KNS(P)-001-2025 춘계학술발표회 프로그램

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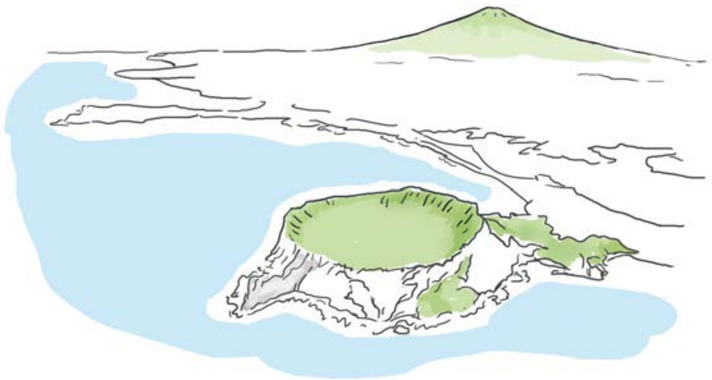
2025 KNS Spring Conference

2025 춘계학술발표회

KOREAN NUCLEAR SOCIETY

2025. 5. 21.(수) ~ 23.(금)

제주 국제컨벤션센터



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사단법인 한국원자력학회

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KOREAN NUCLEAR SOCIETY

CONTENTS

학회장 인사말

이기복 학회장

2025년 한국원자력학회 춘계 학술발표회에 참가하신 여러분을 진심으로 환영합니다. 아울러 격려차 참석해 주신 귀빈 여러분께도 환영 인사를 드립니다. 눈부신 5월, 이곳 아름다운 제주에서 원자력학회 춘계 학술발표회를 개최하게 되어 매우 기쁘게 생각합니다.

이번 춘계 학술발표회에서는 약 700편의 논문이 발표됩니다. 5월 21일 수요일에는 12개 연구회와 과제에서 다양한 주제를 토론하는 18개 워크숍이 개최됩니다. 여기에는 i-SMR과 해양 SMR 등 여러 가지 SMR에 대한 기술개발 현황과 활용 방안 그리고 규제 현안에 대한 워크숍, K-원전 개발 현재와 미래라는 주제의 워크숍과 사용후핵연료의 안전한 저장을 위한 준비와 원전 해체 사업 동향을 논의하는 워크숍이 개최됩니다. 방사선 분야에서는 국내 중성자 활용 기술과 전망이라는 워크숍과 LNT 모델의 과학적 이해와 쟁점을 다루는 워크숍이 개최됩니다. 또한 차세대 원자력정책센터 과제에서 소듐냉각고속로 국내 개발 현황 및 향후 개발 방향, 민간주도 차세대 원자력 사업화 현황 공유 및 제언을 논의하는 워크숍이 개최됩니다. 이번에는 특별히 대학(원)생과 신진연구자를 대상으로 인공지능 강습회가 개최되고 후행핵주기 분야에 참여하는 기업들이 정보를 교류하는 마당인 산업계 세션도 개최됩니다. 그리고 AI가 접목된 원자력의 미래를 제시하고자 'AI X NUCLEAR 마음껏 상상하라!'라는 원자력 학생 경진대회의 결과를 만찬 행사에서 공개하니 많은 관심과 성원을 보내주시기 바랍니다.

우리 학회와 신재생에너지학회, 전기학회는 국가 에너지 정책이 바로 설 수 있도록 3개 학회 공동워크숍을 3년 전부터 개최하고 있습니다. 공교롭게도 우리 학술발표회 기간과 겹쳐 함께 자리하지 못하지만, 미래 전력수급 문제를 해결하고자 손을 맞잡고 가는 3개 학회에 응원을 보내주시기 바랍니다.

이번 학술발표회에서 두 분의 초청 강연자를 모셨습니다. 한 분은 김무환 전 포항공대 총장님입니다. 원자력의 현안과 해결 방안에 대한 혜안을 보여주실 것입니다. 또 한 분은 현재 핵정책학회의 회장이신 전봉근 국립외교원 명예교수님입니다. 경제적이고 지속가능한 원자력을 보장하고 핵연료의 안정적 공급을 위해, 핵연료주기 기술의 도입에 어떤 준비가 필요한지 이야기해 주실 것입니다.

그리고 지난 임기 동안 많은 활동과 성과를 보여준 제36대 정범진 학회장님과 임원님들의 노고에 감사드리며, 연임하지 않은 임원 등에 대한 감사장과 소정의 기념품을 드리고자 합니다. 지난 한 해 동안 열정을 다해 준 수고에 진심으로 감사드립니다.

존경하는 회원 여러분!

이제 6월 3일에 대선이 치러집니다. 국가 미래를 위해 탈원전의 악몽이 결코 되풀이되어선 안 되고, 원자력이 정쟁의 대상이 되어서도 안 됩니다. 우리나라 산업 경쟁력의 바탕이 되는, 경제적이며 안정적 에너지 공급을 위해 원자력은 확대되어야 합니다. 우리 학회는 원자력 기술의 향상과 안전에 기여하고, 바람직한 원자력 정책을 제안하고 국민 지지기반 확대를 위한 노력을 열심히 하고 있습니다. 회원님의 적극적 응원과 동참을 바랍니다. 학술발표회 동안 서로 소통하고 아름다운 제주의 시간을 만끽하시기 바라며, 여러분의 가정에 늘 건강과 행복이 가득하길 기원합니다.

한국원자력학회 37대 학회장 이 기 복 拜上

학술발표회 전체 일정

| 등 록 | 5.21.(수) 12:30~17:00 / 5.22.(목) 08:00~17:00 / 5.23.(금) 08:00~12:00 |

5. 21.(수) Workshop

	프로그램	참가비	회의장
B	K-원전 개발 현재와 미래	-	301
C	혁신형 SMR 노심설계 기술개발 워크숍	30,000	한라홀B
D	사용후핵연료의 안전한 저장을 위한 준비	50,000	202B
E	원전해체 사업 동향 및 표준화 정보교류회	-	203
F	경수형 SMR 과 MSR 핵연료 및 재료 연구현황과 전망	60,000	삼다홀A
G	글로벌 SMR 규제 동향 및 기술개발 현황	-	한라홀A
H	수출형 원전 중대사고 완화 기술 연구 현황 및 개발 방향	50,000	302
I	LNT 모델의 과학적 이해와 쟁점	-	202A
J	국내 중성자 활용 기술 현황 및 전망	50,000	201A
K	오랜 동행: 문화유산과 원자력 그리고 미래	-	201B
L	제2차 핵융합/원자력 재료 이온빔 조사 시험 및 평가 워크숍	-	401A
M	우주부품 방사선 영향평가 활용 현황	50,000	401B
N	극한내압 격납건물 구조건전성 평가기술 개발 현황	-	400
O	한·미 원자력협력협정 개정 10주년 : 성과와 도전, 그리고 미래	-	402A
P	SMR 운전관련 국내 인간공학/인적수행도 현안 워크	50,000	402B
Q	소듐냉각고속로 국내 개발 현황 및 향후개발 방향	-	303
R	민간주도 차세대 원자력 사업화 현황 공유 및 제언	-	300
S	대학(원)생 대상 인공지능 강습회	-	삼다홀B

A : 관련 기관 사정으로 취소됨.

참가자 중식

일시	장소
5. 22.(목) 11:30 ~ 13:30	탐라홀 (5F)

산업계 세션

일시	장소
5. 22.(목) 09:40 ~ 11:00	삼다홀A (3F)

제100차 평의원회

일시	장소
5. 22.(목) 12:00 ~ 13:30	오션뷰 (5F)

개회식 및 초청강연

일시	장소
5. 22.(목) 16:00 ~ 18:00	한라홀 (3F)

만찬 및 학생 경진대회

일시	장소
5. 22.(목) 18:00 ~ 19:30	탐라홀 (5F)

