Uncertainty on ECR Change of Zirconium Alloy
Faris B. Sweidan(KAIST), Joosuk Lee(KINS)
- 10:20 Strengthening of Zircaloy-4 using Oxide Particles by Laser Beam Treatment
Yang-Il Jung, Dong-Jun Park, Jung-Hwan Park, Jeong-Yong Park, Hyun-Gil Kim, and Yang-Hyun Koo(KAERI)
- 10:40 Coffee Break
- 11:00 Finite Element Analysis of Plate Rolling of Duplex-Layer Steels for Long-Period Fast Reactor Application
Jungki Lee and Ji Hyun Kim(UNIST)
- 11:20 Irradiation Growth Analysis by Net Defect Flux in Polycrystalline Zirconium
Sang Il Choi and Ji Hyun Kim(UNIST)

- 11:40 **A Study on Stress-Induced Hydrogen Diffusion in Zircaloy-4 Cladding**
Jin-Ho Jeong, Ji-Min Lee, and Yong-Soo Kim(HYU)
- 12:00 **TEM and XRD Analysis of Pre-Transition Oxide Formed on ZIRLO® Cladding Tube**
Hoyeon Bae and Chi Bum Bahn(PNU), Taeho Kim and Ji Hyun Kim(UNIST)

4C 원자력재료 부식 (Nuclear Materials Corrosion)

10. 30 (금) | 좌장 인왕기(Wang Kee In), 황성식(SeongSik Hwang) | 발표장소 컨벤션C(지하1층)

초청발표

- 09:00 **Research&Development Status on Material Degradation in NPP-PWSCC**
Hong Pyo Kim(KAERI)
- 09:30 **Materials Compatibility in High Temperature Super-Critical CO₂ Environment**
Changheui Jang(KAIST)
- 10:00 **Fatigue-Crack Growth Behavior of Type 347 Stainless Steels under Simulated PWR Water Conditions**
Seokmin Hong, Ki-Deuk Min, Ji-Hyun Yoon, Min-Chul Kim, and Bong-Sang Lee(KAERI)
- 10:20 **Crack Growth Rate Measurement of As-received and Warm-Rolled 316L Austenitic Stainless Steel in Primary Water Condition of Pressurized Water Reactor**
K. J. Choi, S.C. Yoo, T. Kim, and J. H. Kim(UNIST), M. J. Choi and S. S. Hwang(KAERI)
- 10:40 **Coffee Break**
- 11:00 **Corrosion Behavior of As-Received and As-Coated Ferritic/Martensitic Steel in Liquid Sodium Environment**
JeongHyeon Lee, Jung Ki Lee, and Ji Hyun Kim(UNIST), Sang Hun Shin(KAERI)
- 11:20 **In-Situ Observation of Boiling Dynamics on Fuel Cladding Surface in Non-Pressurized Water Using Acoustic Emission Method**
Kaige Wu, Seung Heon Baek, Hee-Sang Shim, Do Haeng Hur, and Deok Hyun Lee(KAERI)
- 11:40 **In-Situ Observation of Sub-Cooled Nucleate Boiling Phenomenon on Fuel Cladding Surface in High-Temperature Pressurized Water using Acoustic Emission Method**
Seung Heon Baek, Kaige Wu, Hee-Sang Shim, Deok Hyun Lee, and Do Haeng Hur(KAERI)
- 12:00 **Understanding of Early Stage Oxidation on Ni Surface Using Molecular Dynamics Simulation**
Kwang Beom Ko and Ji Hyun Kim(UNIST), Jong Jin Kim(ANL)

4D 핵연료 제조 및 성능 평가 (Fuel Fabrication and Performance Evaluation)

10. 30 (금) | 좌장 이승재(Seung Jae Lee), 이영호(YoungHo Lee) | 발표장소 컨벤션B(지하1층)

- 13:30 **On the FCMI Concern of SFR Fuel Rod**
Hyung-Kyu Kim, Hyun-Seung Lee, Kyung-Ho Yoon, and Jin-Sik Cheon(KAERI)
- 13:50 **Results of High-Temperature Heating Test for Irradiated Metallic Fuel**
June-Hyung Kim, Jin-Sik Cheon, Byoung-Oon Lee, Jun-Hwan Kim, Hee-Moon Kim, Boungh-Ok Yoo, Yang-Hong Jung, Sang-Bok Ahn, and Chan-Bock Lee(KAERI)
- 14:10 **Test Methodology of Reproducing Fuel Rod Failure by Debris Fretting Wear**
Oh Joon Kwon, Nam Gyu Park, and Jae Ik Kim(KEPCO NF)
- 14:30 **Scratch Behaviors of Cr-Coated Zr-Based Fuel Claddings for Accident-Tolerant Fuels**
Young-Ho Lee, Il-Hyun Kim, Hyun-Gil Kim, Hyung-Kyu Kim, and Yang-Hyun Koo(KAERI)
- 14:50 **Microstructure Analysis of MnO-Al₂O₃ Doped UO₂ Pellets**
Jang Soo Oh, Jae Ho Yang, Dong-Joo Kim, Jong Hun Kim, Keon Sik Kim, Young Woo Rhee, and Yang-Hyun Koo(KAERI)

- 15:10 Coffee Break
- 15:30 Thermal Conductivity Measurement and Analysis of Fully Ceramic Microencapsulated Fuel
H.-G. Lee, D. J. Kim, J. Y. Park, and W.-J. Kim(KAERI), S. J. Lee(KEPCO NF)
- 15:50 Fabrication of Micro-cell UO_2 Pellet for HALDEN Irradiation Test
Dong-Joo Kim, Keon Sik Kim, Jong Hun Kim, Young Woo Rhee, Jang Soo Oh, JaeHo Yang, and Yang-Hyun Koo(KAERI)
- 16:10 In-Situ Observation of Sintering Shrinkage of UO_2 Compacts Derived from Different Powder Routes
Young Woo Rhee, Jang Soo Oh, Dong Joo Kim, Keon Sik Kim, Jong Hun Kim, Jae Ho Yang, and Yang Hyun Koo(KAERI)

4E 10. 30 (금)

원자력재료 경년열화/신뢰성 평가 (Nuclear Materials Degradation/Reliability Evaluation)

| 좌장 이봉상(Bong Sang Lee), 김진원(Jin Weon Kim)

| 발표장소 컨벤션C(지하1층)

- 13:30 Recent Progress in Research on Structural Integrity of Reactor Pressure Vessel - Focusing on PVP Conference Papers
Jong-Min Kim and Bong-Sang Lee(KAERI)
- 13:50 Development of OKMC Perturbation Algorithm for Sensitivity Analysis of Irradiation Damage Calculation
Yong Hee Choi and Hyung Jin Shim(SNU)
- 14:10 A Comparison of PFM Codes for Analyzing Structural Reliability of Components
Md Nasimul Goni, Seung Hyun Kim, and Yoon-Suk Chang(KHU), Changheui Jang(KAIST)
- 14:30 Microstructural, Micro-Hardness and Sensitization Evaluation in HAZ of Type 316L Stainless Steel Joint with Narrow Gap Welds
Faisal Shafiqul Islam and Changheui Jang(KAIST), Suk-Chull Kang(KINS)
- 14:50 Long-Term Creep Life Prediction and Its Reliability on HAZ Failure Data of Grade 91 Steel
Woo-Gon Kim and Jinsung Jang(KAERI), Jae-Young Park(PKNU)
- 15:10 Coffee Break
- 15:30 Computational Study of α - α' Separation Behavior of Thermal Aging Neutron-Irradiated Fe-Cr Alloy Using the Phase-Field Method
Kunok Chang and Junhyun Kwon(KAERI)
- 15:50 Thermal Embrittlement of Reactor Pressure Vessel Steel Due to Aging
SungSoo Kim and Duck-Gun Park(KAERI)
- 16:10 Mechanical Properties of Refractory High Entropy Alloys Fabricated by Powder Processing
Seoung Woo Kuk and Ki Hwan Kim(KAERI), Woo Jin Lim, Byung Chul Kang, Soon Hyung Hong, and Ho Jin Ryu(KAIST)

4F 10. 29 (목) - 30 (금)

경수로 핵연료 (PWR Fuel) – POSTER

| 좌장 장영기(Young Ki Jang), 김준환(Jun Hwan Kim)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P04F01 A Eutectic Melting Study of Double Wall Cladding Tubes of FeCrAl and Zircaloy-4
Woojin Lim, Seongmin Son, You Ho Lee, Jeong Ik Lee, and Ho Jin Ryu(KAIST), Eun Jeong(KHU)
- P04F02 Impact Velocity Estimation of 3x3 Rod Bundle in Water Condition
Oh Joon Kwon, Nam Gyu Park, and Jae Ik Kim(KEPCO NF)
- P04F03 Corrosion Resistance Evaluation of Zr-Alloys Claddings in Commercialized PWR
Kyung-Tae Kim, Hye-In Shin, Yoon-Ju Choe, Hong-Jin Kim, and Yong-Hwan Kim(KEPCO NF)
- P04F04 Development of Crush Test Technique for Irradiated Spacer Grid
S. G. Kim, H. S. Sea, I. C. Kwon, H. M. Kwon, J. N. Jang, D. S. Kim, and Y. B. Chun(KAERI)

- P04F05** **The Effect of Variable Oxygen Buffer Gas on Microstructure Development in Cr₂O₃ Added UO₂**
Tae-sik Jung, Seung-jae Lee, Jae-ik Kim, Yeon-soo Na, Kwang-young Lim, Young-ho Jo, Bo-yong Park, and Sang-ern Ko(KEPCO NF)
- P04F06** **Improvement of Measurement Accuracy of Coolant Flow in a Test Loop**
Jintae Hong, Jong-Bum Kim, Chang-Young Joung, Sung-Ho Ahn, Sung-Ho Heo, and Seoyun Jang(KAERI)
- P04F07** **Analyses on Silicide Coating for LOCA Resistant Cladding**
Faris B. Sweidan, You Ho Lee, and Ho Jin Ryu(KAIST)
- P04F08** **FALCON Code Simulation for Verification of Fuel Preconditioning Guideline**
Hee-Hun Lee, Oh-Hyun Kwon, Hong-Jin Kim, and Yong-Hwan Kim(KEPCO NF)
- P04F09** **Primary System Conditioned Corrosion Experiment of SiC_f/SiC Composite Metal Cladding**
Donghee Lee and Kwangheon Park(KHU), Weonju Kim, Jiyeon Park, Daejong Kim, and Hyeon-geun Lee(KAERI)
- P04F10** **Development of Silicide Coating on Molybdenum Alloy Cladding**
Woojin Lim and Ho Jin Ryu(KAERI)
- P04F11** **Microstructural and Mechanical Characterization Study of Cr Coated ATF Claddings After Simulated Integral LOCA Test**
Dong Jun Park, Jung Hwan Park, Yang Il Jung, Hyun Gil Kim, Jeong Yong Park, and Yang Hyun Koo(KAERI)
- P04F12** **A Study on the Guide Tube Shrinkage Characteristics by Bulge Joint**
Su-Pil Ryu, Dong-Geun Ha, Sang-Youn Jeon, and Jae-ik Kim(KEPCO NF)
- P04F13** **A Study on Fretting Wear Property of CVD SiC and Sintered SiC**
Hyun-Jin Cha, Ki-Nam Jang, Ji-Hyeong An, and Kyu-Tae Kim(DU)
- P04F14** **Seismic Shaking Table Requirements and Consideration of Fluid-Structure Interaction Effect in Seismic Response Analysis Model for In-Reactor Fuel Assembly Under Severe Earthquake Accident**
Kanghee Lee, Kyungho Yoon, Heungsoek Kang, Youngho Lee, and Hyungkyu Kim(KAERI)
- P04F15** **A Study on the Dynamic Analysis of the Nuclear Fuel Test Rig Using 1-Way Fluid-Structure Coupled Analysis**
Tae-Ho Yang, Jintae Hong, Sung-Ho Ahn, Chang-Young Joung, Sung-Ho Heo, and Seo-Yun Jang(KAERI)

4G

10. 29 (목)
– 30 (금)

미래형 핵연료 (Generation – IV Reactor Fuel) – POSTER

| 좌장 서정민(Jung Min Suh), 김용덕(Yong Deok Kim)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P04G01** **Feasibility Study on the Sodium Compatibility Test for Fuel Cladding of SFR**
Jun Hwan Kim, Sang Hun Shin, Sang Gyu Park, Woo Seog Ryu, and Sung Ho Kim(KAERI)
- P04G02** **An Estimation of Gas Pressure in a TRISO of 350 MW_{th} Block-Type HTR**
Young Min Kim, C. K. Jo, and M. S. Cho(KAERI)
- P04G03** **Fabrication of SiC Reinforced ZrO₂ Composites via Polymeric Precursor Route**
Qusai M. Mistarihi, Soon Hyung Hong, and Ho Jin Ryu(KAIST)
- P04G04** **The First Irradiation Testing of TRISO-Coated Particle Fuel and Graphite Specimens in HANARO**
B. G. Kim, S. Yeo, K. C. Jeong, S. H. Eom, Y. K. Kim, Y. W. Lee, and M. S. Cho(KAERI)
- P04G05** **CFD Analysis of Turbulent Flow in Nose Piece for SFR Fuel Assembly**
Yeong Shin Jeong(UNIST), Wang Kee In, Kyoung Ho Yoon, and Jin Sik Cheon(KAERI)
- P04G06** **Experimental Setup with Transient Behavior of Fuel Cladding of SFR**
Sang Hun Shin, Jun Hwan Kim, June-Hyung Kim, Woo Seog Ryu, Sang Gyu Park, and Sung Ho Kim(KAERI)
- P04G07** **A Preliminary Study for Diffusion Experiments of Metallic Fission Products in Graphite for HTGR**
Je-Kyun Baek, Qusai Mistarihi, and Ho Jin Ryu(KAIST), Sunghwan Yeo and Young Woo Lee(KAERI)
- P04G08** **Comparison of Theoretical Models and Finite Element Simulation of ZrO₂-based Composites for Inert Matrix Fuel**
Vivek Raj(IIT), Qusai M. Mistarihi and Ho Jin Ryu(KAIST)

- P04G09 **End Plug Welding of New FM Cladding Tube for SFR Metallic Fuel Rod**
Jung Won Lee, Yoon Myeng Woo, Hyung Tae Kim, Ki Hwan Kim, and Sung Ho Kim(KAERI)
- P04G10 **Dimensional Behavior of Matrix Graphite Compacts during Heat Treatments for HTGR Fuel Element Fabrication**
Young-Woo Lee, Seunghwan Yeo, and Moon Sung Cho(KAERI)
- P04G11 **Thermal Analysis of KAERI TRISO Fuel Irradiation at HANARO**
Moon-Sung Cho, B. G. Kim, and S. W. Yang(KAERI)
- P04G12 **Manufacture of LVDT Core for Nuclear Fuel Test**
Sung-Ho Heo, Tae-Ho Yang, Jintae Hong, Chang-Young Joung, Sung-Ho Ahn, and Seoyun Jang(KAERI)
- P04G13 **Volatile Elements Retention During Injection Casting of Metallic Fuel Slug for a Recycling Fast Reactor**
Jong-Hwan Kim, Hoon Song, Hyung-Tae Kim, Seok-Jin Oh, Seoung-Woo Kuk, Chang-Woon Keum, Jung-Won Lee, Ki-Hwan Kim, and Chan-Bock Lee(KAERI)

4H

10. 29 (목)
- 30 (금)

원자력재료 (Nuclear Materials) – POSTER

| **좌장** 김태규(Tae Kyu Kim), 홍진기(Jin Ki Hong)

| **발표장소** 다이아몬드(지하1층)

| **게시시간** 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| **저자 발표시간** 10월 29일(목) 13:00 ~ 15:00

- P04H01 **Application of a Magnetostrictive Guided wave Technique to Monitor the Evolution of Defect Signals**
Yong-Moo Cheong, Se-Beom Oh, and Duck-Hyun Lee(KAERI)
- P04H02 **Development of IASCC Test Facility for Neutron-irradiated Materials**
S. W. Kim, D. J. Kim, and S. S. Hwang(KAERI)
- P04H03 **Physical, Thermal, Magnetic and Mechanical Properties of ARAA**
Y. B. Chun, D. W. Lee, and C. K. Rhee(KAERI), S. Cho(NFRI)
- P04H04 **Development of an Electroplating Method Using the Emulsion Under Supercritical CO₂**
Jeongmin Choi, Kwangheon Park, and Sungwoo Ha(KHU)
- P04H05 **The Effect of Thermal Treatment on Mechanical Property of Alloy 690 Tubes**
Ki-Nam Jang, Hyun-Jin Cha, Ji-Hyeong An, and Kyu-Tae Kim(DU)
- P04H06 **PFM Analysis for Pre-Existing Cracks on Alloy 182 Weld in PWR Primary Water Environment using Monte Carlo Simulation**
Jae Phil Park and Chi Bum Bahn(PNU)
- P04H07 **Vertically-Driven Very High Speed Planetary Milling Apparatus for the Fabrication of Oxide Dispersion Strengthen Steel**
Jin-Ju Park, Sung-Mo Hong, Eun-Kwang Park, and Min-Ku Lee(KAERI)
- P04H08 **Crack Propagation Behaviors of Multi-Layered SiC Composite Tubes**
Daejong Kim, Donghee Lee, Hyeon-Geun Lee, Ji Yeon Park, and Weon-Ju Kim(KAERI)
- P04H09 **Bayesian Model on Fatigue Crack Growth Rate of Type 304 Stainless Steel**
Sanhae Choi, Jae Young Yoon, and Il Soon Hwang(SNU)
- P04H10 **Effects of High-Energy Proton-Beam Irradiation on the Magnetic Properties of ZnO Nanorods**
Jun Kue Park, Hyeok-Jung Kwon, and Yong Sub Cho(KAERI)
- P04H11 **Laser Welding Test Results with Gas Atmospheres in Welding Chamber**
Chang-Young Joung, Jin-Tae Hong, Sung-Ho Ahn, Sung-Ho Reo, Seo-Yun Jang, and Tae-Ho Yang(KAERI)
- P04H12 **Finite Element Analysis for Bending Process of U-Bending Specimens**
Won Dong Park and Chi Bum Bahn(PNU)
- P04H13 **Microstructure Characterization and Hardness Evaluation of Alloy 52 Welded Stainless Steel 316 Subjected to Ultrasonic Nanocrystal Surface Modification Technique**
H. D. Kim, A. Amanov, and Y. S. Pyun(SMU), Y. S. Kim and Y. S. Choi(ANU)

제5분과

원자력열수력 및 안전 (Thermal Hydraulics and Safety)

5A
10. 29 (목)

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

| 좌장 안승훈(Seung-Hoon Ahn), 하상준(Sang Jun Ha)

| 발표장소 다이너스티(지하 2층)

초청발표

- 09:00 **A Validation of Subchannel Based CHF Prediction Model for Rod Bundles**
Dae-Hyun Hwang and Seong-Jin Kim(KAERI)
- 09:30 **An Overview of the MARS and CUPID Code Development: Numerical Aspect**
Jae Jun Jeong(PNU)
- 10:00 **An Implicit Numerical Method for the Simulation of Two-phase Flow**
Han Young Yoon and Seung-Jun Lee(KAERI), Jae Jun Jeong(PNU)
- 10:20 **Effect of Bubble Influence Area Factor on Wall Heat Flux Partitioning in CUPID Simulation of SUBO Experiment**
Y. J. Cho and H. Y. Yoon(KAERI)
- 10:40 **Coffee Break**
- 11:00 **Numerical Study of Thermal Hydraulics for Secondary Side of Steam Generator by CUPID/MARS Coupled Simulation**
Jae Ryong Lee and Han Young Yoon(KAERI)
- 11:20 **Analysis of Wall film Condensation with CUPID in the Presence of Non-Condensable Gases**
Jehee Lee and Hyoung Kyu Cho(SNU), Han Young Yoon(KAERI)
- 11:40 **Modeling of Wall Effects on Drag and Lift Acting on Bubbles in Turbulent Bubbly Pipe Flows**
Jungwoo Kim(Seoultech), Dongjoo Kim(KIT)
- 12:00 **On the Partitioning of Wall Heat Flux in Subcooled Flow Boiling**
Nhan Hien Hoang, In-Cheol Chu, Dong-Jin Euh, and Chul-Hwa Song(UST)

5B
10. 29 (목)

중대사고 - I (Severe Accident - I , In-Vessel FCI)

| 좌장 박중운(Jong Woon Park), 배준호(Jun Ho Bae)

| 발표장소 에메랄드(2층)

초청발표

- 09:00 **Introduction to Final Results of OECD SERENA Project on Steam Explosion**
Seong-Wan Hong(KAERI), Pascal Piluso(CEA), Sudhamy Basu(USNRC)
- 09:30 **Validation of Melting Computation Method for Reactor Vessel Ablation under External Reactor Vessel Cooling Conditions**
Hyuk-Jin Song and Jong-Woon Park(DU)
- 10:00 **Natural Convection Heat Transfer of a Mixture Layer During In-Vessel Retention of Core Melts**
Hae-Kyun Park and Bum-Jin Chung(KHU)
- 10:20 **Effect of In-Vessel Retention Strategies under Postulated SGTR Accidents of OPR1000**
Wonjun Choi, Yongjae Lee, and Sung Jeong Kim(HYU), Hwan-Yeol Kim and Rae-Joon Park(KAERI)
- 10:40 **Coffee Break**
- 11:00 **Sensitivity Analysis of Penetration Tube Ejection Model for APR 1400**
Jaehoon Jung, Sang Mo An, Kwang Soon Ha, and Hwan Yeol Kim(KAERI)

- 11:20 Experimental Investigation on the APR1400 In-Core Instrumentation Penetration Failure
Sang Mo An, Jaehoon Jung, and Hwan Yeol Kim(KAERI)
- 11:40 Visual Study of Heat Removal Characteristics for IVR-ERVC Cooling System Using Oil Flooding Concept
Hyo Heo, Min Ho Lee, and In Cheol Bang(UNIST), Seong Dae Park(KAERI)
- 12:00 Influence of Improved Melt Breakup Model in Steam Explosion Simulation
Kiyofumi Moriyama and Hyun Sun Park(POSTECH)

5C

10.29 (목)

확률론적안전성평가 – I (PSA I – Post – Fukushima Actions)

| 좌장 황태석(Taesuk Hwang), 김만철(Man Cheol Kim)

| 발표장소 루비(2층)

초청발표

- 09:00 Safety Goal, Multi-unit Risk and PSA Uncertainty
Joon-Eon Yang(KAERI)
- 09:30 The Use of Importance Measures for Quantification of Multi-Unit Risk
Seung-Cheol Jang and Ho-Gon Lim(KAERI)
- 10:00 Study on Quantification for Multi-Unit Seismic Psa Model Using Monte Carlo Sampling
Kyemin Oh, Sang Hoon Han, Seung-cheol Jang, Jin Hee Park, and Ho-Gon Lim(KAERI), Gyunyoung Heo(KHU)
- 10:20 The Evaluation of CDF Considering with the External Cooling Water Injections
Ho-Chang Yang, Hyung-Jin Kim, and Seong-Soo Choi(ACT CO.,Ltd.)
- 10:40 Coffee Break
- 11:00 Evaluation of CFVS Mitigative Effects in Level2 PSA of Wolsong NPP 1
Se-Hoon Oh, Ho-Chang Yang, Hyung-Jin Kim, and Seong-Soo Choi(ACT CO.,Ltd.)
- 11:20 Pilot Application of an Integrated Accident Sequence Analysis for a Loss of Coolant Accident in a PSA Model
Ho-Gon Lim, Sang-Hoon Han, and Jin-Hee Park(KAERI)
- 11:40 Examination of Conservatism in Ground-level Source Release Assumption when Performing Consequence Analysis
Sung-yeop Kim and Ho-Gan Lim(KAERI)
- 12:00 Development of a PSA-Based Loss of Large Area Analysis Method
Mee Jeong Hwang(KAERI), Woosik Jung(Sejong Univ.), Myungsu Kim(KHNP CRI)

5D

10.29 (목)

안전현안 (Safety Issues)

| 좌장 방영석(Young Seok Bang), 서정관(Jeong-kwan Suh)

| 발표장소 마호가니(2층)

초청발표

- 09:00 Evaluation of the In-vessel Downstream Effects for the APR 1400 Design and License
Jeong-kwan Suh, Jae-won Kim, Sun-guk Kwon, and Jae-yong Lee(KHNP CRI)
- 09:30 Considerations for Developing Regulatory Guide for the Accident Analyses Employing Advanced Safety Features
Suk K. Sim and Min Jeong Hwang(EN2T), Young Seok Bang, Kap Kim, Sweng Woong Woo, and Taesuk Hwang(KINS)
- 10:00 A Proposal to Upgrade KREM with Respect to Scale and Code Deficiency
Sang Yong Lee(KINGS)
- 10:20 Analysis of Post-LOCA Core Inlet Blockage to Evaluate In-vessel Downstream Effect in APR1400
Young Seok Bang(KINS)
- 10:40 Coffee Break

- 11:00 **Sensitivity Studies for 3-D Rod Ejection Analyses on Axial Power Shape**
Min-Ho Park, Jin-Woo Park, Guen-Tae Park, Seok-Hee Ryu, Kil-Sup Um, and Jae-Il Lee(KEPCO NF)
- 11:20 **Sensitivity Analysis for Iodine Spiking Effect on Main Steam Line Break in Westinghouse Type Nuclear Power Plants**
Seung Chan Lee, Duk Joo Yoon, and Dong Soo Song(KHNP CRI)
- 11:40 **Evaluation to Mitigate Secondary System Peak Pressure for Loss of Condenser Vacuum Event**
Bong Oh Choi, Jong Cheol Park, Min Soo Park, Gyu Cheon Lee, and Shin Whan Kim(KEPCO E&C)
- 12:00 **Analysis on the LODHR Event During Refueling Pool Operation**
Dong Hyun Cho, Jae Young Huh, Gyu Cheon Lee, and Shin Whan Kim(KEPCO E&C)

5E 열수력해석- II (TH Analysis- II , Multi-dimensional Analysis)

10. 30 (금) | 좌장 엄길섭(Kil-Sup Um), 이규천(Gyu Cheon Lee) | 발표장소 다이너스티(지하 2층)

초청발표

- 09:00 **Multi-dimensional LOCA Analysis, Status and Perspective**
Sang Yong Lee(KINGS)
- 09:30 **Recent Developments of the SPACE Code**
Kyung Doo Kim, S. W. Lee, S. W. Bae, B. J. Kim, J. S. Heo, J. H. Lee, B. U. Bae, and B. D. Chung(KAERI)
- 10:00 **Flow Mixing Behaviors in a Reactor**
Tae-Soon Kwon(KAERI)
- 10:20 **Assessment of RANS Based CFD Methodology Using JAEA Experiment with a Wire-wrapped 127-pin Fuel Assembly**
J. H. Jeong, J. Yoo, K. L. Lee, and K. S. Ha(KAERI)
- 10:40 **Coffee Break**
- 11:00 **Computational Fluid Dynamics Simulations of TOPFLOW-Pressurized Thermal Shock**
Yonghwy Kim(FNC Tech.), Sagar Deshpande and Bojan Niceno(PSI)
- 11:20 **Multi-Dimensional Analysis for SLB Transient in ATLAS Facility as Activity of DSP(Domestic Standard Problem)**
B. U. Bae, Y. S. Park, J. R. Kim, K. H. Kang, and K. Y. Cho(KAERI), H. J. Sung(KEPCO NF), M. J. Hwang(EN2T)
D. H. Kang(SENTECH), S. G. Lim(KHNP CRI), S. S. Jun(FNC)
- 11:40 **Cooling Performance Evaluation of the Hybrid Heat Pipe for Spent Nuclear Fuel Dry Storage Cask**
Yeong Shin Jeong and In Cheol Bang(UNIST)
- 12:00 **OpenFOAM Analysis of CANDU-6 Moderator Flow**
Hyoung Tae Kim(KAERI), Se-Myong Chang(KNU)

5F 중대사고- II (Severe Accident- II , Fission Product)

10. 30 (금) | 좌장 하광순(Kwang-Soon Ha), 김성중(Sung Joong Kim) | 발표장소 에메랄드(2층)

초청발표

- 09:00 **A Study on Fission Product Behavior during a Severe Accident at APR1400 Nuclear Power Plants**
Han-Chul KIM(KINS), Song-Won Cho(KAERI)
- 09:30 **Code Development on Aerosol Behavior under Severe Accident-Aerosol Coagulation**
Kwang Soon Ha, Song Il Kim, and Eun-Hyun Ryu(KAERI)
- 10:00 **Changes in the Decontamination Factor of Cesium Iodide on Evaporation of a Scrubbing Solution in the Filtered Containment Venting System**
Young Su Na, Kwang Soon Ha, Sungil Kim, and Song-Won Cho(KAERI)
- 10:20 **Code Development of Radioactive Aerosol Scrubbing in Pool- Injection Zone**
Hyun Joung Jo and Kwang Soon Ha(KAERI), Dong Soon Jang(CNU)

10:40	Coffee Break
11:00	Severe Accident Analysis for Combustible Gas Risk Evaluation inside CFVS NaRae Lee, JinYong Lee, YoungSuk Bang, and DooYong Lee(FNC Tech.), HyeongTaek Kim(KHNP CRI)
11:20	Radiation Shielding Analysis for CFVS Operation Min Hwa Kim, Young Suk Bang, and Doo Yong Lee(FNC Tech.)
11:40	Effect of RCIC Operating Conditions on the Accident Scenario in Fukushima Unit 2 Sung Il Kim, Jong Hwa Park, and Kwang Soon Ha(KAERI)
12:00	Development of MAAP5.0.3 Spent Fuel Pool Model for Severe Accident Analysis Mi Ro Seo(KHNP CRI)

5G 10.30 (금)

확률론적안전성평가- II (PSA II – Application and Insights)

I 좌장 석호(Ho Seok), 허균영(Gyunyoung Heo)

I 발표장소 루비(2층)

초청발표	
09:00	Small Numbers and Use of PSA Moosung Jae(HYU)
09:30	Examination of Post-Fukushima Action Items for Korean NPPs from Multi-Unit Dependency Perspective Kyung Jin Kim, Chul Kyu Park, and Seung Jong Oh(KINGS)
10:00	Accident Sequence Analysis for PSA Update of OPR (Hanul 3&4): Results and Insights Jin Hee Park, Dong-San Kim, Jae Hyun Cho, and Joon-Eon Yang(KAERI)
10:20	An Initiating-Event Analysis for PSA of Hanul Units 3&4: Results and Insights Dong-San Kim and Jin Hee Park(KAERI)
10:40	Coffee Break
11:00	Internal Flooding PSA Reevaluations Using the EPRI Guideline Yoon-Hwan Lee, Jaewhan Kim, Jin-Hee Park, and Ho-Gon Lim(KAERI)
11:20	Success Criteria Analysis for PSA of Hanul Units 3&4: Results and Insights Jaehyun Cho, Jin Hee Park, Dong-San Kim, and Ho-Gon Lim(KAERI)
11:40	Sensitivity Analysis on LOCCW of Westinghouse Typed Reactors Considering WOG2000 RCP Seal Leakage Model Jang-Hwan Na, Ho-Jun Jeon, and Seok-Won Hwang(KHNP CRI)
12:00	Risk Analyses of Charging Pump Control Improvements for Alternative RCP Seal Cooling Eun-Chan Lee(KHNP CRI)

5H 10.30 (금)

열수력 실험 I (Thermalhydraulic Experiments I)

I 좌장 이재영(Jaeyoung Lee), 문상기(Sang-Ki Moon)

I 발표장소 마호가니(2층)

초청발표	
09:00	Experimental Results of A1.1 Test for OECD-ATLAS Project Kyoung-Ho Kang, Byoung-Uhn Bae, Yu-Ssun Park, Jong-Rok Kim, Nam-Hyun Choi, Ki-Yong Choi(KAERI)
09:30	Model Heater Design for the Experimental Simulation of Nuclear Reactor Core Soon-Joon HONG and Yong-Hwy KIM(FNC Tech.), Jewhan LEE and Jae-Hyuk EOH(KAERI)
10:00	Domestic Activity for Technical Development of the APR1400's RCP Performance Test Seok Cho, Seok Kim, Byung-Uhn Bae, Yun-Jae Cho, Yeon-Sik Kim, Woo-Jin Jeon, and Young-Jung Yun(KAERI)