5. 22.(목) ~ 23.(금) 구두발표

	세션명	발표장	발표일
1A	원자로시스템기술 1 (Reactor System Technology 1)	삼다홀B	5.22.(목) 오전
1B	원자로시스템기술 2 (Reactor System Technology 2)	삼다홀B	5.23.(금) 오전
2A	원자로물리 및 계산과학 1 (Reactor Physics and Computational Science 1)	401B	5.22.(목) 오전
2B	원자로물리 및 계산과학 2 (Reactor Physics and Computational Science 2)	402A	5.22.(목) 오전
2C	원자로물리 및 계산과학 3 (Reactor Physics and Computational Science 3)	402A	5.22.(목) 오후
2D	원자로물리 및 계산과학 4 (Reactor Physics and Computational Science 4)	402A	5.23.(금) 오전
3A	원자력시설해체 및 방폐물관리 1 (Nuclear Facility Decommisioning and Radioactive Waste Management 1)	202A	5.22.(목) 오전
3B	원자력시설해체 및 방폐물관리 2 (Nuclear Facility Decommisioning and Radioactive Waste Management 2)	202A	5.22.(목) 오후
3C	원자력시설해체 및 방폐물관리 3 (Nuclear Facility Decommisioning and Radioactive Waste Management 3)	202A	5.23.(금) 오전
4A	핵연료제조, 성능 및 평가 I (Fuel Fabrication, Performance & Test I)	202B	5.22.(목) 오전
4B	재료열화 및 기기건전성 I (Materials Degradation and Structural Integrity I)	203	5.22.(목) 오전
4C	핵연료제조, 성능 및 평가 II (Fuel Fabrication, Performance & Test II)	202B	5.22.(목) 오후
4D	혁신제조 및 신소재 (Innovative Manufacturing and New Materials)	203	5.22.(목) 오후
4E	용융염원자로 재료 (Materials for Molten Salt Reactor)	202B	5.23.(금) 오전
4F	재료열화 및 기기건전성 II (Materials Degradation and Structural Integrity II)	203	5.23.(금) 오전
5A	원자력 열수력 실험 (Thermal Hydraulic Experiment)	301	5.22.(목) 오전
5B	열수력해석 (Thermal Hydraulic Analysis)	302	5.22.(목) 오전
5C	원자력 열수력 실험 (Thermal Hydraulic Experiment)	301	5.22.(목) 오후
5D	열수력해석 / 열수력 신기술 (Thermal Hydraulic Analysis / Advanced Thermal Hydraulics)	302	5.22.(목) 오후
5E	안전해석 현안 (Safety Analysis Issues)	301	5.23.(금) 오전
5F	열수력 신기술 (Advanced Thermal Hydraulics)	302	5.23.(금) 오전
6A	확률론적 안전성평가 1 (PSA 1)	201A	5.22.(목) 오전
6B	중대사고 1 (Severe Accident 1)	201B	5.22.(목) 오전
6C	안전현안 (Safety Issues)	201A	5.22.(목) 오후
6D	화재방호 (Fire safety in nuclear facility)	201B	5.22.(목) 오후
6E	확률론적 안전성평가 2 (PSA 2)	201A	5.23.(금) 오전
6F	중대사고 2 (Severe Accident 2)	201B	5.23.(금) 오전
7A	방사선 방호 (Radiation Protection)	303B	5.22.(목) 오전
8A	방사선 이용 및 기기 I (Raidation Utilization and Instrumentation I)	303A	5.22.(목) 오전
8B	방사선 이용 및 기기 II (Raidation Utilization and Instrumentation II)	303A	5.22.(목) 오후
9A	양자공학 및 핵융합기술 (Quantum Engineering and Nuclear Fusion)	401B	5.22.(목) 오후
10A	지진 및 외부재해 (Seismic and External Hazard)	400	5.22.(목) 오전
10B	부지 및 건설 (Siting and Construction)	400	5.22.(목) 오후
10C	수화학 (Water Chemistry)	401A	5.22.(목) 오후
10D	운전/정비/열화 (Operation, Maintenance, Aging Management)	400	5.23.(금) 오전
10E	구조 (Structural Analysis)	401A	5.23.(금) 오전
11A	원자력정책, 인력 및 협력 (Nuclear Policy, Human Resources and Cooperation)	401A	5.22.(목) 오전
12A	계측제어 및 인간공학 · 자동원격 1 (Nuclear I&C, Human Factors and Automatic Remote Systems 1)	402B	5.22.(목) 오전
12B	계측제어 및 인간공학 · 자동원격 2 (Nuclear I&C, Human Factors and Automatic Remote Systems 2)	402B	5.22.(목) 오후
12C	계측제어 및 인간공학 · 자동원격 3 (Nuclear I&C, Human Factors and Automatic Remote Systems 3)	402B	5.23.(금) 오전

5. 22.(목) ~ 23.(금) 포스터 게시 및 발표

포스터 게시기간	장소
5.22.(목) 13:00 ~ 18:00 **[저자 발표시간 13:00 ~ 14:00]** 5.23.(금) 09:00 ~ 12:00	3층 로비

역대회장 초청 간담회

일시	장소
5. 23.(금) 08:00 ~ 09:30	300

지부 활동결과 및 계획발표회

일시	장소
5. 23.(금) 10:00 ~ 11:00	303B

제37대 임원진

회장

이기복

수석부회장

최성민

부회장

김종두

문주현

설영실

전대욱

황태석

감사

박석빈

최재돈

총무이사

강경호

홍서기

학술이사

김종성

조형규

사업이사

박홍준

임채준

편집이사

이영일

이현철

재무이사

이정훈

홍승오

홍보이사

고문성

이유호

국제협력이사

박지영

이덕중

대학 · 청년이사

성지현

이지민

기획이사

박현식

심재구

특임이사

노동석

최기용

고급정책연구소

심형진 소장

원자력이슈위원회 위원

위원장


최성민

당연직 위원


김동진


김민규


박홍준


선광민


신창호


심재구


이덕중


이정익


임호곤


정경재


정병렬

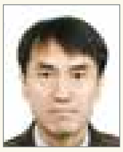

지성훈


최기용


최종균

임명직 위원


김광표


김명섭


김유광


김택동


노동석


문주현


박태진


성기봉


손희동


윤종일


이성복


이우상


이지훈


이현철


정익


조형규

원자력소통위원회 위원

위원장

문주현

당연직 위원

고문성

이유호

임명직 위원

노동석

박홍준

이현철

정용훈

정재준

조동건

연구부회장 및 차기연구부회장 / 지부장

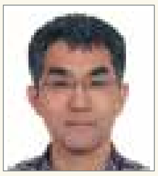
연구부회장/차기연구부회장

원자로시스템기술


정병렬


이정익

방사선 방호


신창호


임종명

원자로물리 및 계산과학


이덕중


이현철

방사선 이용 및 기기


선광민


김기현

원자력시설해체 및 방사성폐기물관리


지성훈


권장순

양자공학 및 핵융합기술


정경재


김석권

핵연료 및 원자력재료


김동진


류호진

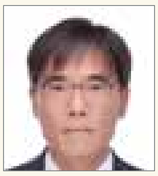
원전건설 및 운영기술


김민규


송규민

원자력열수력


최기용


이상원

원자력정책, 인력 및 협력


박홍준


정익

원자력 안전


임호곤


하광순

원자력계측제어, 인간공학 및 자동원격


최종균


이정훈

국내외 지부장


송종순
광주/전남/전북 지부


이상훈
대구/경북 지부


이덕중
부산/울산/경남 지부


최용준
미국 지부

청년지부


조재현 지부장

여성지부


전은주 지부장

학생지부


강정민 지부장


송민섭 지도교수

편집위원회 위원

위원장


나만균

국내 부위원장


김용민


김응수


선광민


양재호


이덕중


이동원

국외 부위원장


Xu Cheng


Taishi Kobayashi

국내 위원


김만철


김용균


김인중


박호진


윤종일


이현철


이영일


임채영


장동찬


정만희


허남수

국외 위원


Akio Gofuku


Belle R. Upadhyaya


Elia Merzari


Jean Noirot


John C. Jin


Jinbiao Xiong


Haori Yang

포상 및 장학위원회 위원 / 사무국

위원장

전대욱

위원

김광표

김종성

노동석

성지현

송민섭

심재구

염화성

이준엽

이지민

이지민

이지훈

임채준

장근옥

정희준

조재선

조형규

최기용

사무총장

정연섭

실장

민현정

팀장

송지현

팀장

이연화

팀장

유진원

산업계 세션

| 일시 2025. 5. 22.(목) 09:40 ~ 11:00
| 장소 삼다홀A (3F)

일 정	내 용
	[사회 : 심재구 기획이사]
09:40 ~ 09:45	**[인사말]** 이기복 (한국원자력학회장)
09:45 ~ 09:50	**산업계 세션 및 참석자 소개** 심재구 (기획이사)
09:50 ~ 10:05	**[발표1] 고준위방폐물 특별법 주요 내용 및 의의** 이재학 (한국원자력환경공단 고준위 사업본부장)
10:05 ~ 10:20	**[발표2] 국내원전 해체설계 현황 및 4차산업적용 기술개발 개요** 김용건 (한국전력기술㈜ 원전해체사업책임자)
10:20 ~ 10:35	**[발표3] 수출경쟁력 제고를 위한 사용후관리기술 개발 개요** 이성기 (한전원자력연료㈜ 기술기획실장)
10:35 ~ 10:40	**[장내정리]**
10:40 ~ 11:00	**[질의응답]**

개회식 및 초청강연

| 일 시 2025. 5. 22.(목) 16:00 ~ 18:00
| 장 소 한라홀 (3F)

구 분	프로그램
개회식	[사회 : 조형규 학술이사] 장내안내 및 국민의례 개회사 : 이기복 학회장 축　사 : 이호현 산업통상자원부 에너지정책실장 [감사장 수여] • 정범진 제36대 학회장 • 연임하지 않은 제36대 임원 등 – 부회장 : 설광원, 한은옥 – 감사 : 남요식 – 이사 : 김찬수, 김형대, 이정익, 이지민, 정용훈, 정익, 최일경, 허균영 – 고급정책연구소장 : 이종호
초청강연	Ⅰ. 김무환 포항공과대학교 특임교수 – 산업 경쟁력과 원자력
	Ⅱ : 전봉근 국립외교원 명예교수(한국핵정책학회장) – "산업용" 핵연료주기 도입을 더 이상 미룰 수 없다 – 핵연료주기 도입을 위한 사전 준비
시상식	2024년 추계학술발표회 우수논문상 시상 2025년 한국원자력학회 장학증서 수여

만찬 행사 일정

| 일 시 2025. 5. 22.(목) 18:00 ~ 19:30
| 장 소 탐라홀 (5F)

구 분	프로그램
만찬	[사회 : 이지민, 성지현 대학청년이사] 장내 안내말씀 원자력 학생경진대회(AI X NUCLEAR 마음껏 상상하라!) 연구부회 우수포스터 대상자 안내 경품 추첨

초청강연

ㅣ일 시 2025. 5. 22.(목) 16:20 ㅣ장 소 한라홀 (3F)

김 무 환

포항공과대학교 특임교수
포항공과대학교 前 총장

산업 경쟁력과 원자력

한국 전쟁 이후 대한민국의 산업 경쟁력은 거의 제로에서부터 국제적인 경쟁력을 어느 정도 확보하였다고 자부할 수준으로 발전했다. 이는 선배님들의 끊임없는 노력과 앞선 기술을 배우고 넘어서겠다는 일념으로 개발해 온 기술을 바탕으로 하고 있다. 특히 원자력 산업은1970년 대 일차 오일 쇼크 이후 고리1호기의 상업 발전을 계기로 국제 유가에 종속적으로 움직이든 전기 요금을 매우 안정적으로 유지하는 밑바탕이 되었다. 이는1980년대부터2010년대 후반까지 지속적이고 괄목할만한 전기 사용량의 증가와 함께한 국내 산업의 발전으로 증명된다. 즉 우리의 산업 경쟁력은 우수한 인력들의 각고의 노력과 더불어 원자력 상업 발전을 통해 합리적인 가격으로 생산한 우수한 품질의 전기가 중요한 요소였다.

그러나, 지난 몇 년을 살펴보면 산업용 대기업 전기 요금의 경우 2021년 105.5원에서 2024년 181.5원으로 무려 72% 인상되어 많은 산업체가 어려움을 호소하고 있다. 더구나, 인구 감소로 인한 인력 수급의 어려움과 함께 대학 교육에 대한 투자 감소로 대학에서의 교육과 연구가 상대적으로 열악해져 기술 개발이 뒤쳐지는 현실과 함께 산업의 경쟁력을 심각히 훼손하고 있다.

이러한 현실에서 원자력 산업이 스스로의 경쟁력과 국가 산업 경쟁력의 든든한 버팀목이 되기 위해서는 새로운 변화와 혁신이 원자력계 전반에 걸쳐 필요하다. 이를 위해서는 우선 원자력계 내부의 소통이 강화되고 이를 통해 최선의 합의점이 도출되어야 한다. 예를 들어, 진흥과 규제간 국민 안심과 최상의 안전을 위한 합리적 방안, 미래 기술에 대한 산, 학, 연의 합의와 공동 노력, 미래 세대를 위한 교육 투자와 방법론에 대한 합의와 각 기관의 노력 등이 신속히 그리고 효율적으로 추진되어야 할 것이다.

특히 미래 세대의 교육은 100 만명의 신생아가 태어난 1960년 전후의 시각으로 25 만명이 태어나는 지금의 세대를 막연히 바라보아서는 안 될 것이다. 더구나 많은 학생들이 공대보다는 다른 분야를 선호하는 현실에서 필요한 엔지니어 부족으로 국내 여러 산업 분야가 국제적인 경쟁력을 잃어버릴 수박에 없을 것으로 예측된다. 이러한 현실에서 원자력 분야의 우수 인재를 계속적으로 양성하기 위해 대학의 공동 노력과 연구계와 산업계의 전폭적인 지원이 절실히 요구된다.

결론적으로 원자력 산업은 수출 산업으로서 경쟁력을 확보하여야 할 뿐 아니라, 국내 산업이 경쟁력을 가질 수 있도록 하는 근본적이고 기초적인 산업이다. 이를 다시 강조하고 그 역할을 모두 같이 충실히 수행할 방안을 찾고자 한다.

초청강연 II

| 일 시 2025. 5. 22.(목) 17:05 | 장 소 한라홀 (3F)

전 봉 근

국립외교원 명예교수
한국핵정책학회장
한국안보통상학회장

"산업용" 핵연료주기 도입을 더 이상 미룰 수 없다

- 핵연료주기 도입을 위한 사전 준비

기후변화, 지정학적 경쟁, 에너지안보, AI 혁명 시대에 한국이 무탄소 에너지를 안정적으로 공급하려면 원자력의 중심적 역할이 필수적이다. 그런데 한국은 핵연료의 농축을 전부 외국에 의존함으로써 핵연료 공급의 안정성이 매우 취약하다. 심지어 향후 SMR 시대가 열리더라도 이를 위한 첨단 핵연료를 구하지 못할 가능성도 크다. 또한 2025년까지 일부 원전 저장조에 사용후핵연료가 꽉 차는데, 조기에 처리 · 처분하지 못하면 원전 가동을 중지해야 하는 불상사가 발생한다. 따라서 한국이 지속가능한 원자력을 보장하고 첨단 원자력 시스템을 적기에 도입하려면, 자체 농축재처리 역량은 더 이상 옵션이 아니고 필수이다. 그렇다면 한국이 그동안 철저히 접근을 차단당했던 농축재처리 역량을 어떻게 도입할 것인가?

첫째, 무엇보다 한국 정부는 평화적 이용, 산업용 원자력 정책의 일부로서 '국가 농축재처리 정책'을 수립해야 한다. '국가 농축재처리 정책'은 농축재처리의 용도와 필요성, 농축재처리 추진에 대한 국민 합의와 국가 의지, 관련 부처 및 이해관계자 간 합의, 농축재처리 도입 일정과 규모, 국가적 핵비확산 의지 재확인, 핵 투명성 제고 조치 등을 포함해야 한다.

둘째, 미국이 그동안 한국의 핵개발을 우려하여 농축재처리에 대한 접근을 강력히 반대했다는 점을 감안하여, 국내적으로 핵비확산 의지와 분위기를 조성해야 한다. 미 정부는 1974년 인도의 핵실험 이후 핵비확산을 최우선적인 국제안보 원칙으로 채택하고, 일관되게 추가적인 농축재처리 기술의 확산을 차단했다. 이런 미국의 핵비확산 정책을 감안할 때, 한국민의 높은 핵무장 지지도가 농축재처리 도입에 중대한 장애요인이 될 것이다. 따라서 한국이 농축재처리 도입에 대한 미국의 동의를 구하려면, 한국 정부의 핵비확산 정책 의지를 더욱 강력히 밝히고, 국민의 높은 핵무장 지지를 낮추지 않으면 안 된다.

셋째, 과거 한국의 농축재처리 요구가 미 정부의 강한 반대에 부닥쳐 번번이 좌절되었다는 점을 감안할 때, 향후 철저히 대미 협상 전략을 준비해야만 한다. 이때 미국 내에서 한국의 농축재처리에 대한 호의적인 분위기를 조성하는 사전 작업도 필요하다. 무엇보다 대미 협상 전략 수립은 미국이 한국의 농축재처리를 반대하는 명분을 반박하는 논리를 개발하는 데서 시작한다. 또한 대미 설득과 협상을 효과적으로 추진할 수 있는 외교 체제를 정비하고, 원자력역량도 획기적으로 강화해야 한다. 이를 위해 일본의 성공적인 1988년 미일 원자력협정 협상 사례를 참조해야 한다.

마지막으로, 대미 협상력을 강화하려면 한국은 자신의 원자력 역량과 전략적 가치를 높이고, 원자력협력의 성숙한 파트너로 인정받도록 해야 한다. 한국은 이미 높은 원자력 역량과 핵비확산 성과를 축적하여 미국으로부터 성숙한 원자력협력의 파트너로서 인정받을 자격을 갖추었다. 사실 한국이 미국에 요구하는 것은 '특별 대우'가 아니라 한국의 국제적 지위와 원자력 역량에 부합하는 '공정 대우'이다. 한국은 세계적인 원전 이용국이며 수출국인 원전 강국이다. 더욱이 한국은 동아시아에서 미국이 가장 신뢰하고 전략적 가치가 큰 동맹국이다. 대미 원자력외교에서 이런 한국의 고도화된 원자력 역량과 전략적 가치를 활용한다면 처음으로 농축재처리의 길이 열릴 가능성도 커질 것이다.

2024 추계학술발표회 우수논문상 및 2025 KNS 장학생
(Best Paper Awards and KNS Scholarship)

2024 추계학술발표회 우수논문상

성 명	소 속
강준영	한국원자력연구원
김도현	한국핵융합에너지연구원
김민선	조선대학교
김상원	한국전력기술㈜
김응재	BEES, Inc
김요한	경희대학교
배준용	울산과학기술원
양현근	한국원자력연구원
유승준	부산대학교
양원석	서울대학교
이창민	서울대학교
정재준	부산대학교
최재영	서울대학교
홍성구	서울대학교

2025년도 한국원자력학회 장학생

학 교 명	성 명
경북대학교	박성재
경희대학교	추연학, 윤시원, 권민경
동국대학교	김수준, 전현주
부산대학교	배대환, 류지성
서울대학교	정진용, 임채린, 박준혁
세종대학교	김현조, 전민식
울산과학기술원	Yanuar Ady Setiawan, Arief Rahman Hakim
제주대학교	문지환, 이혜교
조선대학교	박상준, 이수영
중앙대학교	이상준, 양영재
포항공과대학교	김경태
한국과학기술원	변재민, 최수현, 신민혜
한양대학교	김진우, 정채윤, 송채현
한전 국제원자력대학원대학교	Brzezinski Mikolaj, Jati Eka Putri

Workshops

B

K–원전 개발 현재와 미래

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 3층 301호
| 주최 한국원자력학회 원자로시스템기술 연구부회