- 10:20 **Review of the Safety Concern Related to CANDU Moderator Temperature Distribution and Status of KAERI Moderator Circulation Test (MCT) Experiments**
Bo W. Rhee and Hyoung T. Kim(KAERI), Tongbeum Kim(Witwatersrand Univ.), Sunghyuk Im(KAIST)
- 10:40 **Coffee Break**
- 11:00 **Onset of Nucleate Boiling in Rectangular Channels under Low Pressure**
Jung Hyun Song, Juhyung Lee, and Yong Hoon Jeong(KAIST), Soon Heung Chang(HGU)
- 11:20 **Heat Removal Performance of Hybrid Control Rod for Passive In-Core Cooling System**
Kyung Mo Kim, Yeong Shin Jeong, In Guk Kim, and In Cheol Bang(UNIST)
- 11:40 **Thermal-Hydraulic Effects of Stud Shape and Size on the Safety Margin of Core Catcher System**
Kysang Song, Hong Hyun Son, Uiju Jeong, and Sung Joong Kim(HYU)
- 12:00 **Thermal Behavior of a Single Spent Fuel in Water Pool Storage Under Partially Uncovered Condition**
Woo Ram Lee, Hee Sung Park, Sub Lee Song, and Jae Young Lee(HGU)

5I
10. 30 (금)

열수력해석 – III (TH Analysis III, System Analysis)

| 좌장 배성원(Sung-won Bae), 박익규(Ik Kyu Park)

| 발표장소 다이너스티(지하2층)

- 13:30 **A Proposed Correlation for Critical Flow Rate of Steam/Water Flow**
Y. S. Kim, H. S. Park, S. Cho, K. Y. Choi, K. H. Kang, S. J. Yi, W. J. Jeon, and N. H. Choi(KAERI)
- 13:50 **Prediction of Heat Transfer Performance on Horizontal U-Shaped Heat Exchanger in Passive Safety System Using MARS**
Seong-Su Jeon and Soon-Joon Hong(FNC Tech.), Hyoung-Kyu Cho and Goon-Cherl Park(SNU)
- 14:10 **Assessment of Flow Instability in Passive Auxiliary Feedwater System (PAFS) Using RELAP5**
Seong-Su Jeon and Soon-Joon Hong(FNC Tech.), Jong Cheon and Han-Gon Kim(KHNP)
- 14:30 **A New SPACE Modeling Method for FD-SIT**
In-Hun Kim, Tong-Soo Choi, and Jae Il Lee(KEPCO NF)
- 14:50 **Pre-test Analysis of ATLAS SBO with RCP Seal Leakage Scenario Using MARS Code**
Quang Huy Pham, Sang Young Lee, and Seung Jong Oh(KINGS)
- 15:10 **Coffee Break**
- 15:30 **New Condensation Correlation Test of TASS/SMR-S Code for PRHRS**
Hyungjun Kim, Young-Jong Chung, Hyungrae Kim, and Kyoo-Hwan Bae(KAERI)
- 15:50 **Analytical Study of the Optimum Operation Strategy for an Hybrid-SIT in SBO**
In Seop Jeon and Hyun Gook Kang(KAIST)
- 16:10 **Improved Fast Fourier Transform Based Method for Code Accuracy Quantification**
Tae Wook Ha and Jae Jun Jeong(PNU), Ki Yong Choi(KAERI)
- 16:30 **Preliminary Analysis on Heat Removal Capacity of Passive Air-Water Combined Cooling Heat Exchanger Using MARS**
Seung-Sin Kim, Seong-Su Jeon, and Soon-Joon Hong(FNC Tech.), Sung-Won Bae and Tae-Soon Kwon(KAERI)

5J
10. 30 (금)

중대사고 – III (Severe Accident – III, Ex-Vessel)

| 좌장 박현선(Hyun Sun Park), 김종태(Jongtae Kim)

| 발표장소 에메랄드(2층)

- 13:30 **Local Void Fraction Distribution and Flow Visualization in Core Catcher Coolant Channel**
K. W. Song, N. T. Hung, H. S. Park, and S. T. Revankar(POSTECH), K. S. Ha and J. H. Song(KAERI)
- 13:50 **Cavity Structural Integrity Evaluation of Steam Explosion Using LS-DYNA**
Dae-Young Lee and Chang-Hwan Park(FNC Tech.), Kap-sun Kim(KHNP CRI)

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- 14:10 **Comparison of Debris Dispersal Correlations for HPME/DCH Modeling**
JaeGwon Lee and Youngsuk Bang(FNC Tech.)
 - 14:30 **A Suggestion of a New Strategy Coping with MCCI for Shin-kori 5 and 6**
Hanbee Na, Taehoon Kim, and Kyuntae Kim(KINS), Sejin Kwon(KAIST)
 - 14:50 **Internal Structure of an Ex-Vessel Corium Debris Bed during Severe Accidents of LWRs**
Eunho Kim, Jin Ho Park, Kiyofumi Moriyama, and Hyun Sun Park(POSTECH)
 - 15:10 **Coffee Break**
 - 15:30 **Experimental Investigation of the Effect of Spherical Particle Size Distribution on Frictional Pressure Drop in Particulate Debris Bed**
Jin Ho Park, Eunho Kim, and Hyun Sun Park(POSTECH)
 - 15:50 **Turbulence-resolved Numerical Simulation for Hydrogen Safety in a NPP Containment**
Jongtae Kim and Seong-Wan Hong(KAERI)
 - 16:10 **Progress Modelling of Aqueous Electrons and Hydroxyl Radicals in RAIM Code**
A Yeong Kim, Han-Chul Kim, and Jongseong Lee(KINS)
 - 16:30 **Preliminary COM3D Analysis for H₂ Combustion in the APR1400 Containment**
Hyung Seok Kang, Jongtae Kim, Sang-Baik Kim, and Seong-Wan Hong(KAERI)
 - 16:50 **CFD Analysis of the Hydrogen/Steam Behavior in the OECD-NEA THAI Test HM-2 Experiment**
Se-Hong Oh and Choengryul Choi(ELSOLTEC), Yong-Jin Cho, Seongnyeom Lee, and Jung-Jae Lee(KINS)
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5K
10. 30 (금)

확률론적안전성평가 – Ⅲ (PSA Ⅲ – Advanced Technologies)

| 좌장 정우식(Woo Sik Jung), 임호곤(Ho Gon Lim)

| 발표장소 루비(2층)

-
- 13:30 **A Quantitative Feasibility Study on Potential Safety Improvement Effects of Advanced Safety Features in APR-1400 when Applied to OPR-1000**
Ualikhan Zhiyenbayev(KAIST), Dae Wook Chung(KINS)
 - 13:50 **Development of a Cutset Factorization Method to Minimize Cutset Structure**
Woo Sik Jung(Sejong Univ.)
 - 14:10 **Modeling Sequence Timing, Technical Specification, and Code Parameter Uncertainties in Success Criteria Definition with Gaussian Process Model**
Douglas A. Fynan and Kwang-Il Ahn(KAERI)
 - 14:30 **Multi-compartment Fire Modeling for Switchgear Room Using CFAST**
Kiyoon Han, Dae Il Kang, and Ho Gon Lim(KAERI)
 - 14:50 **An Estimation of Operator's Diagnostic Time for Feed-And-Bleed Operation under Various Scenarios**
Bo Gyung Kim and Hyun Gook Kang(KAIST), Ho Joon Yoon(KUSTAR)
 - 15:10 **Coffee Break**
 - 15:30 **Task Analysis of Emergency Operating Procedures for Generating Quantitative HRA Data**
Yochan Kim, Jinkyun Park, Seunghwan Kim, Sun Yeong Choi, Wondea Jung, and Inseok Jang(KAERI)
 - 15:50 **Estimation of Remained Defects in a Safety-Critical Software using Bayesian Belief Network of Software Development Life Cycle**
Seung Jun Lee and Wondea Jung(KAERI)
 - 16:10 **Fault-Tree Modeling of Safety-Critical Network Communication in a Digitalized Nuclear Power Plant**
Sang Hun Lee and Hyun Gook Kang(KAIST)
 - 16:30 **Visualizing the Characteristics of a Work Process Being Observed from the Main Control Room of Nuclear Power Plants-Identifying Underlying Requirements**
Jinkyun Park and Wondea Jung(KAERI)
 - 16:50 **Seismic Risk of the Base Isolation System Protected by the Hard Stop**
Jung Han Kim, In-Kil Choi, and Min Kyu Kim(KAERI)
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5L
10. 30 (금)

열수력 실험 II (Thermalhydraulic Experiments II)

| 좌장 최기용(Ki-Yong Choi), 방인철(In Cheol Bang)

| 발표장소 마호가니(2층)

- 13:30 **Pining Phenomena of an Evaporated Droplet on the Hydrophobic Micro-Textured Surfaces**
Dong In Yu, Ho Jae Kwak, Seung Woo Doh, Hyun Sun Park, Moriyama Kiyofumia, and Moo Hwan Kim(POSTECH),
Ho Seon Ahn(INU)
- 13:50 **Visualization of the Boiling Phenomena and Counter-Current Flow Limit of Annular Heat Pipe**
In Guk Kim, Kyung Mo Kim, Yeong Shin Jeong, and In Cheol Bang(UNIST)
- 14:10 **Comparison of Chrome and Chrome Oxide Coating with CHF**
Gyu Min Son, Han Seo, Seok Bin Seo, Sung Bo Moon, and In Cheol Bang(UNIST)
- 14:30 **Effect of Heat Source Shape on the Thermal Field in the Pebble Bed Core of High Temperature Gas-cooled Reactor(HTGR)**
Leisheng Chen and Jaeyoung Lee(HGU)
- 14:50 **Experiment of CHF Enhancement by Fe304 Nanoparticle Coating n Subcooled Boiling Region**
Young Jae Choi, Dong Hoon Kam, and Yong Hoon Jeong(KAIST)
- 15:10 **Coffee Break**
- 15:30 **Length Effect on the Thermal Performance of a Heat Pipe for NPP Decay Heat Removal**
Joseph Seo and Jae Young Lee(HGU)
- 15:50 **Interaction of Liquid Film Flow of Direct Vessel Injection Under the Cross Directional Gas Flow**
Han-sol Kim and Jae-young Lee(HGU), Dong-Jin Euh(KAERI)
- 16:10 **The Natural Convection Heat Transfer in a Vertical Pipe Varying Length, Diameter**
Seung-Min Ohk and Bum-Jin Chung(KHU)
- 16:30 **Visualization Study on High Heat Flux Boiling and Critical Heat Flux**
Satbyoul Jung and Hyungdae Kim(KHU)

5M
10. 29 (목)
- 30 (금)

열수력 실험 - POSTER

| 좌장 박현식(Hyun-Sik Park), 정용훈(Yong Hoon Jeong)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P05M01 **Development of Empirical Correlation to Calculate Pool Boiling Heat Transfer of Tandem Tubes**
Myeong-Gie Kang(ANU)
- P05M02 **Transition Temperature to Enhance Heat Transfer in Subcooled Pool Boiling**
Myeong-Gie Kang(ANU)
- P05M03 **Experimental Results of A1,2 Test for OECD-ATLAS Project**
Kyoung-Ho Kang, Byoung-Uhn Bae, Yu-Sun Park, Jong-Rok Kim, Nam-Hyun Choi, and Ki-Yong Choi(KAERI)
- P05M04 **Design and Fabrication of Liquid Film Sensor Using Flexible Printed Circuit Board Based on Three-Ring Conductance Meter**
Kyu-Byung Lee, Goon-Cherl Park, and Hyoung Kyu Cho(SNU), Jong-Rok Kim and Dong-Jin Euh(KAERI)
- P05M05 **Experimental Investigation on Operational Performance of PAFS for CIV Opening Storke**
Seok Kim, Byoung-Uhn Bae, Yusun Park, and Kyoung-Ho Kang(KAERI)
- P05M06 **Construction of BIM-Based SMART-ITL Facility Management System**
Woo-Jin Jeon, Sung-Jae Yi, Hyun-Sik Park, Sung-Uk Ryu, and Hwang Bae(KAERI), Sang-Chul Hwangbo and Byung-Eui Min(DDRsoft Co.,)

- P05M07 **Measurement of the Cupric Ion Concentration in the Simulation of the Focusing Effect**
Je-Young Moon, Seung-Hyun Hong, and Bum-Jin Chung(KHU)
- P05M08 **Primary Issues of Mixed Convection Heat Transfer Phenomena**
Myeong-Seon Chae and Bum-Jin Chung(KHU)
- P05M09 **Experimental Validation of the LSS Design Change for Uniform Core Flow**
Kihwan Kim, Dong-Jin Euh, Hae-Seob Choi, and Tae-Soon Kwon(KAERI)
- P05M10 **Experimental Study of the Velocity Profile in the Hot Leg of the APR+**
Kihwan Kim, Hae-Seob Choi, Dong-Jin Euh, and Tae-Soon Kwon(KAERI)
- P05M11 **Experimental Study of the APR+ Direct ECC Bypass in the Air-water Test Facility**
Kihwan Kim, Hae-Seob Choi, Kil-won Park, and Tae-Soon Kwon(KAERI)
- P05M12 **The Effect of Direction for Hydrophobic Lines on Subcooled Flow Boiling: Critical Heat Flux and Heat Transfer Coefficient**
Jin Man Kim, Dong In Yu, Hyun Sun Park, and Moo Hwan Kim(POSTECH)
- P05M13 **Numerical Analysis on Pool Boiling Using User Defined Function**
Sung Uk Ryu, Byong Guk Jeon, Seok Kim, and Dong-Jin Euh(KAERI)
- P05M14 **Scaled Facility Design Approach for Pool-Type Lead-Bismuth Eutectic Cooled Small Modular Reactor Utilizing Natural Circulation**
Sangrok Park, Yong-Hoon Shin, Jueun Lee, and Il Soon Hwang(SNU)
- P05M15 **Analysis of Thermal-Hydraulic Behavior of CMT in the SMART-ITL Facility**
Byong Guk Jeon, Hwang Bae, Sung-Uk Ryu, Hyobong Ryu, Sun-Joon Byun, Sung-Jae Yi, and Hyun-Sik Park(KAERI)
- P05M16 **Sensitivity Analysis of Core Damage by Loss of Auxiliary Feed Water during the Extended Loss of ALL AC Power**
Woo Jae Jeon, Soon Il Chung, Su Hyun Hwang, Kyung Jin Lee, and Byung Chul Lee(FNC Tech.)
Duk Joo Yun and Seung Chan Lee(KHNP CRI)
- P05M17 **Critical Heat Flux of Finite Shape TiO₂ Sputtered Surface**
Yun Hwan Maeng, Sub Lee Song, and Jae Young Lee(HGU)
- P05M18 **Experimental Investigation on Injection Performance of Two-Type CMT with Different Diameter and Same Volume during SBLOCA Test**
Hwang Bae, Sung Uk Ryu, Byong-Guk Jeon, Sun-Jun Byun, Hyo Bong Ryu, Yong-Cheol Shin, Kyoung-Ho Min, Jong-Kuk Park, Nam-Hyun Choi, Yun-Gon Bang, Sung-Jae Yi, and Hyun-Sik Park(KAERI)

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열수력해석/안전현안 – POSTER

| 좌장 조형규(Hyoung Kyu Cho), 이연건(Yeon Gun Lee)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P05N01 **Integrated Validation System for a Thermal-hydraulic System Code, TASS/SMR-S**
Hee-Kyung Kim, Hyungjun Kim, Soo Hyoung Kim, and Young-Dong Hwang(KAERI), Hyeon-Soo Kim(CNU)
- P05N02 **Preliminary Sensitivity Study of Upper Head Nodalization for LBLOCA in APR-1400**
Dong Gu Kang, Seung Hun Yoo, and Dae-Hyung Cho(KINS)
- P05N03 **Analysis of the ATLAS SGTR-HL-05 Experiment Using SPACE Code**
Dong-Hyuk Lee, Jae-Hwa Koh, and Seyun Kim(KHNP CRI)
- P05N04 **Analysis of Shin-Kori 2 High Pressurizer Pressure Trip Event for Assessment of SPACE Pressurizer**
Dong-Hyuk Lee, Yo-Han Kim, and Bum-Soo Youn(KHNP CRI)
- P05N05 **Analysis of LOCV(Loss of Condenser Vacuum) for OPR1000 using the SPACE**
Bum-Soo Youn, Se-Yun Kim, and Dong-Hyuk Lee(KHNP CRI)