일 정	내 용
14:00~14:05	참석자 소개, 하체웅 (한수원 중앙연구원)
14:05~14:10	개회사, 장희승 (한수원 품질기술본부장)
14:10~14:15	격려사, 김무환 (포항공대 교수)
14:15~14:45	K–원전 요소기술 개발 현황, 김종성 (에너지기술평가원)
14:45~15:15	선진 노형 및 요소기술 개발 현황, 강한옥 (KAERI)
15:15~15:45	미래 혁신 노형기술 및 신요소기술 현황, 이정익 (KAIST)
15:45~16:05	Coffee Break
16:05~16:35	K–대형원전 개발 Lessons Learned, 김한곤 (i–SMR사업단장)
16:35~17:05	K–소형원전 개발 현황, 이도환 (한수원 중앙연구원)
17:05~17:35	K–대형원전 미래 경쟁력 강화를 위한 개념개발, 오지용 (한수원 중앙연구원)
17:35~18:00	종합토의: K–원전 미래를 위한 글로벌 협력체계 구축방안, 서정관 (한수원 중앙연구원)

| 기타사항 – 등록비 : 무료 / 석식제공 없음
– 문의처 : 하체웅 / 한수원 중앙연구원 / 042–870–5822 / hachewung@khnp.co.kr

C

혁신형 SMR 노심설계 기술개발 워크숍

| 일시 · 장소 2025. 5. 21.(수) 13:30~17:30 · 제주국제컨벤션센터, 3층 한라홀B
| 주최 한국원자력학회 원자로물리 및 계산과학 연구부회, 한전원자력연료(주)

일 정	내 용
13:30~13:40	개회사, 최재돈 (한전원자력연료)
13:40~14:10	무붕산 노심 집합체 및 장전모형 설계, 조범희 (한전원자력연료)
14:10~14:40	무붕산 노심해석 코드체계 및 방법론 고도화, 정위수 (한전원자력연료)
14:40~15:10	국내외 제어봉 설계 및 운전 최적화 연구 동향, 홍서기 (한양대학교)
15:10~15:30	Break Time
15:30~16:00	Monte-Carlo 코드를 이용한 무붕산 노심 모사, 박호진 (경희대학교)
16:00~16:30	혁신형 SMR 노심보호감시계통 기술개발 현황, 허균 (한전원자력연료)
16:30~17:00	무붕산 탄력운전 노심 PCI 평가 방법, 윤학규 (한전원자력연료)
17:00~17:30	혁신형 SMR 노심 최적화 프로그램 방법론, 하병혁 (미래와도전)

| 기타사항 – 등록비 : 30,000원 / 석식 제공
– 문의처 : 배공훈 / 한전원자력연료 / 010-3215-6776 / ghbae@knfc.co.kr
박진수 / 울산과학기술원 / 010-9364-1041 / jinsu@unist.ac.kr

D

사용후핵연료의 안전한 저장을 위한 준비

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 2층 202B호
| 주최 한국원자력학회 원자력시설 해체 및 방사성폐기물관리 연구부회, 한국원자력연구원

일 정	내 용
14:00~14:10	개회사, 백민훈 (한국원자력연구원 후행원자력기술연구소장) Opening Remarks, Min-Hoon Baik (KAERI)
14:10~14:40	원전부지 내 SF 건식저장 추진계획 및 기술개발 현황, 김기영 Status of on-site SF dry storage project and R&D, Kiyoung Kim (KHNP)
14:40~15:10	한국형 사용후핵연료 관리시설 설계기술 개발 현황, 문태철 Development status of design technologies for the SNF management facility in Korea, Tae-Chul Moon (KORAD)
15:10~15:40	부지 내 건식저장시스템 설계현황 및 "사업소내 운반" 이송용기 적용방안, 차요섭 (두산에너빌리티) The design status of Dry Storage System on site & the application plan of MTC(Tranfer Cask) to "On-site Transport", Yoseb Cha (Doosan Enerbility)
15:40~15:50	휴식 Break
15:50~16:20	향후 사용후핵연료 건전성 평가 방향 제언, 국동학 (한국원자력연구원) Suggestion for spent fuel integrity evaluation direction henceforward, Donghak Kook (KAERI)
16:20~16:50	사용후핵연료 건식저장을 위한 진공건조 과정과 잔류수 종합평가, 임지환 (한국원자력연구원) Vacuum drying process and comprehensive evaluation of residual water for dry storage of spent nuclear fuel, Ji Hwan Lim (KAERI)
16:50~17:20	핵연료 조사후 성능시험평가 기술개발 현황, 김성근 (한국원자력연구원) Status of Technology Development for Post Irradiation Examination of Nuclear Fuel, Sunggeun Kim (KAERI)
17:20~17:50	사용후핵연료 건식저장 구조재료 열화 모델링, 최성열 (서울대학교) Modeling of Material Degradation in Spent Nuclear Fuel Dry Storage, Sungyeol Choi (SNU)

| 기타사항 – 등록비 : 50,000원 / 석식제공 없음(기념품 제공)
– 문의처 : 최상일 / 한국원자력연구원 / 042-868-4410, 010-5176-1735 / sichoi89@kaeri.re.kr

E

원전해체 사업 동향 및 표준화 정보교류회

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 2층 203호
| 주최 한국원자력학회 원자력시설해체 및 방사성폐기물 관리 연구부회

일 정	내 용
14:00~14:20	개회사, 전영태 본부장 (대한전기협회)
14:20~14:50	글로벌 원전해체 사업 및 기술개발 현황, 최훈PD (한국에너지기술평가원)
14:50~15:20	원전해체 기술개발 현황 및 계획, 윤석본 선임연구원 (한국수력원자력)
15:20~15:50	원전해체 전력산업기술기준 개발 및 향후계획, 김경흠 팀장 (대한전기협회)
15:50~16:10	휴식
16:10~16:40	해체폐기물 처분적합성 판단을 위한 인프라 및 분석 기술 개발 현황, 하영수 팀장 (한국원자력환경복원연구원)
16:40~17:10	중 · 저준위 방사성폐기물 관리현황 및 이슈, 이성복 실장(한국원자력환경공단)
17:10~18:00	종합 토의 및 폐회

| 기타사항 – 등록비 : 무료 / 석식제공 없음
– 문의처 : 송병훈 / 대한전기협회 / 02–2223–3956 / songbh2000@kea.kr

F

경수형 SMR과 MSR 핵연료 및 재료 연구현황과 전망

LWR SMR and MSR nuclear fuel and materials research activity and prospect

| 일시 · 장소 2025. 5. 21.(수) 13:30~18:00 · 제주국제컨벤션센터, 3층 삼다홀A
| 주최 한국원자력학회 핵연료 및 원자력재료 연구부회

일 정	내 용
13:30~13:50	워크샵 등록 (Registration)
13:50~14:00	개회 및 안내, 김동진 (한국원자력연구원) Opening, Dong Jin Kim (KAERI)
14:00~14:25	i-SMR 원전 탄력운전을 위한 핵연료 건전성 평가체계 구축 현황 및 향후계획, 장훈 (한전원자력연료주식회사) Status & Plan for Development of PCI Evaluation Technology for Flexible Operation of i-SMR, Hun Jang (KNF)
14:25~14:50	혁신형 SMR 원자로용기 및 격납용기용 고강도 저합금강 적용기술 개발 현황, 김민철 (한국원자력연구원) Current Status of Development in High-Strength Low-Alloy Steel Applications for i-SMR Reactor and Containment Vessels, Min Chul Kim (KAERI)
14:50~15:15	경수형 SMR 핵연료 기술 연구 개발 현황, 김동주 (한국원자력연구원) R&D Status of Nuclear Fuel Technologies for Water-cooled Type SMRs, Dong-Joo Kim (KAERI)
15:15~15:40	초대형 PM-HIP 제작기술 개발, 김동수 (두산에너빌리티) Development of Manufacturing Technology for Large Scale PM-HIP, Dongsoo Kim (Doosan Enerbility)
15:40~16:00	휴식 (Break)
16:00~16:25	용융염원자로 부식 시험 및 감시기술: 현황과 개선 방향, 최성열 (서울대학교) Corrosion Testing and Monitoring Technologies for MSR: Current Status and Improvement Strategies, Sungyeol Choi (SNU)
16:25~16:50	MSR 용융염 핵연료 제조 기술 개발 현황, 이창화 (한국원자력연구원) Recent Progress in Molten Salt Nuclear Fuel Fabrication for MSRs at KAERI, Chang Hwa Lee (KAERI)
16:50~17:15	용융염 원자로용 고온 내부식 Ni 구조소재 개발, 이현근 (한국원자력연구원) Development of Ni-base Structural Materials with Enhanced Molten Salt Corrosion Resistance and High Temperature Properties, Hyun Geun Lee (KAERI)
17:15~17:40	MSR 핵연료: 염소화 공정 및 핵분열에 의한 용융염 산화수 거동, 윤종일 (한국과학기술원) MSR Fuel : Chlorination Process and Fission-induced Valence State Behaviors, Jong Il Yun (KAIST)
17:40~18:00	종합 토의 및 폐회 (Closure)

| 기타사항 – 등록비 : 60,000원 / 석식 제공
– 문의처 : 김대종 / KAERI / 042-868-4559 / dkim@kaeri.re.kr

G

글로벌 SMR 규제 동향 및 기술개발 현황

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 3층 한라홀A
| 주최 한국원자력학회 원자력열수력 연구부회, 한국원자력산업협회