-
- P05N06 **Study on the Applicability of k- ϵ Model to Nuclear Safety Problems**
Gong Hee Lee and Ae Ju Cheong(KINS)
- P05N07 **Study of Counter Current Flow Limitation Model of MARS-KS and SPACE Codes under Dukler's air/water Flooding Test Conditions**
Won Woong Lee, Min Gil Kim, and Jeong Ik Lee(KAIST)
- P05N08 **3-Dimensional Simulation of an Air-Lift Pump from Bubbly to Slug Flow**
Hongrae Jo and Daeseong Jo(KNU)
- P05N09 **Preliminary Study of ONB in Narrow-Vertical Rectangular Channel**
Omar S.AL-Yahia and Daeseong Jo(KNU)
- P05N10 **Validation of Wall Friction Model in SPACE-3D Module with Two-Phase Cross Flow Experiment**
Chi-Jin Choi, Jin-Hwa Yang, Hyoung-Kyu Cho, and Goon-Cher Park(SNU), Dong-Jin Euh(KAERI)
- P05N11 **Determination of Pressure Tube Rupture Location in CANDU**
S-H Kang, S-D Yi, and S-R Kim(NESS)
- P05N12 **Heat Transfer Analysis of Fin Tube**
Woo-Jin Jeon(KAERI), Cheng-Ryul Choi(ELSOLTEC CO.,)
- P05N13 **Construction of TH Code Development and Validation Environment**
Hyungjun Kim, Hee-Kyung Kim, and Kyoo-Hwan Bae(KAERI)
- P05N14 **Establishment of Measurement Techniques for Sliding Bubble on a Horizontal Tube**
Yu-Na Kim, Goon-Cherl Park, and Hyoung-Kyu Cho(SNU)
- P05N15 **Development of SPACE Input Model of OPR 1000 Plant for Non-LOCA Analysis**
Minhee Kim and Seyun Kim(KHNP CRI)
- P05N16 **Sensitivity Study on Critical Flow Models of SPACE for Inadvertent Opening of Containment Spray Valve In Shin Kori Unit 1**
Seyun Kim and Minhee Kim(KHNP CRI)
- P05N17 **Evaluation of SPACE Code for Natural Circulation Test of Hanbit Unit 2**
Seyun Kim and Minhee Kim(KHNP CRI)
- P05N18 **Sensitivity Analysis of Dousing Spary Trip on Radioactive Release in Pressure Tube Rupture Accident with Both End Fitting Failure**
M-S Jang, H-S Kang, and S-R Kim(NESS)
- P05N19 **Computational Analysis of Safety Injection Tank Performance**
Jai Oan Cho, Yohanes Setiawan Nietiadi, and Jeong Ik Lee(KAIST), Yacine Addad and Ho Joon Yoon(KUSTAR)
- P05N20 **Dryout Margin Analysis for Transition Core of CANDU**
Ryu Eui-Seung(KHNP CRI)
- P05N21 **Validation of the Parallel Channel Test Loop Pressurizer Experiment Using the TASS/SMR Code**
See-Darl Kim, Young-Jong Chung, and Kyoo-Hwan Bae(KAERI)
- P05N22 **Validation of MATRA-S Low Flow Predictions Using PNL 2x6 Mixed Convection Test**
Kyong-Won Seo, Hyuk Kwon, Seong-Jin Kim, and Dae-Hyun Hwang(KAERI)
- P05N23 **SPACE Code Assessment for FLECHT Test**
Hyoung Kyoum Ahn, Ji Hong Min, Chan Eok Park, Seok Jeong Park, and Shin Whan Kim(KEPCO E&C)
- P05N24 **Thermal Hydraulic Analysis of Loss of Instrument Air for PSA of Wolsong NPP Unit 1**
Bong-Jin Ko, Sang-Gu Han, Sook-Kwan Kim, and Hyung-Jin Kim(ACT CO.,Ltd)
- P05N25 **Assessment of Modified Wall Condensation Models of MARS-KS and SPACE Codes using Reflux Condensation Test**
Kyung Won LEE, Ae Ju CHEONG, and Nam Duk SUH(KINS)
- P05N26 **Performance Analysis of Multi Stage Safety Injection Tank**
Soo Jai Shin, Young In Kim, Youngmin Bae, Han Ok Kang, and Keung Koo Kim(KAERI)
- P05N27 **Complete Flow Blockage of a Fuel Channel for Research Reactor**
Byeonghee Lee and Suki Park(KAERI)
-

- P05N28 **Simulation of Pressure Drop for Different Venturi Diameters**
Dae-Won Cho, In Cheol Chu, and Dong Jin Euh(KAERI)
- P05N29 **Sensitivity Analysis of Core Damage from Reactor Coolant Pump Seal Leakage during Extended Loss of All AC Power**
Da Hee Park, Min Gi Kim, Kyung Jin Lee, Su hyun Hwang, and Byung Chul Lee(FNC Tech.)
Duk Joo Yoon and Seung Chan Lee(KHNP CRI)
- P05N30 **Analysis Study of the Condensation Heat Transfer Coefficient in the Presence of Noncondensable on PCCS Vertical Condenser Tube using MARS-KS**
Dong jae Choi, Yeong jun Jang, and Yeon gun Lee(JNU), Sin Kim(CAU)
- P05N31 **Break Survey at Reactor Inlet Header for Large Break LOCA of a CANDU 6 with a New 37-element Fuel Fully Loaded**
Dongwook Kho(KHNP CRI)
- P05N32 **Assessment of FRAPCON-MATRA Coupling for a Multi-rod Geometry**
Seong-Jin Kim, Hyo-Chan Kim, Hyouk Kwon, Kyong-Won Seo, and Dae-Hyun Hwang(KAERI)
- P05N33 **Design Aspects of Wet Scrubber System**
Hyun-Chul Lee, Young-suk Bang, Woo-Young Jung, and Doo-Yong Lee(FNC Tech.)
- P05N34 **Numerical Study of Subcooled Boiling Phenomena using a Component Analysis Code, CUPID**
Ba-Ro Lee and Yeon-Gun Lee(JNU)
- P05N35 **Numerical Analysis on Behavior of Droplet in Venturi Scrubber**
W. Y. Choi, D. Y. Lee, and Y. S. Bang(FNC Tech.)
- P05N36 **Evaluation of Advanced Models for PAFS Condensation Heat Transfer in SPACE Code**
Byoung-Uhn Bae, Seok Kim, Yu-Sun Park, and Kyung Ho Kang(KAERI), Tae-Hwan Ahn and Byong-Jo Yun(PNU)
- P05N37 **Outcomes of Domestic Standard Problem-03:Scaling Capability of Facility Data**
Yusun Park, Bumsu Youn, Seung-won Lee, Won-tae Kim, Kyoung-ho Kang, and Ki-yong Choi(KAERI)
- P05N38 **The Calculation of Flooding Level using CFX Code**
Seo Bin Oh, Keon Yeop Kim, and Hyung Ho Lee(FNC Tech.)
- P05N39 **Investigation for Ensuring the Reliability of the MELCOR Analysis Results**
Joonyoung Sung, Yunhwan Maeng, and Jaeyoung Lee(HGU)
- P05N40 **Sensitivity Test of 1-D Analysis for MSLB in 3rd ATLAS Domestic Standard Problem(DSP-03)**
J. Kim, J. S. Huh, Y. S. Park, B. U. Bae, K. H. Kang, and K. Y. Choi(KAERI), J. J. Kim(KEPCO E&C)
J. S. Lee(KINS), H. H. Son(HYU), T. W. Ha(PNU), J. I. Kim(Doosan)
- P05N41 **Assessment of TRACE Code for GE Level Swell Test to Review Industrial Code**
Chanyi Song, Ae Ju Cheng, Young Seok Bang, and Taesuk Hwang(KINS)

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중대사고 – POSTER

| 좌장 강형석(Hyung-Seok Kang), 최유정(Yu Jung Choi)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P05001 **The Need to Introduce CFD Methodology in Analyze Hydrogen Distribution for Postulated Severe Accidents**
Hanbee Na and Sukyung Park, and Kyuntae Kim(KINS), Jongkwang Lee(HGU), Sejin Kwon(KAIST)
- P05002 **Introduction of the Amendment of IAEA Safety Requirments Reflected Lessons Learned from Fukushima Nuclear Accident**
Sang-Kyu Ahn, Hyung-Joon Ahn, Sun-Hae Kim, and Jae-Hak Cheong(KINS)
- P05003 **Post Analysis of Two Phase Natural Circulation Mass Flow Rate for CE-PECS**
R. J. Park, K. S. Ha, B. W. Rhee, and H. Y. Kim(KAERI)
- P05004 **Preliminary Analytical Reviews on the Performance of Fibrous Filter**
Yu Jung Choi, Tae Hyub Hong, and Hyeong-Taek Kim(KHNP CRI)

- P05005 **Study on the Injection Region for Pool Scrubbing**
Yu Jung Choi, JaeHwan Park, and Hyeong-Taek Kim(KHNP CRI)
- P05006 **Fuel-Coolant Interaction Visualization in TROI Test Facility**
Young Su Na, Seong-Ho Hong, Jin Ho Song, and Seong-Wan Hong(KAERI)
- P05007 **Melcor Simulation of Steam Condensation Effect on Hydrogen Behavior in Thai Hm-2 Experiment**
Seongnyeon Lee, Jung-Jae Lee, and Yong-Jin Cho(KINS), Sung Joong Kim(HYU)
- P05008 **The Simulation of Debris Particle Sedimentation and Formation in Severe Accident using the CFD-DEM Algorithm:Preliminary Results**
Byoungcheol Hwang, Eunho Kim, and Hyun Sun Park(POSTECH)
- P05009 **Desktop Severe Accident Graphic Simulator Module for CANDU6:PSAIS**
S. Y. Park and Y. M. Song(KAERI)
- P05010 **Development of an Evaluation Methodology for Loss of Large Area Induced from Extreme Events**
Sok Chul Kim, Jong Seuk Park, Byung Soon Kim, Dong Ju Jang, and Seung Woo Lee(KINS)
- P05011 **Revisit of Melt Jet Breakup Length Correlations for Fuel-Coolant Interactions:Preliminary Experiment Results in the MATE Facility**
Woo Hyun Jung, Kiyofumi Moriyama, and Hyun Sun Park(POSTECH)
- P05012 **Mass Transfer Simulation of Two-Dimensional Natural Convection of Mixture Layer in an IVR**
Su-Hyeon Kim and Bum-Jin Chung(KHU)
- P05013 **Evaluating the Effectiveness of Mitigation Strategies during Severe Accidents in the Spent Fuel Pool for the APR1400 Using the MAAP5 Code**
Kyung Ho Nam and Keo Hyoung Lee(FNC Tech.), Mi Ro Seo(KHNP CRI)
- P05014 **PIV Visualization of Bubble Induced Flow Circulation in 2-D Rectangular Pool for Ex-Vessel Debris Bed Coolability**
Teayang Han, Eunho Kim, Hyun Sun Park, and Kiyofumi Moriyama(POSTECH)
- P05015 **Evaluating the Effectiveness of Alternate Entry Condition into the Severe Accident Management Guidance**
Hyung Seok Yoon and Su Won Lee(FNC Tech.), Shin Jung Min(KHNP CRI)
- P05016 **Preliminary Calculation on a Spent Fuel Pool Accident using GOTHIC**
Jaehwan Park, Yu Jung Choi, Tae Hyub Hong, and Hyeong-Taek Kim(KHNP CRI)
- P05017 **Effects of Piping Supports Failure to Main Steam Line Integrity under Steam Explosion Condition**
Seung Hyun Kim and Yoon-Suk Chang(KHU), Sungchu Song and Yong-Jin Cho(KINS)
- P05018 **Analysis of Reactor Building Flooding Level for CANDU Reactor**
Lee Youngseung and Shin Jungmin(KHNP CRI)
- P05019 **Development of MAAP5.0.3 Dose Model for Radiation Environment Effect Analysis**
Mi Ro Seo(KHNP CRI)
- P05020 **Analysis of Severe Accident for the SFP under the Condition of Drainage using MELCOR**
Jung-Min Oh and Jae-Woo Pack(JNU)
- P05021 **MELCOR Sensitivity Analysis Focusing on the Heat Source**
Yunhwan Maeng, Joonyoung Sung, and Jaeyoung Lee(HGU)

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- 30 (금)

확률론적안전성평가 – POSTER

| 좌장 안광일(kwang Il Ahn), 장동주(Dong Ju Jang)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P05P01 **Sensitivity Analysis on Fire Modeling of Main Control Board Fire Using Fire Dynamics Simulator**
Dae Il Kang and Ho Gon Lim(KAERI)

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|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P05P02 | Examination of Risk Significant Configuration during Low Power and Shutdown with ORION and PSA
Chul Kyu Park and Seung Jong Oh(KINGS) |
| P05P03 | Fault Tree Modeling of AAC Power Source in Multi-unit Nuclear Power Plants PSA
Sang Hoon HAN and Ho-Gon LIM(KAERI) |
| P05P04 | PSA Comparison between OPR100 and VVER1200 Designs
Bui Thi Dung(KAIST), Jong Soo Choi(KINS) |
| P05P05 | A Probabilistic Methodology for Assessing the Effectiveness of the Containment Filtered Venting Systems
Namyong Kim and Moosung Jae(HYU) |
| P05P06 | Pre-Study of Off-site Consequence Analysis in Level 3 PSA of Wolsong Unit 1
Won-Jik Kim, Ho-Chang Yang, and Seong-Soo Choi(ACT CO., Ltd.) |
| P05P07 | Improvement Strategy of Probabilistic Safety Assessment Quality for Domestic CANDU Nuclear Power Plants
Ho-Chang Yang, Hyung-Jin Kim, Hyung-Keun Yoo, and Koo-Sam Kim(ACT CO., Ltd.) |
| P05P08 | Experiences in Level 1 PSA during Low Power and Shutdown State for Wolsong 1
J. W. Park, B. I. Lee, S. K. Kim, and S. K. Han(ACT CO., Ltd.) |
| P05P09 | Research of Current Issues&Preliminary Sensitivity Analysis of Level 3 PSA
So Eun Shin and Yong Suk Lee(FNC Tech.), Seung Woo Lee(KINS) |
| P05P10 | A Methodology to Incorporate the Safety Culture into Probabilistic Safety Assessments
Sunghyun Park, Namyong Kim, and Moosung Jae(HYU) |
| P05P11 | Study on the Post-Fire Safe-Shutdown Analysis for CANDU NPPs
In Hwan Kim, Yun Jung Kim, and Mun Hee Park(KHNP CRI) |
| P05P12 | A Qualitative Accident Scenario Analysis for a Very High Temperature Reactor
Jintae Kim, Joeun Lee, and Moosung Jae(HYU) |
| P05P13 | Operating Experiences of a Loss of Voltage Monitoring Program
Eun-Chan Lee(KHNP CRI) |

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10. 29 (목)

Radiation Shielding

| 좌장 이용덕(YongDeok Lee), 김재홍(Jaehong Kim)

| 발표장소 금강(지하1층)

초청발표

- 09:00 **Benchmarking Study and its Application for Shielding Analysis of Large Accelerator Facilities**
Hee-Seock Lee, Dong-hyun Kim, Joo-Hee Oh, Leila Mokhtari Oranj, Arim Lee, and Nam-Suk Jun(POSTECH)
- 09:30 **Retrospective Accident Dosimetry Using Trapped Charges**
J. I. Lee, J. L. Kim, I. Chang, B. H. Kim(KAERI)
- 10:00 **Source Term Analysis for Reactor Coolant System with Consideration of Fuel Burnup**
Yu Jong Lee, Joon Gi Ahn, and Hae Ryong Hwang(KEPCO E&C)
- 10:20 **Radionuclides Release Possibility Analysis of MSR at Various Accident Conditions**
Choong Wie Lee and Hee Reyoung Kim(UNIST)
- 10:40 **Coffee Break**
- 11:00 **A Radiation Shielding Analysis for 500W Radioisotope Thermo-Photo-Voltaic(RTPV) System with MCNP6 and MONACO/MAVRIC**
Seong Jae Cheon and Ser Gi Hong(KHU)
- 11:20 **Activation Analysis for Beam Dump of IF Facility in RAON Accelerator**
Eun Joong Lee and Gyuseong Cho(KAIST), Cheal Woo Lee, Sung Chul Yang, and Young-Ouk Lee(KAERI)
- 11:40 **Shielding Calculations for Positron Emission Tomography-Computed Tomography Facilities**
Khashbayer Baasandorj(KAIST), Jeongseon Yang(KINS)
- 12:00 **An Evaluation on Radiation Shielding and Activation Properties of ISOL-bunker Structural Materials for Radiation Safety in RAON Accelerator**
Do Hyun KIM, Song Hyun KIM, Myeong Hyeon WOO, Jae Yong LEE, Jong Woo KIM, and Chang Ho SHIN(HYU)
Shin Woo NAM(IFS)

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10. 30 (금)

Neutron Science

| 좌장 한영수(Young-Soo Han), 이수열(Soo Yeol Lee)

| 발표장소 금강(지하1층)

초청발표

- 09:00 **Comparison of Measured Residual Stress in an Extra Thick Multi-pass Weld Using Neutron Diffraction Method and Inherent Strain Method**
Jeong Ung Park(CSU), Gyu Baek An(POSTECH), Wan Chuck Woo(KAERI)
- 09:30 **The Use of Neutron Diffraction to Study Plastic Deformation and Fatigue Failure in Structural Materials**
Soo Yeol Lee(CNU), Wan chuck Woo(KAERI)
- 10:00 **Characterization of Nano Sized Microstructures in Fe and Ni Base ODS Alloys Using Small Angle Neutron Scattering**
Young-Soo Han, Jin-Sung Jang, and Xiaodong Mao(KAERI)
- 10:20 **Support-shape Dependent Catalytic Activity in Pt/alumina Systems Using USANS/SANS**
Sang Hoon Kim, Sugyeong Han, Heonphil Ha, Jiyoung Byun, and Man-ho Kim(KIST)
- 10:40 **Coffee Break**
- 11:00 **Development of Energy Selective Neutron Imaging System at HANARO**
Jongyul Kim, Jeong ho Kim, Suhyun Lee, Myung Kook Moon, TaeJoo Kim, Eun Joo Shin, and Wanchuck Woo(KAERI)

- 11:20 **An In-situ He-3 Polarizer, a Noble Hybrid RF Spin Flipper, and a Two-coil Spin Flipper Designed for Polarized Neutron Instruments**
Sungman Lee, June Hyuk Lee, Ki-Yeon Kim, Sang Jin Cho, Myung Kook Moon, Jongyul Kim, Young Soo Han, and Chang Hee Lee(KAERI), Seung Wook Lee(PNU)
- 11:40 **Development of Neutron Detectors for Neutron Scattering Experiments**
Myungkook Moon, Jongyul Kim, Jeong ho Kim, and Suhyun Lee(KAERI), Changhwy Lee(KRISOE)
- 12:00 **Characterization of the Neutron Flux Energy Spectrum Produced by 35 MeV Proton Beams at KIRAMS MC-50 Cyclotron with a Beryllium Target**
Sy Minh Tuan Hoang, Gwang Min Sun, Hani Beak, and Jiseok Kim(KAERI)

6C 10. 30 (금)

Radiation Application and Protection

| 좌장 최강혁(Kang Hyuk Choi), 정근호(Kun Ho Chung)

| 발표장소 금강(지하1층)

초청발표

- 14:00 **Compact Accelerator Driven Neutron Source and Their Impact**
Michihiro Furusaka
- 14:30 **Study of the Electroplated of Ni for Betavoltaic Battery using PN Junction without Seed Layer**
Young Rang Uhm, Jong Bum Kim, and Kwang Jae Son(KAERI), Byoung Gun Cho(ETRI)
- 14:50 **RI and Target Recovery System of Lanthanides**
K. H. Choi, U. J. Park, S. H. Jung, J. B. Kim, J. H. Moon, S. S. Nam, and K. D. Jang(KAERI)
- 15:10 **Coffee Break**
- 15:30 **PMMA-based Anti-scattering Grid Performance Test by MCNP Code Simulation**
Jun Woo Bae and Hee Reyoung Kim(UNIST)
- 15:50 **Correlation between Yellow Dust and Radioactivity**
Mouza A. AlZaabi(KAIST), Byoung-Jik Kim(KINS)
- 16:10 **A Study on the use of Gafchromic™ EBT3 Film for Microdosimetry by Raman Spectroscopy**
Jamal Ahmad Mirza, Taemin Heo, Hyeonsuk Park, and Sung-Joon Ye(SNU)
- 16:30 **Development of Fission Mo-99 Process and Facility for Kijang New Research Reactor**
Seung-Kon Lee, Suseung Lee, Sung-Hee Jung, Soon-Bog Hong, Kyung-Duk Jang, Sang Mu Choi, and Jun Sig Lee(KAERI)
- 16:50 **Multiple Beta Spectrum Analysis by Using Gradient Comparison Method**
Uk Jae Lee, HyungJun Kim, and Hee Reyoung Kim(UNIST)

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Radiation Environment and Protection – POSTER

| 좌장 이정일(Jungil Lee), 박종국(Jong Kuk Park)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P06D01 **MIR Spectroscopic Method for Detection of $^{14}\text{CO}_2$**
Kwang-Hoon Ko, Yonghee Kim, Taek-Soo Kim, Lim Lee, Hyunmin Park, Yong-Ho Cha, Gwon Lim, and Do-Young Jeong(KAERI)
- P06D02 **A Field Test of the New Portable Gamma Spectrometry System**
Jung-Ki Shin, Uk Ryang Park, Seunghoon Park, Heejun Chung, and Sung-Woo Kwak(KINAC), Yongkwon Kim(NuCare M.)
- P06D03 **The Separation of Dysprosium and Holmium for Production of n.c.a. Ho-166**
K. H. Choi, J. B. Kim, U. J. Park, S. S. Nam, K. D. Jang, and K. M. Yoo(KAERI)

- P06D04 **Comparative Criticality Analysis of Two Monte Carlo Codes on Centrifugal Atomizer: MCNPS and SCALE**
H-S Kang, M-S Jang, and S-R Kim(NESS), J-M Park and K-N Kim(KAERI)
- P06D05 **Preliminary Simulation of a Radiation Behavior in Large Scale Radiation Dose Facilities**
Chang Je Park and Woosik Jeong(Sejong Univ.)
- P06D06 **Environmental Radiation Surveillance Results from over the Last Decade of Operational Experience at the Regional Radiation Monitoring Stations(RRMS)**
Hae Young Lee(RRMS), Dong Han Yoo(UNIST), Sang Hoon Lee(KNU)
- P06D07 **Uranium Enrichment Measurement for a UF₆ Cylinder Verification using the Quad-CZT Array**
Uk Ryang Park, Jung-Ki Shin, Seunghoon Park, Heejun Chung, and Sung-Woo Kwak(KINAC), Yongkwon Kim(NuCare M.)
- P06D08 **Thermal Analysis on the Sealed Water Cell of Water Calorimeter**
M. Y. Kang, J. H. Kim, and H. D. Choi(SNU), I. J. Kim(KRISS)
- P06D09 **A Review on International Trends in NORM Residue Disposal**
Ji-Yong Shin and Eun-Hee Kim(SNU)
- P06D10 **Radiation Exposure of NORM Workers in Korea: Current Status and Suggestions**
Wanook Ji and Eun-Hee Kim(SNU)
- P06D11 **A Preliminary Study on the Radiation dose Distribution in the Pyroprocess Hot Cell Environment**
Chankyu Kim, Myung Soo Kim, Giyeon Kim, Eunjoong Lee, Jeong Tae Lee, and Gyuseong Cho(KAIST), Seong-Kyu Ahn and Se-Hwan Park(KAERI)
- P06D12 **Evaluation of Shielding Wall Optimization in Lead Slowing Down Spectrometer System**
Ju Young Jeon, Jeong Dong Kim, and YongDeok Lee(KAERI)
- P06D13 **An Internal Dose Assessment Associated with Personal Food Intake**
Joeun Lee and Moosung Jae(HYU), Wontae Hwang(KAERI)
- P06D14 **Water-to-Wildlife Transfer of Radionuclides in Freshwater Ecosystems around the Gyeongju Nuclear Site**
Yong-Ho Choi, Kwang-Muk Lim, In Jun, Byeong-Ho Kim, and Dong-Kwon Keum(KAERI)
- P06D15 **Estimation of the Radiological Consequences of Fukushima Dai-ichi Nuclear Power Plant Accident using MACCS2**
Sora Kim, Byung-Il Min, Kihyun Park, Byung-Mo Yang, and Kyung-suk Suh(KAERI)
- P06D16 **Preliminary Estimation of Radioactive Cesium Concentration due to Hypothetical Accident in East Sea**
Byung-Il Min, Sora Kim, Kihyun Park, and Kyung-suk Suh(KAERI)
- P06D17 **Influence of Statistical Compilation of Meteorological Data on Long Term Atmospheric Dispersion Factor in Routine Operation of a Nuclear Power Plant**
Valere Nsimba Tsasa(KAIST), Kwan Hee Lee(KINS)
- P06D18 **Differential Sensitivity of Cells to Radiation Mediated by p53 Pulses**
Jin Kyu Kim, Mi Young Kang, Remigius A. Kawala, Tae Ho Ryu, and Jin-Hong Kim(KAERI)
- P06D19 **Dose Assessment using Chromosome Aberration Analyses in Human Peripheral Blood Lymphocytes**
Tae Ho Ryu, Jin-Hong Kim, and Jin Kyu Kim(KAERI)
- P06D20 **Convergence Nanorobot Analysis for Radiation Therapy-Industrial Innovations in Nuclear Engineering**
Taeho Woo(Yonsei Univ.)

6E

Radiation Isotopes and Protection – POSTER

10. 29 (목)
– 30 (금)

| 좌장 이종일(Jong Il lee), 김한수(Han Soo Kim)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P06E01 **Simulation of a Compact Neutron Source with 13MeV Cyclotron**
Jeong ho Kim and Seung Wook Lee(PNU), Myung Kook Moon, Min Goo Hur, and TaeJoo Kim(KAERI)

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- P06E02** **Development of Interactive Monitoring System for Neutron Scattering Instrument**
Ji-Yong So(KAERI)
- P06E03** **Monte Carlo Simulation for an Irradiation of the Single-crystal Silicon in HANARO**
Tae-Yang Noh, B. G. Park, and M. S. Kim(KAERI)
- P06E04** **Preparation of Ni-63 Source for the Fabrication of Betavoltaic Battery**
Jin Joo Kim, Young Rang Uhm, Kwang Jae Son, and Jintae Hong(KAERI)
- P06E05** **Evaluation of ^{18}F Radioactive Concentration in Exhaust at Cyclotron Facility at Chosun University**
Cheolki Jeong, Daeseok Kim, Han Jang, and Gyeongjin Lee(CSU)
- P06E06** **Monte Carlo Simulation Study for Boron Neutron Capture Therapy**
Y. U. Kye, S. G. Shin, and M. H. Cho(POSTECH), W.Namkung(PAL)
- P06E07** **Heat and Thermal Stress Analysis of Cask for Transporting Ir-192 and I-131**
J. H. Park, K. J. Son, J. T. Hong, and J. B. Kim(KAERI)
- P06E08** **^{68}Ga Labeling of DOTMP using Freeze-dried Kit for the Imaging of Bone Metastasis**
So Hee Dho, Sangmu Choi, Sooyong Kim, Eunha Cho, Soyoung Lee, Sunghee Jung, and Jaecheong Lim(KAERI)
- P06E09** **Development of Silver-exchanged Adsorbents for the Removal of Fission Iodine from Alkaline Dissolution**
Taewoon Kim, Seung-Kon Lee, Suseung Lee, and Jun Sig Lee(KAERI)
- P06E10** **Biodistribution of Intraperitoneally-administered ^{125}I -labeled IgG in Mouse**
Sooyong Kim, So Hee Dho, Eunha Cho, Soyoung Lee, Sunghee Jung, and Jaecheong Lim(KAERI)
- P06E11** **Alpha-Irradiation-Induced Doping of Si**
Eun Je Lee, Young Bae Kong, and Min Goo Hur(KAERI)
- P06E12** **Synthesis of Co Diffused Cu matrix for Applying Mossbauer Source**
Sang Mu Choi, Young Rang Uhm, Jong Bum Kim, and Kwang Jae Son(KAERI)
- P06E13** **Design and Beam Extraction Simulation of a Penning Ion Source for Applying Movable Neutron Generator**
Cheol Ho Lee, Jaebum Son, and Yong-Kyun Kim(HYU), Byung-Hoon Oh(KAERI)
- P06E14** **Development of the Radiation Inspection System for Food Materials**
Sujung Min, Heeyoung Kim, Myungjin Kim, and Unjang Lee(ORION E&C)
- P06E15** **Microtomography with a Sandwich Detector for Mouse Bone Imaging**
Seung Ho Kim, Junwoo Kim, and Ho Kyung Kim(PNU), Hanbean Youn and Hosang Jeon(PNUYH)
- P06E16** **Characteristics of X-ray Fluorescence of Nuclear Materials**
Seunghoon Park, Sung-Woo Kwak, Jung-Ki Shin, Uk-Rayng Park, and Heejun Jung(KINAC)
- P06E17** **The Dosimetric Characteristics of Personal Alarm Dosimeter: Dependence of dose Rate and Photon Energy**
Ha-Seok Chai, Jun Hee Lee, Jae Min Kim, Gi Chang Song, and Jae Duck Park(ILJINRAD)
- P06E18** **Characteristics of a Portable Neutron Generator**
Jeong-Tae Jin, Byung-Hoon Oh, Dae-Sik Chang, Sang-Yeol In, Sung-Ryul Huh, and Kwang-Pyo Hong(KAERI)
- P06E19** **Evaluation of Light Collection in Radiation Portal Monitor with Multi PMTs using Monte Carlo Simulation**
Chang Hwy Lim, Jong Won Park, and Junghee Lee(KRISOE), Myung Kook Moon, Jongyul Kim, and Suhyun Lee(KAERI)
- P06E20** **Development of a New Laser Alignment Device with Winston-Lutz Phantom in Radiotherapy**
Young Kyung Lim, Soonki Min, Eun Hee Jeang, Jong Hwi Jeong, Haksoo Kim, Jeong-Hoon Park, DongHo Shin, and Se Byeong Lee(NCC), Sang Hyoun Choi(KCCH), Ui-Jung Hwang(NMC), Jung Won Kwak(AMC), Siyong Kim(VCU)
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7A
10.30 (금)

양자공학 및 핵융합기술 (Quantum Engineering and Nuclear Fusion)

| 좌장 이동원(Dong Won Lee), 김석권(Suk-Kwon Kim)

| 발표장소 크리스탈(지하1층)

초청발표

13:30 Operation Status of KOMAC
Y. S. Cho(KAERI)14:00 Status of KSTAR Operation and Upgrade
Yeong-Kook Oh(NFRI)14:30 Analysis of Tritium Breeding in the Test Module
SeongHee HONG, YunSeo Park, and Myung Hyun KIM(KHU)14:50 Measurement of Velocity Profiles in a Scaled Transparent Test Blanket Module
Han Seo and In Cheol Bang(UNIST), Dong Won Lee(KAERI)

15:10 Coffee Break

15:30 Multiple Module Simulation of Water Cooled Breeding Blankets in K-DEMO Using Thermal-Hydraulic Analysis Code MARS-KS
Geon-Woo Kim, Jeong-Hun Lee, Goon-Cherl Park, and Hyoung-Kyu Cho(SNU), Kihak Im(NFRI)15:50 Development of an Automatic Frequency Control (AFC) System for RF Electron Linear Accelerators
Sungsu Cha, Yujong Kim, Byeong-No Lee, Youngwoo Joo, Soo Min Lee, Byung Cheol Lee, and Hyungki Cha(KAERI), Hyung Dal Park(RTX), Seung Hyun Lee(SKKU)16:10 RFQ Based Helium Beam Irradiation System
H. S. Kim, H. J. Kwon, K. T. Seol, Y. G. Song, S. K. Park, and Y. S. Cho(KAERI)16:30 Installation of the Ion Accelerator for the Surface Analysis
Hyeok-Jung Kwon, Han-Sung Kim, Bo-Hyun Chung, Tae-Sung Ahn, Dae-Il Kim, Cho-Rong Kim, and Yong-Sub Cho(KAERI)16:50 Performance Results for Building the 1 MV Electrostatic Accelerator at KOMAC
Dae-Il Kim, Hyeok-Jung Kwon, Sae-Hoon Park, and Yong-Sub Cho(KAERI)7B
30 (금)

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

| 좌장 권혁중(Hyeok-Jung Kwon), 정승호(SeungHo Jeong)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 30일(금) 10:00 ~ 12:00