일 정	내 용
14:00~14:10	개회사 (노백식 부회장 / 한국원자력산업협회)
14:10~14:30	Small Modular Reactor Safety Goals and Risk Management (강현국 / 美 RPI)
14:30~14:50	EPRI Research on Risk Analysis Methods and Tools for Advanced Reactors (Eric Thornsbury / 美 EPRI)
14:50~15:10	U.S. Progress in Risk-Informed Regulation and Methods for Advanced Reactors and SMRs (Dave Grabaskas / 美 ANL)
15:10~15:30	경수형 SMR 규제 방향 및 사전설계검토 현황 (송찬이 / KINS)
15:30~15:50	i-SMR 기술개발 현황 (임상규 / 혁신형SMR기술개발사업단)
15:50~16:10	Coffee Break
16:10~16:30	다중모듈 리스크 평가 (이승준 / UNIST)
16:30~16:50	피동안전계통 단일고장 및 성능요건 검토 (김형대 / 경희대)
16:50~17:10	전력계통 보조전원 기술 검증 및 표준화 (김종훈 / 충남대)
17:10~17:30	RCS 유량계측을 위한 최적 방법론 도출 및 분석 (김동억 / 중앙대)
17:30~17:50	SMR 통합 주제어실 인간공학 프로그램 방향 (김종현 / KAIST)

| 기타사항
- 기타사항 : 동시통역(한↔영) 진행
- 등록비 : 무료 / 석식 제공 없음
- 문의처 : 박상언 / 한국원자력산업협회 / 02-6953-2511 / parks@kaif.or.kr

H

수출형 원전 중대사고 완화 기술 연구 현황 및 개발 방향

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 3층 302호
| 주최 한국원자력학회 원자력안전 연구부회

일 정	내 용
14:00~14:10	개회사, 임호곤 (한국원자력연구원)
14:10~14:40	EUR 등 유럽 요건 충족을 위한 중대사고 설계, 채희홍 (한국전력기술)
14:40~15:10	UAE 원전 중대사고 분석 경험, 류인철 (한국전력기술)
15:10~15:40	UAE 원전 SAMG 수출 경험, 서미로 (한국수력원자력 중앙연구원)
15:40~16:00	휴식 (Break)
16:00~16:25	IVR 연구 현황, 임국희 (KINS)
16:25~16:50	격납건물 3D 해석 코드 개발 현황, 김종태 (한국원자력연구원)
16:50~17:15	핵분열생성물 거동 관련 국제 공동연구 현황, 이윤희 (전북대학교)
17:15~18:00	종합토의 및 폐회 (Closing)

| 기타사항 – 등록비 : 50,000원 / 석식 제공
– 문의처 : 정재훈 / 한국원자력연구원 / 042–868–4691 / jhjung@kaeri.re.kr

I

LNT 모델의 과학적 이해와 쟁점

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 2층 202A호
| 주최 한국원자력학회 방사선방호 연구부회

일 정	내 용
14:00~14:05	개회사, 신창호 (한양대학교/방사선방호연구부회 회장)
14:05~14:10	축사, 이희석 (포항가속기연구소/방사선방어학회장)
14:10~14:35	국제방사선방호체계와 LNT, 조건우 (한국과학기술원)
14:35~15:00	생물학적 연구기반 LNT모델에 대한 견해, 남선영 (한수원 방사선보건원)
15:00~15:25	LNT와 역학, 이원진 (고려대학교)
15:25~15:35	휴식
15:35~16:00	보편적 생명현상으로서 호메시스: 방사선호메시스는 예외인가?, 이덕희 (경북대학교)
16:00~16:25	원자력산업 진흥을 저해하는 LNT, 박상덕 (서울대 원자력정책센터)
16:25~16:50	저선량 · 초저선량 · 극미량 방사선피폭: 쟁점과 합의점, 안도현 (제주대학교)
16:50~17:15	LNT관련 사회적 부작용과 기본권에 대한 쟁점, 한은옥 (서울대 원자력정책센터)
17:15~17:25	휴식 및 단상정리
17:25~18:00	질의 응답 및 토론, 이재기 (대한방사선방어학회 방사선안전문화연구소장)

| 기타사항 – 등록비 : 무료 / 석식 제공 없음
– 문의처 : 신창호 / 한양대학교 / 010–3710–3361 / gemini@hanyang.ac.kr

J

국내 중성자 활용 기술 현황 및 전망

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 2층 201A호
| 주최 한국원자력학회 방사선 이용 및 기기 연구부회

일 정	내 용
13:30~14:00	워크숍 등록
14:00~14:02	개회사, 선광민 (연구부회장, 한국원자력연구원)
14:02~14:10	중성자활용기술 워크숍 개최 배경, 한영수 (한국원자력연구원)
14:10~14:35	고분해능 중성자 분말 회절장치 활용 이차전지 소재 연구 동향, 김형섭 (한국원자력연구원)
14:35~15:00	양자소재 측정을 위한 비탄성 중성자 산란 기술과 장치 현황, 지성대 (한국원자력연구원)
15:00~15:25	고성능 고내구성 고분자 전해질막 연료전지 핵심소재 기술 개발을 위한 중성자 활용 방안, 신동윤 (한국자동차연구원)
15:25~15:50	국내외 중소형 중성자발생장치 개발/활용 현황 및 차세대원자력 분야 활용 계획, 이동원 (한국원자력연구원)
15:50~16:10	휴식
16:10~16:35	D-D 중성자발생장치 및 30MeV 사이클로트론 기반 중성자원 개발과 산업/국방 활용 계획, 정봉기 (큐빔솔루션 대표)
16:35~17:00	KAERI 경수로 핵연료 기술 개발 현황 및 조사시험 계획, 김동주 (한국원자력연구원)
17:00~17:25	연구로를 활용한 차세대 원자력 개발 지원, 양성우 (한국원자력연구원)
17:25~17:50	고강도 양전자분광시설 및 인빔 뫼스바우어 분광시설 구축 계획, 이재기 (한국원자력연구원)

| 기타사항 – 등록비 : 50,000원 / 석식 제공
– 문의처 : 한영수 / 한국원자력연구원 / 010-5434-5327 / yshan@kaeri.re.kr

K

오랜동행: 국가유산과 원자력 그리고 미래

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 2층 201B호
| 주최 한국원자력학회 방사선 이용 및 기기 연구부회

일 정	내 용	
14:00~14:05	개회사, 선광민 방사선 이용 및 기기 연구부회장	
14:00~14:05	환영사, 수석부회장	
14:05~14:10	축사, 임인철 한국원자력연구원 부원장	
14:10~14:40	기조강연, 정용재 국립고궁박물관 관장	
14:40~15:00	히스토리 에어라인, 박해준 한국원자력연구원 국가유산원자력클리닉 실장	
15:00~15:10	휴식 (기념촬영)	
15:10~15:35	국가유산보존기술협회소개 "국가유산 보수란?"	하준경 (사)국가유산보존기술협회 이사
15:35~15:50	야외 목조 문화유산 건축물 비파괴 검사 (목조문화유산방사선비파괴검사사례)	이전재 (사)목재비파괴연구소 대표
15:50~16:15	하나로 시설 이용 문화유산 진단 분석 (KAERI시설이용문화유산진단분석사례)	한민수 전통문화대 교수
16:15~16:40	국선사 천룡도 방사선 이용 치료 복원 이야기 (청룡도:우리나라방사선소독문화유산1호)	이장존 (전)하이문화유산케어, (현) 충북대 교수
16:40~17:05	수침 불화 문화유산 방사선 이용 보존 처리 (기후변화수해재난대응도서화문화유산보존)	이한형 학교기업 컨테크 대표
17:05~17:35	패널토론, MC 전준표 (한국원자력연구원 책임연구원)	
17:35~17:40	폐회사, 박해준 (한국원자력연구원 국가유산원자력클리닉 실장)	
18:00	간친회	

| 기타사항
- 등록비 : 무료, 석식제공 없음
- 문의처 : 박해준 / 한국원자력연구원 국가유산원자력클리닉 / 063-570-3190, 010-8501-6764 / hjpark@kaeri.re.kr

L

제2차 핵융합/원자력 재료 이온빔 조사 시험 및 평가 워크숍
2nd Workshop of the Ion Beam Irradiation Test and Evaluation on Nuclear Fusion/Fission Materials

| 일시 · 장소 2025. 5. 21.(수) 14:00~17:45 · 제주국제컨벤션센터, 4층 401A호
| 주최 한국원자력학회 양자공학 및 핵융합기술 연구부회

사회 / Address : 이승현 (KAERI)

일 정	내 용
14:00~14:10	인사말, 정영욱 (KAERI) Opening
14:10~14:30	KAHIF 이용현황 및 계획, 이승현 (한국원자력연구원) Operation Status and Plans of KAHIF for nuclear fusion/fission material research, Seunghyun Lee (KAERI)
14:30~14:50	KOMAC의 MeV급 이온빔 장치 현황 및 활용 계획, 김한성 (한국원자력연구원) Current Status and Future Plan of MeV-grade Ion Beam Facilities at KOMAC, Han-Sung Kim (KAERI)
14:50~15:10	연구로를 활용한 재료 조사시험 및 이온빔과의 통합 연구 방안, 양성우 (한국원자력연구원) Material irradiation testing using research reactor and integrated research plan with ion-beam, Sungwoo Yang (KAERI)
15:10~15:30	원자력재료 조사손상 연구를 위한 이온가속기 활용 경험, 진형하 (한국원자력연구원) Insights on the Use of Ion Accelerators for Nuclear Materials Irradiation Damage Research, Hyung-Ha Jin (KAERI)
15:30~15:50	이온 조사된 저방사화 강의 기계적 특성 및 헬륨 스웰링 평가, 김상은 (명지대학교) Mechanical Properties and Helium Swelling Evaluation of Ion Irradiated RAFM Steel, Sangeun Kim (Myongji University)
15:50~16:10	기념촬영 및 휴식 Break Time
16:10~16:30	지르코늄 피복관의 복합 블리스터 분석을 위한 마이크로-캔틸리버 테스트 및 반응성 이온 조사 후 SA508 철강의 SMR 압력 용기 내구성 평가, 김호아 (한양대학교) Hydride Blister Analysis in Zr Cladding via Micro-Cantilever Testing and Post-Ion Irradiation Micro-Mechanical Assessment of SA508 Steel for SMR Pressure Vessel Integrity, Ho-a Kim (Hanyang University)
16:30~16:50	조사 손상 시뮬레이션을 위한 원자간 퍼텐셜 모델, 남호석 (국민대학교) Review on the Development of Interatomic Potential Models for Radiation Damage Simulation, Ho-Seok Nam (Kookmin University)
16:50~17:10	헬륨이온 조사에 의한 ARAA강의 조사결함 형성과 조사취화 분석, 이정구 (울산대학교) Evolution of radiation defects and radiation embrittlement in He ion-irradiated ARAA steel, Jung Gu Lee (University of Ulsan)
17:10~17:30	이온조사시험 기술 표준화 관련 KEPIC Code & Standards 활동 현황, 이동원 (한국원자력연구원) Current Status of KEPIC C&S Acitivities for Ion Irradiation Testing, Dong-Won Lee (KAERI)
17:30~17:45	마무리, 이승현 (한국원자력연구원) Closing

| 기타사항 – 등록비 : 무료 / 석식 제공 없음
– 문의처 : 이승현 / 한국원자력연구원 / 010-3455-9070 / lsh0810@kaeri.re.kr
이동원 / 한국원자력연구원 / 010-6403-0655 / dwlee@kaeri.re.kr

M

우주부품 방사선 영향평가 활용 현황

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 4층 401B호
| 주최 한국원자력학회 양자공학 및 핵융합기술 연구부회

일 정	내 용
14:00~14:05	개회사 (Opening), 정영욱 소장 (한국원자력연구원)
14:05~14:15	위성 부품의 방사선 영향평가와 정보제공 방향: 우주급 및 COTS 부품의 신뢰성 검증, 변유경 연구원 (우주항공청)
14:15~14:45	우주부품화를 위한 COTS 임베디드 모듈 및 메모리 소자의 방사선 영향평가 실험, 손종대 책임연구원 (한국천문연구원)
14:45~15:15	방사선으로 인한 우주용 전력반도체의 손상, 이우준 선임연구원 (한국항공우주연구원)
15:15~15:45	Human Space Exploration and Medical Imaging under Space Radiation, 윤학순 대표 (스페이스린텍)
15:45~16:05	휴식 (Break)
16:05~16:35	Memory Device Reliability Risk Concerns for LEO (Low Earth Orbit) Satellite Environment, 황유철 마스터 (삼성전자)
16:35~17:05	우주 환경에서 반도체 방사선 영향 및 신뢰성 평가 기술과 제안, 김기석 전무 (QRT)
17:05~17:35	저궤도 위성체용 고출력 전력반도체에 미치는 방사선 효과와 양성자 방사 내성 전력반도체 설계, 김태양 책임 (FADU)
17:35~17:55	양성자과학연구단 시설 및 연구 현황, 김동석 선임연구원 (한국원자력연구원)
17:55~18:00	폐회사 (Closing), 이재상 단장 (한국원자력연구원)

| 기타사항 – 등록비 : 50,000원 / 석식 제공
– 문의처 : 김동석 / 한국원자력연구원 / 054–750–5310 / dongseokkim@kaeri.re.kr
이재상 / 한국원자력연구원 / 054–750–5301 / jslee8@kaeri.re.kr

N

극한내압 격납건물 구조건전성 평가기술 개발 현황

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 4층 400호
| 주최 한국원자력학회 원자력 건설 및 운영기술 연구부회

일 정	내 용
14:00~14:05	개회사, 김민규 (한국원자력연구원)
14:05~14:35	고온 및 고압을 받는 PWR형 원전 격납건물의 확률론적 내압성능 평가, 주부석 (경희대)
14:35~15:05	원전 격납건물 실험모형을 활용한 극한내압성능 평가방법론 개발, 장윤석 (경희대)
15:05~15:35	극한내압 격납건물 환경누출 평가기술 개발 현황, 권태현 (한국원자력연구원)
15:35~16:05	휴식
16:05~16:35	유체-고체 상호작용을 고려한 콘크리트 균열진전 해석 및 균열면 특성 반영 누출량 평가식 개발, 한동석 (연세대)
16:35~17:05	경년열화를 고려한 가동원전 격납건물의 극한내압능력 평가 방안, 문일환 (대진대)
17:05~18:00	종합 토론

| 기타사항 – 등록비 : 무료 / 석식 제공 없음
– 문의처 : 최하번 / 한국원자력연구원 / 042-868-2160 / hbchoi@kaeri.re.kr

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한 · 미 원자력협력협정 개정 10주년: 성과와 도전, 그리고 미래
10 Year Review of the ROK-US Nuclear Cooperation Agreement Revision : Achievements, Challenges, and Future Direction

| 일시 · 장소 2025. 5. 21.(수) 14:00~17:25 · 제주국제컨벤션센터, 4층 402A호
| 주최 한국원자력학회 원자력정책, 인력 및 협력 연구부회, 한국원자력연구원, Global America Business Institute (GABI)

사회 / Address : Florence Lowe-Lee (GABI President)

일 정	내 용
14:00~14:05	Opening Remarks, Chae Young Lim (Senior Vice President, KAERI)
14:05~14:10	Group Photo
Session 1 : [Looking Back] Achievements and Lessons Learned This session will review the historical developments of ROK-US Nuclear Cooperation Agreement, highlighting major achievements and turning points from the signing to 2025.	
14:10~14:30	Kwang Seok Lee (Research Fellow, Seoul National University Nuclear Energy Policy Center, former KAERI Director)
14:30~14:50	Paul Dickman (President, World Council on Isotope and Former Senior Fellow, Argonne National Laboratory)
Session 2: [Assessing the Present] Challenges and Opportunities This session will assess the current state of ROK-US bilateral nuclear cooperation under the ROK-US Nuclear Cooperation Agreement, exploring key challenges and strategic considerations shaping the present and near-term future.	
14:50~15:10	Sungtae Yang (Vice President, KHNP)
15:10~15:30	Joyce Connery (Former Chair, Defense Nuclear Facilities Safety Board)
15:30~15:50	Eunju Jun (Director, KAERI)
15:50~16:20	Coffee Break
Session 3: [Looking Ahead] Sustainable Path for ROK-US Nuclear Cooperation Looking toward the future, this session will explore forward-thinking strategies to strengthen cooperation across the nuclear industry, R&D, diplomacy, and policy domains.	
16:20~16:40	Sungyeol Choi (Professor, Seoul National University)
16:40~17:00	Jack Spencer (Senior Research Fellow, Energy and Environmental Policy in the Center for Energy, Climate, and Environment, The Heritage Foundation)
17:00~17:20	Youngjun Kim (Professor, Korea National Defense University)
17:20~17:25	Closing

| 기타사항 – 등록비 : 무료, 석식제공 없음
– 문의처 : 임지환 / 한국원자력연구원 글로벌정책연구실 / 010-9890-4762 / limjh@kaeri.re.kr

P

SMR 운전관련 국내 인간공학/인적수행도 현안

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 4층 402B호
| 주최 한국원자력학회 원자력계측제어, 인간공학 및 자동원격 연구부회

일 정	내 용
13:00~14:00	등록 (현장데스크)
14:00~14:10	개회사 (최종균, 한국원자력연구원, 원자력계측제어, 인간공학 및 자동원격 연구부회장)
14:10~14:40	i-SMR 운전적합성 검증계획 (김경민/박가영, 한수원중앙연구원)
14:40~15:10	경수형 SMR 다수모듈 통합 운영 안전성평가 규제기반기술개발 현황 (김사길, 한국원자력연구원)
15:10~15:50	SMR 운전환경에서의 인간공학설계 및 인적수행도 관련 규제 고려사항 (김지태/한지윤, 한국원자력안전기술원)
15:50~16:10	휴식
16:10~16:40	SMR 환경 인적수행도 자료수집 – 개요 (박진균, 한국원자력연구원)
16:40~17:10	SMR 환경 인적수행도 자료수집 – 실험 (김종현, 한국과학기술원)
17:10~17:30	요약 및 정리 (박진균, 한국원자력연구원)
18:30~20:00	저녁식사

| 기타사항 발표시간은 질의 및 응답 포함
– 등록비 : 50,000원 / 석식 제공
– 문의처 : 박진균 / 한국원자력연구원 / 042-868-2186 / kshpjk@kaeri.re.kr

Q

소듐냉각고속로 국내 개발 현황 및 향후 개발 방향

| 일시 · 장소 2025. 5. 21.(수) 13:20~17:20 · 제주국제컨벤션센터, 3층 303호
| 주최 한국원자력학회
| 후원 차세대원자력정책센터
| 사회 이제환 (한국원자력연구원 부장)