P07B01 Numerical Analysis for Heat Transfer Characteristic of Helium Cooling System in Helium Cooled Ceramic Reflector Test Module Blanket (HCCR-TBM)
Seong Dae Park, Dong Won Lee, Hyung Gon Jin, Eo Hwak Lee, Jae Sung Yoon, and Suk Kwon Kim(KAERI), Seungyon Cho(NFRI)P07B02 Beam Profile Measurement of 300 kV Ion Source Test Stand for 1 MV Electrostatic Accelerator
Sae-Hoon Park and Yu-Seok Kim(DU), Dae-Il Kim, Hyeok-Jung Kwon, and Yong-Sub Cho(KAERI)P07B03 Thermal-Fatigue Analysis of W-joined Ferritic-Martensitic Steel Mockup for Fusion Reactor Components
Dong Won Lee, Hyung Gon Jin, Eo Hwak Lee, Jae Sung Yoon, Suk Kwon Kim, and Seong Dae Park(KAERI)
Kyu In Shin(Gentec Co.), Se Yeon Moon and Bong Guen Hoog(CBNU)

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- P07B04 Construction Status of the Beamline for Radio-Isotope Production in the Korea Multipurpose Accelerator Complex**
B. H. Chung, S. P. Yoon, K. T. Seol, H. S. Kim, H. J. Kwon, and Y. S. Cho(KAERI)
- P07B05 Qualification Program of Korea Heat Load Test Facility KoHLT-EB for ITER Plasma Facing Components**
Suk-Kwon Kim, Seoung Dae Park, Hyung Gon Jin, Eo Hwak Lee, Jae-Sung Yoon, and Dong Won Lee(KAERI),
Seungyon Cho(NFRI)
- P07B06 E-beam Welding Characteristic of the ARAA Steel for the KO HCCR TBM**
Jae Sung Yoon, Suk-Kwon Kim, Eo Hwak Lee, Hyung Gon Jin, and Dong Won Lee(KAERI),
Seungyon Cho(NFRI)
- P07B07 Mock-up Test for Isotope Target Transport and Cooling System**
Sang-pil Yoon, Hyeok-jung Kwon, Han-sung Kim, Yong-sub Cho, Bo-hyun Chung, Kyung-tae Seol, Young-gi
Song, Dae-il Kim, and Yi-sub Min(KAERI)
- P07B08 Current Design of the Flange Type Hydrogen Permeation Sensor in Liquid Breeder**
E. H. Lee, H. G. Jin, J. S. Yoon, S. K. Kim, and D. W. Lee(KAERI), H. G. Lee(NFRI)
- P07B09 Sampling Number Effects in 2D and Range Imaging of Range-gated Acquisition**
Seong-Ouk Kwon, Seung-Kyu Park, Sung-Hoon Baik, Jai-Wan Cho, and Kyung-Min Jeong(KAERI)
- P07B10 Design and Preparation of RF System for the Lower Hybrid Fast Wave Heating and Current Drive Research on VEST**
Sun Ho Kim and Seung Ho Jeong(KAERI), Hyun Woo Lee and Byung Je Lee(KWU), Jong Gab Jo, Hyun Young
Lee, and Yong Seok Hwang(SNU)
- P07B11 CFX Validation for the Fully Developed 2D Laminar Steady MHD Flow**
Hyung Gon Jin, Dong Won Lee, Eo Hwak Lee, Jae Sung Yoon, and Suk Kwon Kim(KAERI), Brad J. Merrill(INL)
H. G. Lee(NFRI)
- P07B12 Alignment of Magnets for RI Production Beam Line at KOMAC**
Dong-Hyuk Seo, Dae-Il Kim, Tae-Sung Ahn, Han-Sung Kim, Hyeok-Jung Kwon, and Yang-Sub Cho(KAERI)
- P07B13 HCCR TBS Safety Analysis-HCS Heat Exchanger Break to CCWS-1**
Hyung Gon Jin, Dong Won Lee, Eo Hwak Lee, Jae Sung Yoon, and Suk Kwon Kim(KAERI), Brad J. Merrill(INL)
Mu-Young Ahn and Seungyon Cho(NFRI)
- P07B14 30 kW SSA Test for the KOMAC MEBT**
Seong-Gu Kim, Kyung-Tae Seol, Hyeok-Jung Kwon, Han-Sung Kim, Young-Gi Song, and Yong-Sub Cho(KAERI)
- P07B15 Analysis of Residual Nuclide from ACM and ACCT of 100-MeV Proton Beamline By Measurement of X-ray Spectrum**
Jeong-Min Park, Sang-Pil Yun, Han-Sung Kim, Hyeok-Jung Kwon, and Yong-Sub Cho(KAERI)
- P07B16 Structural Analysis of the Beam Window for RI Beam Line in KOMAC**
Cho-Rong Kim, Bo-Hyun Chung, Han-Sung Kim, Hyeok-Jung Kwon, and, Yong-Sub Cho(KAERI)
- P07B17 Simulation of the Direct Digital Synthesis Module for Helium RFQ LLRF System**
Hae-Seong Jeong, Tae-Sung Ahn, Seong-Gu Kim, Hyeok-Jung Kwon, Han-Sung Kim, Young-Gi Song,
Kyung-Tae Seol, and Yong-Sub Cho(KAERI)
- P07B18 Implementation of EPICS Based Control System for Radio Isotope Beam Line**
Jae-Ha Kim, Tae-Sung Ahn, Young-Gi Song, Hyeok-Jung Kwon, and Yong-Sub Cho(KAERI)
- P07B19 Improvement of Control Infrastructure and High Level Application for KOMAC LINAC**
Young-Gi Song, Jae-Ha Kim, Tae-Sung Ahn, Hyeok-Jung Kwon, and Yong-Sub Cho(KAERI)
- P07B20 High Power Test for Klystron Stability**
Kyung-Tae Seol, Seong-Gu Kim, Hyeok-Jung Kwon, Han-Sung Kim, and Yong-Sub Cho(KAERI)
- P07B21 Status and Plans for the Daejeon Ion Accelerator Complex at KAERI**
Sung-Ryul Huh, Dae-Sik Chang, Churl-Kew Hwang, Bong-Ki Jung, Jung-Tae Jin, and Byung-Hoon Oh(KAERI)
- P07B22 KSTAR Severe Accident Analysis using MELCOR:Ex-vessel Coolant Pipe Break with Failure of Fusion
Power Termination System**
Sung Bo Moon and In Cheol Bang(UNIST)
- P07B23 Configuration and Application of He RFQ LLRF Control System Based on EPICS**
Tae-Sung Ahn, Hae-Seong Jeong, Seong-Gu Kim, Young-Gi Song, Han-Sung Kim, Kyung-Tae Seol,
Hyeok-Jung Kwon, and Yong-Sub Cho(KAERI)
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8A

10. 29 (목)

원전 건설 : NPP's Construction

I 좌장 김용수(Yong Soo Kim), 방상윤(Sang Youn Bang)

I 발표장소 사파이어(2층)

초청발표

- 09:00 Major Design Features and Development Status of Korean Advanced Reactors
Yong Soo Kim(KHNP CRI)
- 09:30 Development of Reactor Coolant Pump for APR1400
Sang-Youn Bang, Sung-Min Chu, and Jin-Young Chang(DOOSAN)
- 10:00 An Experience of Thermowell Design in RCP Test Facility
Y. S. Kim, B. D. Kim, Y. J. Youn, W. J. Jeon, S. Kim, B. U. Bae, Y. J. Cho, H. S. Choi, J. K. Park, and S. Cho(KAERI)
- 10:20 Analysis for the Effects of Grid Voltage Degradation on APR1400 Operation, Case Study for Egypt
Mostafa Ahmed Fouad Hassan and Chang Choong-koo(KINGS)
- 10:40 Coffee Break
- 11:00 Design of the AM600 Turbine-Generator for NPPs in Emerging Markets
Oancea Bogdan Alexandru, M. Gomaa Abdoelatef, and Robert Field(KINGS)
- 11:20 Condenser Design for the Proposed AM600 NPP
Mizanur Rahman, Khaled Atya Ahmed Abdallah, and Robert M. Field(KINGS)
- 11:40 Design of BOP Systems for the AM600
Victor Otieno Ouma, M. Gomaa Abdoelatef, Na Hyungjooh, and Robert Field(KINGS)
- 12:00 Conceptual Design of the Top Mounted In-core Instrumentation for APR1400
Taehyun Bae, Jaehyun Bae, Jongmin Kim, Cheolsoo Maeng, Hyunmin Kim, and Daehee Lee(KEPCO E&C)

8B

10. 30 (금)

원전 운영 및 정비 : Operation & maintenance

I 좌장 김진원(Jin Weon Kim), 장희승(Hee Seung Chang)

I 발표장소 사파이어(2층)

초청발표

- 09:00 Nuclear Safety Enhancement by the Continued Operation
Yeong Sik Jeong(KHNP)
- 09:30 Status and plan of PSR in the Korean NPPs
Sukwoong Chung(KHNP)
- 10:00 Methodology of Licensing for Field Applications of Weld Inlay and Ultrasonic Nanocrystal Surface Modification
Hong Seok Cho and Kwang Woon Jung(KEPCO KPS), Ik Keun Park(SNU), Young Sik Pyun(SMU)
- 10:20 Analysis of Mechanical Stress Improvement Process(MSIP) on the Welding between Reactor Vessel Inlet/Outlet and Reactor Coolant System(RCS) Piping
Le Viet Anh and Kim Tae Ryong(KINGS)
- 10:40 Coffee Break
- 11:00 Residual Stress Evaluation of Weld Inlay Process on Reactor Vessel Nozzles
Kihyun Cho and Hong Seok Cho(KEPCO KPS)

- 11:20 **Development of High-Performance Reflective Metal Insulation Through Optimized Sheet Plate Design**
 Eo Min-hun, Lee Sung-Myung, Jang kye-hwan, and Kim Won-Seok(BHI Co., Ltd)
- 11:40 **An Evaluation on the Residual Stresses Induced by EFR Welding of CEDM Nozzle**
 Sang Ho Lee, Gi Yeol Park, and Tae Ryong Kim(KINGS)
- 12:00 **Aging Depth Test of Rubber Blocks by Accelerated Thermal Oxidation Test**
 Junhee Park, Young-Sun Choun, and Min Kyu Kim(KAERI)

8C

10.30 (금)

원전 내진/구조 : NPP's Seismic&Structural Engineering

| 좌장 이진우(Jin Woo Lee), 김민규(Min Kyu Kim)

| 발표장소 오펜(2층)

초청발표

- 09:30 **Rlsk Informed Design Considering the Seismic PSA Results**
 Min Kyu Kim(KAERI)
- 10:00 **Site Response Analysis Using DeepSoil: Case Study of Bangka Site, Indonesia**
 Eko Rudi Iswanto and Eric Yee(KINGS)
- 10:20 **Kenya's Nuclear Power Plant Site Selection and Evaluation Using the Analytical Hierarchy Process**
 Elvis Njenga Kimani and Eric Yee(KINGS)
- 10:40 **Coffee Break**
- 11:00 **Peak-Broadening of Floor Response Spectra for Base Isolated Nuclear Structures**
 Heekun Ju, Young-Sun Choun, and Min-Kyu Kim(KAERI)
- 11:20 **Effects of Moat Wall Impact on the Seismic Response of Base Isolated Nuclear Power Plants**
 Min Kyu Kim and Jung Han Kim(KAERI), Gilberto Mosqueda and Alireza Sarebanha(Univ. of California)
- 11:40 **Comparison of the Results between Empirical and Numerical Tsunami Hazard Assessment for the East Coast of Korea**
 Min Kyu Kim and In-Kil Choi(KAERI), Hyun-Me Rhee(CNU)
- 12:00 **Ultimate Failure Criteria Evaluation of Elbow Components by using Dynamic Cyclic Loading Tests**
 Daegi Hahm and Min Kyu Kim(KAERI)

8D

10.30 (금)

원전 운영 : NPP's Operation

| 좌장 윤덕주(Duk Joo Yoon), 정성규(Sung Gyu Jung)

| 발표장소 오펜(2층)

- 13:30 **Applicability Assessment with New Channel and Bundle-Power Limits for Limiting Condition for Operations of Wolsong Nuclear Power Plant**
 Sungmin Kim and Dongwook Kho(KHNP CRI)
- 13:50 **Effect of the Seal Gap on Reactor Coolant Pump Seal Leakage Rate**
 Donghak Kim and Sangwon Lee(KHNP CRI)
- 14:10 **Performance Test of BF3 Neutron Detection System**
 Yu Sun Choi and Ho Cheol Shin(KHNP CRI), Jin Bok Cho, Sae Hyun Oh, and Seok Jean Ryou(USERS)
- 14:30 **Development of Emergency Operating Strategies for Beyond Design Basis External Event(BDBEE)s in Korean WH Nuclear Power Plants**
 Duk-Joo Yoon, Seung-Chan Lee, Je-Joong Sung, and Sang-Jun Ha(KHNP CRI),
 Soon-Joon Hong, Su-Hyun Hwang, Byung-Chul Lee, and Kang-Min Park(FNC Tech.)
- 14:50 **Optimization for Limitation and Condition for Operation(LCO) of Rod Drop Accidents in Hanul Nuclear Power Plants Units 1&2**
 Duk-Joo Yoon, Seung-Chan Lee, Je-Joong Sung, Hye-min Lee, Sun-Kwan Hong, and Sang-Jun Ha(KHNP CRI)

8E

10. 29 (목)
– 30 (금)

원전 건설/정비 : NPP's Construction/Maintenance – POSTER

| 좌장 박종남(Jong Nam Park), 정영식(Yeong-Sik Jung)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P08E01 **Tube Plugging Criteria for the High-pressure Heaters of Nuclear Power Plant**
Hyungnam Kim, Nam-Cheoul Cho, and Kuk-hee Lee(KHNP CRI)
- P08E02 **Effect of the Shrink Fit and Mechanical Tolerance on Reactor Coolant Pump Flywheel Integrity Evaluation**
Donghak Kim(KHNP CRI)
- P08E03 **Array UT and ECT Systems for Inspection of Nuclear Power Components**
Chan Hee Cho, Tae Hun Lee, and Hyun Ju Yoo(KHNP CRI)
- P08E04 **An Evaluation on the Effect of Residual Stress and Phase Transformation Improvement by Welding in Half Nozzle Repair Method of BMI Nozzle**
Giyeol Park, Sangho Lee, and Taeryong Kim(KINGS)
- P08E05 **Metallurgical Characteristics and Ultrasonic Testing of W/H Reactor RCS Piping**
Byungsik Yoon, Yongsik Kim, and Jaeongseok Lee(KHNP CRI)
- P08E06 **Development of Flow Accelerated Corrosion Reduction Technology**
Min Bum Heo, Won Yeol Choi, Jong Chan Lee, Dong Seok Lim, Byung Il Kwon, Hee Kwon Ku, and Jong Uk Kim(FNC Tech.)
- P08E07 **Analysis of Leak and Plugging Condition for Feedwater Heaters**
Hansul Lee, Yeon Kwan Kang, and Gyunyoung Heo(KHU), Seok Yoon Song and Seung Hwan Oh(KHNP CRI)
- P08E08 **Evaluation of Material Properties in the TP347 Stainless Steel Pipe Bends Manufactured by Induction Bending**
Mi Yeon Lee and Jin Weon Kim(CSU), Tae Soon Kim(KHNP CRI)
- P08E09 **Development of NPP Safety Requirements into Kenya's Grid Codes**
Nguni James Ndirangu and Chang Choong Koo(KINGS)
- P08E10 **Development of Information Management System for Plant Life Cycle Management**
Byon, SuJin, Lee, SangHyun, and Kim, WooJoong(KHNP)
- P08E11 **Economic Assessment of SMART Deployment in Korea using DEEP 5.1**
Kyu-dong Han and Myung-sub Roh(KINGS)
- P08E12 **A Study on the Allowable Safety Factor of Cut-Slopes for Nuclear Facilities**
Kim Myung Soo and Eric Yee(KINGS)
- P08E13 **Economic Analysis on Shrunk-on Type Low Pressure Turbine Retrofit**
Seong-hoon Lee and Prof. Myung-sub Roh(KINGS)
- P08E14 **Calculation for Estimated Criticality Point(ECP) with Enhanced Equation for Accurately Expecting RCS Boron-10 Ratio with Injection of Highly Concentrated Borated Coolant after Unplanned Reactor Shutdown**
Ahn Sang-il(KHNP)

8F

10. 29 (목)
– 30 (금)

원전 운전/구조 (NPP's Operation/Structural Engineering) – POSTER

| 좌장 권원택(Won Taek Kwon), 주광호(Kwang Ho Joo)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P08F01 **Research on How to Remove Efficiently the Condensate Water of Sampling System**
SungHwan Cho, MinSoo Kim, HoYoung Choi, and WonHo In(KAERI)

-
- P08F02** **Composing Experimental Environment of PRIDE Argon cell**
Seonho Noh, Yongkuk Jang, and Il Je Cho(KAERI)
- P08F03** **Verification of Safety Margins of Battery Banks Capacity of Class 1E DC System in a Nuclear Power Plant**
Abdulrauf Lukman(KAIST), Oon-Pyo Zhu(KINS)
- P08F04** **The method to Certify Performance of Long-Lived In-Core Instrumentation**
Roh Kyung-ho, Cha Kyoong-ho, and Moon Sang-rae(KHNP CRI)
- P08F05** **Extension of Surveillance Test Interval of Safety Injection Pump for APR-1400 Reactors to Improve Reliability and Availability of the Pump**
Osama A.Rezk, J. C. Jung, and Lee Yong-Kwan(KINGS)
- P08F06** **A Gas Analysis of the PRIDE Facility's Argon Tank Interior**
Youngkuk Jang, Seonho Noh, and Ilje Cho(KAERI)
- P08F07** **Development of Rainfall-Discharge Model for Future NPP candidate Site**
An, Ji-hong and Eric Yee(KINGS)
- P08F08** **Analytical Study on the Beyond Design Seismic Capacity of Reinforced Concrete Shear Walls**
Tino Sawaldi Adi Nugroho(KAIST), Ho-Seok Chi(KINS)
- P08F09** **A Study on External Fire Damage of Structures subjected to Aircraft Impact**
Sang Shup Shin, Daegi Hahm, and Min Kyu Kim(KAERI)
- P08F10** **Considerations for the Evaluation of Floor Response Spectra of a Seismically Isolated Structure**
Hyung-Kui Park, Jung Han Kim, and Min Kyu Kim(KAERI)
- P08F11** **Irradiated Effect on Shear-Moment Interaction of Reinforced Concrete Slab**
Tae-Hyun Kwon and Jun Yeon Kim(KAERI), HyungTae Kim and Kyoungsoo Park(Yonsei Univ.),
Sang-Ho Kim(Hyundai Engineering)
- P08F12** **Effect of Neutron Irradiation on Beam-Column Interaction of Reinforced Concrete**
Tae-Hyun Kwon, Jiho Park, and Jun Yeon Kim(KAERI), Sang-Ho Kim(Hyundai Engineering),
HyungTae Kim and Kyoungsoo Park(Yonsei Univ.)
- P08F13** **Economic Evaluation of Long-term Operation of NPPs in Korea**
Kihyun Lee, Taeryong Kim, and Cheolwook Jeong(KINGS)
-

제9분과

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

9A 10. 29 (목) 원자력정책, 인력 및 협력 (Nuclear Policy, Human Resources and Cooperation)

| 좌장 정환삼(Hwan Sam Chung), 김웅기(Woong-Ki Kim)

| 발표장소 오팔(2층)

초청발표

- 09:00 Current Status and Challenges for Sustainable Development for Nuclear Energy
Keun Dae Lee(KEEI)
- 09:30 New Regulation for Beyond Design Basis Events and Accident Management
Kyun-Tae Kim(KINS)
- 10:00 The Improvement of the Education Courses for Radiation Protection and Radioisotope Handling
HanSuk KO and Woong Ki KIM(KAERI)
- 10:20 Twitter Analysis of Public Acceptance Between Seoul and Kori of Nuclear Power
Seungkook Roh(KAERI)
- 10:40 Coffee Break
- 11:00 Physical Protection Evaluation Methodology Program Development and Application
Janghoon Seo and Hosik Yoo(KINAC)
- 11:20 Perspectives on the International and Internal Nuclear Security Regime
Sung Soon Jang(KINAC)
- 11:40 Study on Enhancing Nuclear Security Cooperation in Northeast Asia
Jounghoon Lee and Chul Heo(KINAC)
- 12:00 Addressing Safeguards Challenges for the Future
Raed MAJALI and Man-Sung Yim(KAIST)

9B 10. 29 (목) 원자력정책, 인력 및 협력 (Nuclear Policy, Human Resources and Cooperation) — POSTER

— 30 (금)

| 좌장 조승호(Seung-Ho Cho), 남영미(Youngmi Nam)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P09B01 Systematic Approach to Training for System Engineers in Nuclear Power Plants
Jeong-keun Kwak(KHNP)
- P09B02 Nuclear Human Resources Development Program Using Educational Core Simulator
Yu Sun Choi and Soon Kwan Hong(KHNP CRI)
- P09B03 Assessment of Safety Culture within the Pakistan Nuclear Regulatory Authority (PNRA)
Muhammad Afzal(PNRA), Kwang Sik Choi(KINS)
- P09B04 Development of Safety Culture of Regulatory Body in Korea
Myunghyun Yoon, Young Sung Choi, and Kyungjoo Yi(KINS)
- P09B05 Domestic Regulation for Periodic Safety Review of Nuclear Power Plants
Daesik Kim, Seunghoon Ahn, Geunsun Auh, and Jonghyeok Lee(KINS)

- P09B06 **Energy Policy for Malaysia(2013-2050)**
Norashila Yusoff and Seung Jong Oh(KINGS)
- P09B07 **Analysis of Trends in Publications and Citations of Papers on Nuclear Science and Technology Field in Korea: Focusing on the Scopus Data Base**
Young Choon Chun(KAERI)
- P09B08 **The Regime of Spent Nuclear Fuel Management in Korea: Focused on the Licensing Process**
Ae Ri Lee, Yong Soo Hwang, and Sun Young Chang(KINAC)

9C

10. 29 (목)
- 30 (금)

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

| 좌장 김선재(Seon Jae Kim), 한은옥(Eunok Han)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P09C01 **Study on the Efficient Export Control for the Intangible Transfer of Technology**
Sung-ho Yoon, Sun-do Choi, Chansuh Lee, and Jong-sook Kim(KINAC)
- P09C02 **The Role of Text Mining in Export Control**
Jae-woong Tae, Choul-woong Son, and Dong-hoon Shin(KINAC)
- P09C03 **Proliferation Resistance and Safeguardability Assessment of a SFR Metal Fuel Manufacturing Facility(SFMF) using the INPRO Methodology**
H. L. Chang, W. I. Ko, S. H. Park, H. D. Kim, and G. I. Park(KAERI)
- P09C04 **2014 International Physical Protection Advisory Service(IPPAS) Mission to the Republic of Korea(ROK)**
Jung Myung-tak, Jungsoo Kim, and Youngwook Lee(KINAC)
- P09C05 **Analysis on the Revision of the United States Authorizing Procedure for the Transfer of Unclassified Nuclear Technology**
Sung-ho Yoon, Hana Seo, Chansuh Lee, and Jong-sook Kim(KINAC)
- P09C06 **A Study on Comparison of HANARO and KIJANG Research Reactor in Nuclear Safeguards**
Juang Jung, Sung Ho Lee, and Hyun-Jo Kim(KAERI)
- P09C07 **Effectiveness of Existing International Nuclear Liability Regime**
Salwa Al-Doais(KINGS)

원자력계측제어 및 자동원격 (Nuclear I&C and Automatic Remote Systems)

10A
10. 29 (목)

원자력계측제어 및 자동원격 (Nuclear I&C and Automatic Remote Systems)

| 좌장 임춘택(Chuntaek Rim), 김영미(Youngmi Kim)

| 발표장소 팔래스(지하2층)

초청발표

- 09:00 **System and Software Design for the Man Machine Interface System for Shin-Hanul Nuclear Power Plant Units 1 and 2**
Woong Seock Choi, Chang Ho Kim, Yoon Hee Lee, Se Do Sohn, and Seung Min Baek(KEPCO E&C)
- 09:30 **Project Experience of MMIS for Shin-Hanul units 1&2 (Component Design, Manufacturing and Testing)**
Seo-ryoung Koo, and Kook-hun Kim(Doosan)
- 10:00 **Analysis on Dynamic Response of PI Controllers Applied in Nuclear Power Plants**
Myunghoon Ahn, Juyoung Kim, Hyunho Choi, and Hyeongssoon Yim(KEPCO E&C)
- 10:20 **Electromagnetic Interference Analysis of Cabinet for Wireless HART Communication**
Jaeyul Choo, Sang Yong Jeong, Hyung Tae Kim, Yeong Jin Yu, Hyun Shin Park, and Choong Heui Jeong(KINS)
- 10:40 **Coffee Break**
- 11:00 **Development of Heat Insulation Device to Protect Pressure Measuring Instruments from High Temperature Under the Severe Accident**
Jaehyun Ham, Sung Min Shin, and Hyun Gook Kang(KAIST)
- 11:20 **Monitoring the Performance of Aux. Feedwater Pump Using Smart Sensing Model**
Young Gyu No and Poong Hyun Seong(KAIST)
- 11:40 **Progress of Design Improvements for APR1400 Computerized Procedure System from HFE V&V Results and Design Experience**
Sungjin Lee and Nokyu Seong(KHNP CRI)
- 12:00 **Consideration of Command and Control Performance During Accident Management Process at the Nuclear Power Plant**
Nisrene M. Ahmed(KAIST), Sok Chul Kim(KINS)

10B
10. 30 (금)

원자력계측제어 및 자동원격 (Nuclear I&C and Automatic Remote Systems)

| 좌장 박재혁(Jaehyuk Park), 김사길(Sakil Kim)

| 발표장소 팔래스(지하2층)

초청발표

- 09:00 **Nuclear Cyber Security Issues and Policy Recommendations**
Cheol-Kwon Lee, Dong-Young Lee(KAERI), Na-Young Lee and Young-Soo Hwang(KINS)
- 09:30 **Considerations on Cyber Security Assessments of Korean Nuclear Power Plants**
Jung-Woon Lee, Jae-Gu Song, Kyung-Soo Han, and Cheol Kwon Lee(KAERI),
Mingyun Kang(E-Gonggam Co.,Ltd.)
- 10:00 **Development of Behavioral Indicators of Competences for Safety Culture of Nuclear Power Plants : A Preliminary Study**
Kwangsue Moon, Sa Kil Kim, Yeon Ju Oh, Youmin Shin, Yong-Hee Lee, and Tong Il Jang(KAERI)
- 10:20 **A Study on Large Display Panel Design for the Countermeasures Against Team Errors within the Main Control Room of APR-1400**
Sa Kil Kim and Yong Hee Lee(KAERI)

- 10:40 Coffee Break
- 11:00 **Unsafe Acts from Human Performance Analysis with Simulator Training Data**
Sun Yeong Choi, Yochan Kim, Jinkyun Park, Seunghwan Kim, and Wondea Jung(KAERI)
- 11:20 **An Experiment on the Impact of Communication Problems in the Multi-Cultural Operation of NPPs' Emergency Operation**
Seongkeun Kang, Chanyoung Lee, and Poong Hyun Seong(KAIST), Jun Su Ha(KUSTAR)
- 11:40 **Development of Evaluation Method for Nuclear Safety Culture of an Operating Team Using Reliability Analysis Method**
Sangmin Han and Poong Hyun Seong(KAIST)
- 12:00 **An Experimental Evaluation for an Effect of Operating Support Systems on Human Operators in NPPs**
Moon Kyoung Choi and Poong Hyun Seong(KAIST)

10C 10. 30 (금)

원자력계측제어 및 자동원격 (Nuclear I&C and Automatic Remote Systems)

| 좌장 이창재(Changjae Lee), 허균영(Gyunyoung Heo)

| 발표장소 팔래스(지하2층)

- 13:30 **Review of Byzantine General Problems in the Reactor Protection System of Korean Nuclear Power Plants**
Eungse Oh and Yungoo Kim(KHNP CRI)
- 13:50 **A Method to Select Software Test Cases in Consideration of Past Input Sequence**
Hee Eun Kim, Bo Gyung Kim, and Hyun Gook Kang(KAIST)
- 14:10 **Detection of Motor Abnormalities by Using Impedance Analysis**
Sung Min Shin, Bo Hwan Choi, and Hyun Gook Kang(KAIST)
- 14:30 **Prediction of Hydrogen Concentration in Containment Under Severe Accidents Using CFNN**
Geon Pil Choi, Dong Yeong Kim, and Man Gyun Na(CSU)
- 14:50 **Prediction of Golden Time for Recovering Reactor Core Coolability Using GMDH Under Severe Post-LOCA Circumstances**
Ju Hyun Back, Kwae Hwan Yoo, and Man Gyun Na(CSU)
- 15:10 **Service Life Extension and Maintenance Optimization of Electromechanical Components**
Robby Christian and Hyun Gook Kang(KAIST)

10D 10. 29 (목)

원자력계측제어 및 자동원격 (Nuclear I&C and Automatic Remote Systems) — POSTER

| 좌장 허섭(Seop Hur), 김종현(Jonghyun Kim)

| 발표장소 다이아몬드(지하1층)

| 게시시간 10월 29일(목) 13:00 ~ 18:00 / 10월 30일(금) 09:00 ~ 17:00

| 저자 발표시간 10월 29일(목) 13:00 ~ 15:00

- P10D01 **Secure Coding for Safety I&C Systems on Nuclear Power Plants**
Y. M. Kim and H. S. Park(KINS), T. H. KIM(Formal Works Inc.,)
- P10D02 **Simulation Approach for Safety Evaluation of Smart Transmitters in NPPs**
Yeong Jin Yu, Sang Yong Jeong, Hyung Tae Kim, Jaeyul Choo, Hyun Shin Park, and Choong Heui Jeong(KINS)
Jea Heung Lee(Hanbat National Univ.)
- P10D03 **Implementation of FPGA-Based Diverse Protection System**
Soo Yun Hwang, Yoon Hee Lee, Se Do Shan, and Seung Min Baek(KEPCO E&C)
- P10D04 **Response Time Evaluation for the Plant Protection System Using a Combined Technique of Analysis and Test**
Chang Jae Lee, Seung Han, Jae Hee Yun, and Seung Min Baek(KEPCO E&C)

-
- P10D05 **A Behavior of Strobe Light in Non-Visibility (Dense Fog) Environments**
Jai Wan Cho, Young Soo Choi, and Kyung Min Jeong(KAERI)
- P10D06 **Recognition of Instrumentation Gauge in the Nuclear Power Plant**
Jai Wan Cho and Kyung Min Jeong(KAERI)
- P10D07 **A Strategy for Accomplishing Human-Performance Monitoring of Constructing NPPs**
Sung Chanho and Jung Yeonsub(KHNP CRI)
- P10D08 **Verification of BGA Type FPGA Logic Applied to a Control Equipment with Safety Class Using the Special Socket**
YounHu Chung, Kwanwoo Yoo, Myeongkyun Lee, and Donghwa Yun(PONU-Tech)
- P10D09 **The HMI Development of SMART Training Simulator Based on Design Analysis Codes**
Woo Seok Heo, Young Rok Sim, Eun Jung Kim, and Kwang Young Sohn(MIRAE EN),
Joon Ku Lee, Kwang Il Jeong, and Geun Ok Park(KAERI)
- P10D10 **Estimation of Processor Module Life in NPP's Environment**
Pil ju Lee, Mingyu Kim, and Ilkoo Han(PONU-Tech)
- P10D11 **Modeling Human Error Mechanism for Soft Control in Advanced Control Rooms (ACRs)**
Hanan Salah Ali Aljneibi(Khalifa Univ.), Jun Su Ha, Seongkeun Kang, and Poong Hyun Seong(KAIST)
- P10D12 **Optimization of Allowed Outage Time and Surveillance Test Intervals**
Mujahed Al-Dheeb, Sunkoo Kang, and Jonghyun Kim(KINGS)
- P10D13 **Identification of Error of Commissions in the LOCA Using the CESA Method**
Myeruyert Tukhbyet-olla, Sunkoo Kang, and Jonghyun Kim(KINGS)
- P10D14 **Lesson Learned-CGID Based on the Method1 and Method 2 for Digital Equipment**
Wonil Hwang, Kwang Young Sohn, Chang Hwan Cho, and Sung Jong Kim(MIRAE EN)
- P10D15 **System and Software Design for the Plant Protection System for Shin-Hanul Nuclear Power Plant Units 1 and 2**
In Seok Hwang, Young Geul Kim, Woong Seock Choi, and Se Do Sohn(KEPCO E&C)
- P10D16 **Implementation of a RPS Cyber Security Test-bed with Two PLCs**
Jinsoo Shin and Gyunyoung Heo(KHU), Hanseong Son(Joongbu Univ.), Yongkyu An and Rizwan-uddin(UIUC)
- P10D17 **An Approach to Human Error Hazard Detection of Unexpected Situations in NPPs**
Sangjun Park, Yeonju Oh, Youmin Shin, and Yong-Hee Lee(KAERI)
- P10D18 **An Applicability Evaluation on Real-time Kernel Prototype for Nuclear Safety-Grade Controller**
Kwang Il Jeong, Joon Ku Lee, Geun Ok Park, Je Youn Park, and In Soo Koo(KAERI), Byeong Seok Yoo(MDS Tech.)
- P10D19 **Characteristics of Acceleration and Aconstic Emission Signals from Mechanical Seals**
Do Hwan Lee and Che Woong Ha(KHNP CRI)
- P10D20 **Discussion of ISV Scenario Scope with Operating Process Element**
Yun Goo Kim and Eungse Oh(KHNP CRI)
- P10D21 **A Performance Improvement of Power Supply Module for Safety-related Controller**
Jong-Kyun Kim, Dong-Hwa Yun, Sung-Jae Hwang, Myeong-Kyun Lee, and Kwan-Woo Yoo(PONU-Tech)
- P10D22 **A Study on Evaluation of Training Program for MCR Operators of SMART Simulator**
Hyun Jun Park, Joon Ku Lee, and Kwang Il Jeong(KAERI)