일 정	내 용
13:20~13:30	등록
13:30~13:35	개회 및 안내 : 이제환 (한국원자력연구원 부장)
13:35~13:40	환영사 : 이기복 (한국원자력학회장)
13:40~13:45	워크숍 개최 배경 설명 : 김학노 (前, 한국원자력학회장)
제1부 : 소듐냉각고속로 개발 현황	
13:45~14:15	SFR원형로(PGSFR) 개발 현황 : 이제환 (한국원자력연구원 부장)
14:15~14:45	SALUS–100 개발 현황 : 박창규 (한국원자력연구원 책임연구원)
14:45~15:00	휴식
제2부 : 소듐냉각고속로 기술 성과 및 개발 방향	
15:00~15:30	노물리 실험 및 목업 실험 : 이민재 (한국원자력연구원 책임연구원)
15:30~16:00	핵연료 개발 현황 : 김준형 (한국원자력연구원 책임연구원)
16:00~16:30	STELLA–1 및 STELLA–2 실험 : 신용훈 (한국원자력연구원 선임연구원)
16:30~17:00	민간주도 개발 방향 및 제언 : 이제환 (한국원자력연구원 부장)
17:00~17:20	종합 토의 및 폐회

| 기타사항 – 등록비 : 무료, 석식제공 없음
– 문의처 : 민현정 실장 / 한국원자력학회 / 042–826–2677 / kns2613@kns.org
이연화 팀장 / 한국원자력학회 / 042–826–2613 / news@kns.org

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민간주도 차세대 원자력 사업화 현황 공유 및 제언

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 3층 300호
| 주최 현대건설㈜, 한국원자력학회
| 후원 차세대원자력정책센터

일 정	내 용
13:00~14:00	등록
14:00~14:10	개회사 및 축사, 이영준 (차세대원자력정책센터)
세션 1 : 차세대 원자력 연구개발 현황	
14:10~14:30	차세대 원자력 진흥 정책 현황 및 추진 방향, 최종성 (과학기술정보통신부)
14:30~14:50	현대건설 차세대 원자로 개발 연구 동향, 이찬영 (현대건설)
14:50~15:10	포스코그룹의 SMR 사업화 현황 및 활용 전략, 박원호 (포스코이앤씨)
15:10~15:30	차세대 원자력을 활용한 조선해양 사업 진행 현황, 김종원 (삼성중공업)
15:30~15:50	세션 토의
15:50~16:10	휴식
세션 2 : 차세대 원자력 사업화 현황	
16:10~16:30	현대건설–Holtec SMR 사업 현황, 오승준 (현대건설)
16:30~16:50	GS에너지 SMR 사업 현황 및 민간주도 SMR 촉진 방안, 김철민 (GS에너지)
16:50~17:10	DL이앤씨 & X–Energy 사업 추진 현황, 김광호 (DL이앤씨)
17:10~17:30	GS건설 차세대 원자력 사업 현황, 이효철 (GS건설)
17:30~17:50	세션 토의
17:50~18:00	폐회

| 기타사항 – 등록비 : 무료, 석식제공 없음
– 문의처 : 박슬빈 책임연구원 / 현대건설 / 02–746–4885 / sbpark@hdec.co.kr

S

대학(원)생 대상 인공지능 강습회

| 일시 · 장소 2025. 5. 21.(수) 14:00~18:00 · 제주국제컨벤션센터, 3층 삼다홀B
| 주최 한국원자력학회
| 후원 전북대학교 양자시스템공학과
| 목적 본 강습회는 원자력 전공 대학(원)생들을 대상으로 과학적 인공지능의 활용을 증진하기 위해,
인공지능 이론과 원자력 분야 응용 사례 소개를 다룸

시 간	제 목	연 사
14:00~14:10	개회사	최성민 (한국원자력학회 수석부회장)
Lecture 1 14:10~15:30	머신러닝, 딥러닝 이론 (선형회귀, 일반화선형모델, ANN)	전준구 교수 (전북대 양자시스템)
Lecture 2 15:30~17:00	물리지식기반 인공지능 이론 (PINN, DeepONet)	고승찬 교수 (인하대 수학)
Lecture 3 17:00~18:00	거대언어모델 소개 (LLM)	유용균 박사 (한국원자력연구원)

| 기타사항 – 신 청 : 한국원자력학회 홈페이지
– 등록비 : 무료, 석식제공 없음
– 문의처 : 전준구 교수 / jgjeon41@jbnu.ac.kr

분과별 논문 발표
(Technical Sessions)

제1분과

원자로시스템기술 (Reactor System Technology)

1A 5.22.(목)

원자로시스템기술 1 (Reactor System Technology 1)

| 좌장 성지현(Seong, Jee Hyun), 손성민(Son, Seongmin) | 삼다홀 B

09:00 SMR Development in Europe: Spotlight on the French AMR Developers
Thiphaine Medard and Mathieu Aufauvre(Oakridge)

09:20 Proposal and Comparison of Passive Cooling Systems for Long-term Cooling of i-SMR
Yonadan Choi and Yong Hoon Jeong(KAIST), Min Suk Lee(Texas A&M Univ.)

09:40 Conceptual Design of LBE Cooled Subcritical Reactor Based Nuclear Battery
Sungbeen Park, Miras Kairolla, and Jeehyun Seong(KAIST), Eunsung Kim(KHU)

10:00 Printed-Circuit Heat Exchangers for Nuclear Marine Propulsion: A Compact Steam Generation Solution
Taeseok Kim(Jeju National Univ.)

10:20 Coffee Break

10:40 Study on high fidelity NR-HES Modeling using Modelica
DAEOH Kang(IVH), Dooil Kim(SAMYONG), Hae–Ryong Hwang(ISMR)

11:00 Feasibility Study of Carnot Battery Systems Integrated with SMRs for Repurposing of Coal-fired Power Plants
Bong Seong Oh, Gilbong Lee, Bongsu Choi, Youngbok Lee, Ho–Sang Ra, and Junhyun Cho(KIER)

11:20 Thermal Testing of Thermal Protection Systems for Nuclear-Powered Space Systems Under Re-Entry Conditions Using a 0.4MW Plasma Jet Facility
Moon Won Song, Gunwoo Choi, and Philyong Oh(Jeonbuk National Univ.)

11:40 Preliminary Assessment of Hydrogen Production Potential in a Passive Molten Salt Fast Reactor with SCO_2 Power Cycle and Electrolysis
Jihun Im, JaeHyung Park, Sinho Kim, JinHo Song, Joon–Eon Yang, and SungJoong Kim(HYU)

1B 5.23.(금)

원자로시스템기술 2 (Reactor System Technology 2)

| 좌장 임성원(Lim, Sung Won), 이근우(Yi, Kunwoo) | 삼다홀 B

09:00 The Effect of Different Shipping Routes on the Performance of Molten Salt Reactor (MSR) Systems for Marine Propulsion
Kyung Rae Yook, Jeong Min Baek, Eun Sang Yun, and Jeong Ik Lee(KAIST)

09:20 Modification of the MARS Code for Molten Salt Reactor Applications
Jae Jun Jeong(PNU), Hong Sik Lim, Kwi Seok Ha, and Yoon Jae Cho(KAERI)

09:40 Preliminary Tritium Transport Analysis in the 90MWth HTGR System
SUNG NAM LEE, Nam–il Tak, Sung Hoon Choi, and Chan Soo Kim(KAERI)

10:00 OECD/NEA HTGR Lower Plenum Benchmark Study Result from KAIST
Moon Hyeok Kang and Jeong Ik Lee(KAIST)

10:20 Validation of Solid Oxide Cell and Stack Model Using SIMULINK for Gas-Cooled Reactor Analysis
Jiwon Ahn and Hyoung Kyu Cho(SNU), Byung Ha Park(KAERI)

1C 5.22.(목) – 23.(금)

원자로시스템기술 (Reactor System Technology)– POSTER

| 좌장 김동현(Kim, Donghyun), 박창규(Park, Chang–Gyu) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22(목) 13:00 ~ 14:00

PO1C01 Thermodynamic Analysis of Liquid Air Energy Storage System Integrated to Pressurized Water Reactor with Consideration of Composition Change of Liquefied Air after Various Cryogenic Expansion Processes
Yong Jae Chae and Jeong Ik Lee(KAIST)

PO1C02 Investigation of the Dynamic Characteristic Similarity of the Experimental Reactor for Comprehensive Vibration Assessment Program (CVAP)
Choengryul Choi, Won Man Park, Dae Kyung Choi, and Seung Mok Yoo(Elsoltec), Tae Soon Kwon and Woo Shik Kim(KAERI), Do Young Ko and Kyu Hyung Kim(KHNP)

PO1C03 Case study for Increment of Ultimate Heat Sink Temperature due to Increase of seawater Temperature
Joohyung Jung and Seongmin Son(Kyungpook National Univ.)