A
10. 30 (금)

학생/청년 Competition Session

| 좌장 반치범(Chi Bum BAHN), 유종성(Jongsung Yoo)

| 발표장소 메이플(2층)

- 13:30 Development of a 1D Thermal-hydraulic Analysis Code for Once-through Steam Generator in SMRs Using Straight Tubes
Youngjae Park, Iijin Kim, and Hyungdae Kim(KHU)
- 13:50 Feasibility of Strong and Quasi-Monochromatic Gamma-Ray Generation by the Laser Compton Scattering
Jiyoung Lee, Hasseeb ur Rehman, and Yonghee Kim(KAIST)
- 14:10 Decontamination of Metal Ions in Soil by Supercritical CO₂ Extraction with Catecholamine Ligand
Jihye Park, Hakwon Kim, and Kwangheon Park(KHU)
- 14:30 Coating Properties of WC-Ni Cold Spray Coating for the Application in Secondary Piping System of Nuclear Power Plants
Jeong Won kim, Seunghyun Kim, and Ji Hyun Kim(UNIST)
- 14:50 Microstructure and Mechanical Property Change of Dissimilar Metal Welds Alloy 600-Alloy 182-A508 Gr.3 According to Thermal Aging Effect at 400°C
Jun Hyuk Ham, Kyoung Joon Choi, and Ji Hyun Kim(UNIST)
- 15:10 Coffee Break
- 15:30 Oxidation Kinetics of the Zr-1Nb-1Sn-0.1Fe at Temperatures of 1000-1200°C
Cheol Min Lee and Dong-Seong Sohn(UNIST)
- 15:50 Effect of Na Environment of Growth Rate of Grain and Nucleation of Precipitate in F/M Steel Cladding under Sodium and Ar-gas Environment at 650°C
Tae Yong kim and Ji Hyun Kim(UNIST), Sang Hun Shin(KAERI)

B
10. 30 (금)

학생/청년 Competition Session

| 좌장 하광순(Kwang Soon Ha), 윤한영(Hanyoung Yoon)

| 발표장소 제니퍼(2층)

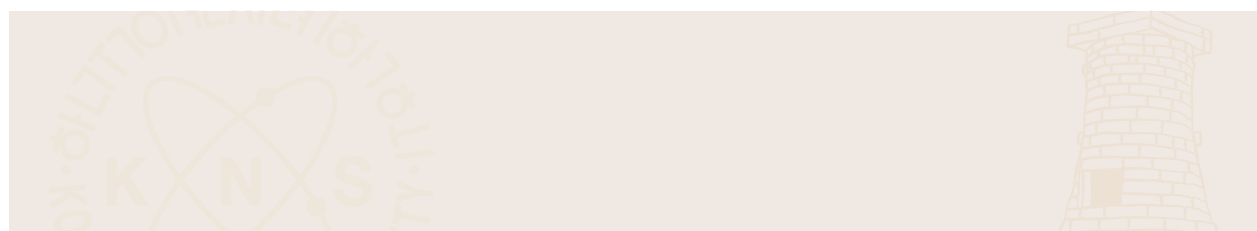
- 13:30 Analysis of a Double-Pipe Heat Exchanger Performance Using Heat Structure Coupling of MARS and CUPID
M. Amidu and H. Kim(KHU), H. K. Cho(SNU)
- 13:50 Visualization of Cross-Sectional Flow Structure During Condensation of Steam in a Slightly Inclined Horizontal Tube
Andree Pusey and H. Kim(KHU), T. S. Kwon(KAERI)
- 14:10 A Study on the Dependency Between Turbulent Models and Mesh Configurations of CFD Codes
Jungjin Bang, Yujin Heo, and Dong-Wook Jerng(CAU)
- 14:30 Experimental Investigation on Heat Transfer of a Single Droplet During Collision with a Heated Wall Above Leidenfrost Temperature
Junseok Park and Hyungdae Kim(KHU)
- 14:50 Validation of CFD Modeling for Multi-dimensional Effects in Ex-vessel Debris Bed Coolability
Mooneon Lee, Jin Ho Park, and Hyun Sun Park(POSTECH)
- 15:10 Coffee Break
- 15:30 A Preliminary Experimental Study of Filmwise and Dropwise Condensation on SUS316 Surface
Jae Young Choi and Yong Hoon Jeong(KAIST), Watanabe Noriyuki(TIT)

연구부회 / 지부 활동 및 계획 발표회

| 시상식 2015년 10월 30일(금) 13:30 ~ 17:10

| 장 소 사파이어홀 (2F)

시간계획	구분	발표자
13:30 ~ 13:35 (05')	학계 부회장 인사말	김용수 부회장(사회)
13:35 ~ 14:00 (25')	원자로시스템기술 연구부회	이두정 연구부회장
14:00 ~ 14:25 (25')	핵연료 및 원자력재료 연구부회	이찬복 연구부회장
14:25 ~ 14:50 (25')	원자력열수력 및 안전 연구부회	정법동 연구부회장
14:50 ~ 15:15 (25')	방사선이용 및 방호 연구부회	김교윤 연구부회장
15:15 ~ 15:40 (25')	휴식	
15:40 ~ 16:05 (25')	대구/경북 지부	이재영 지부장
16:05 ~ 16:30 (25')	광주/전남/전북 지부	김송평 지부장
16:30 ~ 17:55 (25')	청년지부	이연건 지부장
17:55 ~ 17:10 (15')	마무리	



교통편

| 호텔현대 경주 | 경상북도 경주시 보문로 338(신평동) Tel. 054-748-2233



고속버스

운행구간	첫차~막차	배차간격	소요시간
서울 → 경주	06:10 ~ 23:55 ※심야	25분 ~	4시간 30분
대전 → 경주	07:40, 14:50	1일 2회	2시간 50분
대구 → 경주	06:30 ~ 21:20	40분	1시간
부산 → 경주	08:00 ~ 20:30 ※심야	1시간	50분
광주 → 경주	09:45, 16:50	1일 2회	4시간
김해공항 → 포항, 경주	07:05 ~ 22:05 *국내선 출발기준 국제선은 5~10분	1시간	1시간 10분

※ 변동 사항이 발생할 수 있으니 보다 자세한 사항은 아래 번호로 전화 문의 바랍니다.

- 서울(서울고속버스터미널) 02-535-4151
- 대전(대전북합터미널) 1577-2259
- 대구(대구금호천일고속버스터미널) 1588-6900
- 부산(부산중합버스터미널) 1577-0056

인천국제공항 버스

운행구간	시간	소요시간
인천국제공항 → 경주시외버스	07:00, 08:50, 13:40, 17:10,	5시간 30분

KTX / 기차

운행구간	첫차~막차	열차	소요시간
서울→신경주	05:30 ~ 22:00	KTX	2시간 05분
신경주→서울	05:58 ~ 21:58	KTX	2시간 05분
서울→서경주	09:35 ~ 16:05	새마을	4시간 40분
서경주→서울	08:35 ~ 18:00	새마을	4시간 40분

• 신경주역: 시내버스 700번 승차 → 현대호텔 정류장 하차(요금 1,500원)

택시

승차	소요시간	요금
신경주역	약 25~30분 소요	약 2만 5천원
경주역	약 15분 소요	약 1만원

비행기

김포 ↔ 부산, 김포 ↔ 울산, 김포 ↔ 포항 간 운행

※ 자세한 운행 시간 및 운임은 각 항공사에 문의하시거나 홈페이지를 참고하여 주십시오. (아시아나 항공 1588-8000, flyasiana.com,



International Conference on Neutron Scattering

July 9 - 13, 2017 | Daejeon Convention Center, Daejeon, Korea

Dear Colleagues,

On the behalf of the Organizing Committee, we are pleased to announce that the International Conference on Neutron Scattering 2017 (ICNS 2017) will take place in Daejeon, Republic of Korea, at the Daejeon Convention Center from July 9 to 13, 2017.

The ICNS 2017 will be the largest international platform for sharing and exchanging the latest exciting advances in neutron scattering science, which will bring together scientists from a wide range of disciplines including physics, biology, chemistry, materials science, engineering materials, earth science, neutron sources and instrumentations. The ICNS is held every four years cycling through Europe, America and Asia-Oceania regions. Previous ICNS includes ICNS2013 (Edinburgh, UK), ICNS2009 (Knoxville, US), ICNS2005 (Sydney, Australia), ICNS2001 (Munich, Germany), ICNS97 (Toronto, Canada), ICNS94 (Sendai, Japan), ICNS91 (Oxford, UK), ICNS88 (Grenoble, France), ICNS85 (Santa Fe, US), and ICNS82 (Hakone, Japan).

Surrounded by national mountain park and towns enriched with charming temples and historic remains of ancient dynasties, Daejeon, the host city of the ICNS 2017, is located at the central region of Korea and about 50 minutes away from Seoul, the capital city of Korea, by high speed train. Daejeon is known as the City of Science which has been a power house of most exciting scientific and technological advances in Korea over the last thirty years with 30 government research institutes including the Korea Atomic Energy Research Institute (KAERI) where the HANARO Neutron Research Facility belongs, and 19 universities including KAIST. The Daejeon Convention Center is well equipped with modern conference facilities and closely located with a spectrum of hotel accommodations, museums and art galleries, and universities, making it a convenient and culturally vibrant venue for the ICNS 2017.

The Organizing Committee will do its best to make your attendance of the ICNS 2017 enjoyable and memorable as well as scientifically fruitful.

We look forward to welcoming you in Daejeon, Korea in 2017.

Sincerely yours,

The Organizing Committee of ICNS 2017
co-Chair, **In-Cheol Lim** (Vice President of KAERI)
co-Chair, **Sung-Min Choi** (President of KNBUA)



icns2017.org

Call for Papers

www.psam13.org

PSAM 13 13th International Conference on Probabilistic Safety Assessment and Management

October 2 (Sun) ~ 7 (Fri), 2016 Sheraton Grande Walkerhill, Seoul, Korea

Welcome to Seoul, Korea

In October 2016, the 13th International Conference on Probabilistic Safety Assessment and Management (PSAM13) will take place in Seoul which is the capital of Korea with over 600 years of history and the heart of Korea's culture and educations as well as politics and economics. It is hoped that this thirteenth edition of conference will be the largest PSAM yet and attendees are encouraged to bring their families to the heart of Korea.

PSAM13 is a biennial international topical conference for Probabilistic Safety Assessment which is one of the most prestigious academic conferences. It is expected that more than 600 papers including invited and contributed lectures and discussion will be presented in more than 100 sessions during the conference period under the topics below.

Technical Topics

1. Risk Assessment & Management
2. External Events
3. Severe Accidents
4. Environmental Risk
5. PSA Applications
6. Risk-Informed Regulation (RIR)
7. Human Reliability Analysis & Human and Organizational Factors
8. Structural Reliability
9. Waste Management
10. Industrial Safety
11. Transportation
12. Space and Aviation

Submission of Abstracts

Authors should submit about 500 word summaries in English (text only) via the conference official website at www.psam13.org. The summary should clearly state the objectives, methods, results and conclusions of the paper.

Important Dates

Abstract Submission Starts	2015. 9. 1
Abstracts Submission Due	2016. 1. 31
Review Results Notification to Authors	2016. 3. 1
Draft Papers Submission Due	2016. 5. 1
Full Paper Submission Due	2016. 6. 1
Early Registration Deadline	2016. 6. 30

Organizing Committee

Honorary Chair
General Chair
Advisory Committee Chair
Technical Program Committee Chair
Organizing Committee Chair

KunMo Chung (KEPCO)
Chang Kue Park (Pohang University of Science & Technology)
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Moosung Jae (Hanyang University)
Joon-Eon Yang (Korea Atomic Energy Research Institute)

Hosted by  International Association for PSAM

Organized by  KNS 심원 한국원자력학회 KOREAN NUCLEAR SOCIETY

Supported by  SEOUL METROPOLITAN GOVERNMENT

Contact for
Secretariat Office

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지구의 안전을 최우선으로 생각합니다



한국수력원자력은 안전한 에너지만이 지속가능한 에너지라고 생각하기에
더 안전한 수력, 원자력, 그리고 신재생에너지로
우리 지구에 지속가능한 에너지를 더하고 있습니다



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생활 속 안전 위협요소! **안전신문고** 로 신고해주세요

앱(안드로이드/iOS 모두 가능)과 홈페이지(www.safepeople.go.kr)를 통해 언제 어디서나 편리하게 신고하실 수 있습니다.



한국원자력연구소의 연수원 건물에서
첫 업무 시작(1975년 서울시 공릉동)



한국전력기술을 원전설계 전문기관으로
육성을 결정한 정부 문서(1976년)

“열심히 공부하며 성실하게 일하자”

1970년대 초반 석유파동이 우리 경제에 근심의 골을 깊게 하였습니다.
그래서 연료를 안정적으로 공급받을 수 있고 경제성이 뛰어난 발전소를
우리 손으로 만들어 보자는 야심찬 도전을 했습니다.

기술자도, 자료도, 자본도 준비되지 않았습니다.

오로지 우리 모두는 일하면서 공부하고, 밤을 새워 토론해야 했습니다.

그리고 부족한 것은 선진국에서 배워보려고 했지만, 기술의 장벽은 높기만 했습니다.

하얀 캔버스 위의 선들이 하나, 둘 모이면서

어느덧 원자력발전소와 화력발전소가 그려지기 시작했습니다.

그리고 지금은 세계 발전소 설계기술을 선도하는 세계 최고의 회사가 되었습니다.

이제 한국전력기술은 다시 한번, 일하면서 공부했던 우리 선배들의 피땀어린
노력을 생각하며 인류번영의 에너지 청사진을 그려 가겠습니다.

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한국전력기술

熱心히 도夫하며 誠實하게 일하자

선배들의 뒤를 이어 인류번영의 청사진을 그려갑니다



건설은 예술이다

감성과 상상력을 더할 때, 건설은 살아 숨쉬는 예술이 됩니다
기술을 넘어 감동을 짓습니다

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현대건설은 기획과 설계, 금융, 구매, 시공, 운영, 관리에 이르는
종합적인 서비스로 글로벌 건설 시장을 선도하고 있습니다

소통과 혁신, 하나된 힘! 글로벌 KNF.

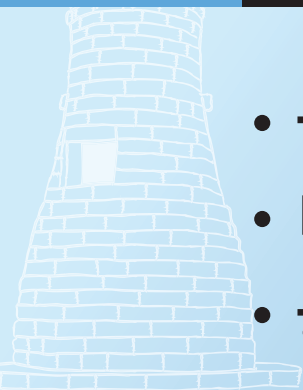
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인류의 풍요로운 미래를 만들어 갑니다.
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- 내실을 기하는 원자력학회
- 공지를 갖는 원자력인



사단법인 한국원자력학회
KOREAN NUCLEAR SOCIETY

표준행사 일지

[illegible]

빛이 닿지 않는 곳을 우리의 기술로 채워줍니다

지구의 가치를 높이는 기술 두산중공업

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