PO1C04 Applicability of Existing Pressurizer Pressure Control Logics for Load-Following Operation of PWR-type SMR Using MTC-based Secondary Reactivity Control
Semin Joo and Jeong Ik Lee(KAIST)

PO1C05 Feasibility Analysis of Introducing Innovative SMR (i-SMR) in Developing Countries (Kazakhstan, Indonesia)
Byungjoon Jung and Sin Jung Chang(KHNP CRI)

PO1C06 Evaluation of the Flexible Operation Capability of an i-SMR Core Using RCS Outlet Temperature-Based Control Rod Operation Method
Seongho Park, Nayeon Seo, Hwansoo Kim, and Junggyu Lee(KEPCO NF)

PO1C07 Investigating Necessary Operating Conditions for TES Integrated to PWR SMRs to Maintain the Reactor Power
Takhyun Chun, Gyudong Kim, Yong Jae Chae, and Jeong Ik Lee(KAIST)

PO1C08 Preliminary Study on Interfacial Transfer Models on Water Surface to Predict Steam Pressurizer Behaviors
Minkyu Lee and Seungyeob Ryu(KAERI)

PO1C09 In-Containment Source Term Evaluation under SBO Induced Severe Core Damage Using MAAP-ISAAC in Wolsong Unit 2 Plants
Y.M. Song, J.Y. Kang, J.H. Bae, and D.G. Son(KAERI)

PO1C10 High-Temperature Fatigue Test on P91 Induction Bent Pipe of PGSFR for Applicability Analysis
Tae–Won Na, Jong–Bum Kim, Chang–Gyu Park, and June Hyung Kim(KAERI)

PO1C11 Creep Properties of P91 Induction Bent Pipe for PGSFR
Tae–Won Na, Jong–Bum Kim, Chang–Gyu Park, and June Hyung Kim(KAERI)

PO1C12 Creep Tests of P91 Elbow Pipe by Induction Bending Technology
Jong–Bum Kim, Chang–Gyu Park, Tae–Won Na, and Junehyung Kim(KAERI)

PO1C13 Setting Boundary Conditions for Heat Loss Calculation in MSR : An integrated CFD and GAMMA+ Coupling Methodology
Junkyu Han, Nam–il Tak, and HongSik Lim(KAERI), Jeong Ik Lee(KAIST)

PO1C14 Assessing Multi-dimensional Thermal Effects with NACIE-UP Coupled Analysis
Junkyu Han, Nam–il Tak, and Jonggan Hong(KAERI), Jeong Ik Lee(KAIST)

PO1C15 Load-Following Analysis of a Molten Salt Reactor and Supercritical CO_2 Power Cycle for Marine Propulsion
Jeong Min Baek, Gihyeon Kim, Seungkyu Lee, Sungwook Choi, Kyungrae Yook, and Jeong Ik Lee(KAIST)

PO1C16 Structural Integrity Assessment Method Utilizing 3D CFD Analysis
Dehee Kim, Nam–il Tak, Jin haeng Lee, and Jonggan Hong(KAERI)

PO1C17 Investigation of the Active Magnetic bearing Capacity Range for sCO_2 Power Cycle
Seungkyu Lee and Jeong Ik Lee(KAIST)

PO1C18 Feasibility Study on Deploying Micro Modular Reactors (MMR) in Korea for Remote Area
Young Jin Go and Jeong Ik Lee(KAIST)

PO1C19 Exergy-Based Optimization of Helium Intercooling Cycle for MSR Application
Sungwook Choi and Jeong Ik Lee(KAIST)

PO1C20 Preliminary Study of sCO_2 Compressor Inlet Guide Vane (IGV) for Molten Salt Reactor
Gihyeon Kim, Jeong Min Baek, Seungkyu Lee, and Jeong Ik Lee(KAIST)

PO1C21 Analysis of Thermal-hydraulic Operating Condition Considering Design Margin for the Shutdown Cooling Water Subsystem in HTGR
Ji–Woong Han, InWoo Son, ByungHa Park, and ChanSoo Kim(KAERI)

PO1C22 Thermal Shield Design for Molten Salt Reactors
Yonghee Ryu, Jinsung Kwak, Jinho Oh, and Gyeong–Hoi Koo(KAERI)

PO1C23 Adequacy Assessment on a Conceptual Design of the Water-cooled RCCS for HECTAR High Temperature Gas-cooled Reactors
Churl Yoon, Sin–Yeob Kim, Sun Rock Choi, and Seungjoon Baik(KAERI)

PO1C24 Evaluation of One-Dimensional Helical Coil Heat Exchanger Design Code (KAIST-HCHXD)
Yeongchan Kim and Jeong Ik Lee(KAIST)

PO1C25 Optimization of an HRSG Inlet Duct Design for Improved Flow Uniformity for HTGR Applications
Seungwon Jeon, Hyeonmin Choi, Taegyun Noh, Seongmin Kim, Junghwan Kook,
and Hyungmo Kim(Gyeongsang National Univ.)

PO1C26 Effect of Aspect Ratio on Performance of Packed Bed for Thermal Energy Storage
Nayoung Kim and Jeong Ik Lee(KAIST)

PO1C27 Heat Transfer Analysis of Hot Gas in Piping for Supplying Electrolysis Unit using Surface Temperature Iterative Calculation Method
SungDeok Hong, Sin–Yeob Kim, and Chan–Soo Kim(KAERI)

PO1C28 Evaluation of HTTR Core Physics Benchmark using McCARD
Beomwoo Park, Min–Jae Lee, and Seungsu Yuk(KAERI)

PO1C29 Analysis of LOCA for a Conceptual Design of a Research Reactor with an Upward Flow in the Reactor Core
Suki Park, Jong–Pil Park, Youn–Gyu Jung, Dongwook Jang, Donghyun Kim, and Cheol Park(KAERI)

PO1C30 Preliminary Test on Characteristics of Canned Motor for Reactor Coolant Pump
Hyuntae Lim, Byeonggeon Bae, Tae–Kyoon Kim, and Jihoon Lee(KAERI)

PO1C31 Transient Analysis of a Reactivity Insertion Accident Induced by the Withdrawal of a Single Control Rod in the KJRR
Donghyun Kim and Jong–Pil Park(KAERI)

PO1C32 Revisiting Application Purpose of Single-Failure Criterion for Determining the Applicability to Passive Safety System
Eunhee Jang, Haeram Jeong, Chanmin Jeong, and Hyungdae Kim(KHU)

제2분과 원자로물리 및 계산과학 (Reactor Physics and Computational Science)

2A 5.22.(목)

원자로물리 및 계산과학1 (Reactor Physics and Computational Science 1)

I 좌장 이민재(Lee, Minjae), 김도헌(Kim, Do Heon) I 401B

09:00 Depletion and Decay Heat Analysis of a VHTR Core Using the McCARD/ORIGEN-2 Code
Youngrok Lee and Hyun Chul Lee(PNU)

09:20 A Comparative Analysis of HIGA loaded i-SMR core Model Using DeCART/MASTER and Serpent2
Woo Jin Lee, Seungnam Lee, and Ser Gi Hong(HYU)

09:40 A Comparative Analysis of Monte Carlo Reference and Two-Step Diffusion Solution for a Soluble-Boron-Free i-SMR Core
Dongju Choi, Yunseok Jeong, and Yonghee Kim(KAIST)

10:00 McCARD/G Transient Analysis for CABRI-Like Benchmark
Jae Young Kwon and Hyung Jin Shim(SNU)

10:20 Preliminary Study on the Application of the PRAGMA/SPHINCS Code System to i-SMR Design
Seyeon Hwang and Jooil Yoon(KINGS)

10:40 Coffee Break

11:00 A Parametric Design Study on Fuel Assemblies using LEU+ Fuel Rods and HIGA Burnable Absorber
Minki Kim and Ser Gi Hong(HYU)

11:20 AGN-201K Coarse Rod Worth Calibration by Neutron Source Multiplication Method
Jeong Woo Park, Kiyun Bang, and Ho Jin Park(KHU)

11:40 Sample Variance Estimation for Fission Source Distribution in Monte Carlo Eigenvalue Calculations with Cross Section Feedback
Heon Woo Jang, Sang Bin Im, and Hyung Jin Shim(SNU)

2B 5.22.(목)

원자로물리 및 계산과학2 (Reactor Physics and Computational Science 2)

I 좌장 최성훈(Choi, Sung Hoon), 박호진(Park, Ho Jin) I 402A

09:00 A CNN-Based PINNs Framework for Solving the 2D Neutron Diffusion Equation
Jaeguk Lee and Hyung Jin Shim(SNU)

09:20 Generalized Perturbation Formulation for Monte Carlo Eigenvalue Calculations with Constraint Condition
Sung Hoon Choi(KAERI)

09:40 Implementation of Burnup Interval Optimization Module Based on Monte Carlo Perturbation Technique
Ho Jin Park(KHU)

10:00 GPU Accelerated SN Transport Simulation for Shielding Analysis using STRAUM
Ao Zhang and Ser Gi Hong(HYU)

10:20 Application of Metaheuristic Algorithms in the Optimization of Multi-group Cross Section Libraries for Lattice Transport Codes
Chiheon Kim and Ho Jin Park(KHU), Changhyun Lim(KEPCO NF)

10:40	Coffee Break
11:00	Comparison of Thermal Hydraulic Feedback Solutions between McCARD and DeCART2D/MASTER for SMART Benchmark Problem Young Beom Shon and Ho Jin Park(KHU)
11:20	Recent Advances in the Development of the GPU-Enabled Code STREAM3D-GPU Siarhei Dzianisau, Fathurrahman Setiawan, and Deokjung Lee(UNIST)
11:40	Implementation of Quadratic Order Predictor-Corrector Method in KARMA Myeonghyeon WOO, Changhyun LIM, and Wisoo JEONG(KEPCO NF)

2C
5.22.(목)

원자로물리 및 계산과학3 (Reactor Physics and Computational Science 3)

I 좌장 육승수(Yuk, Seungsu), 임창현(Lim, Changhyun) I 402A

13:30	A Chloride and Fluoride Hybrid Salt Fuel for Passively-cooled Molten Salt Fast Reactor Luqman Hasan Nahari and Yonghee Kim(KAIST)
13:50	A Feasibility Study on Burnable Absorber in a Long-Life Maritime Molten Salt Fast Reactor Using a Chloride-Fluoride Hybrid Salt Young–June Lee and Yonghee Kim(KAIST)
14:10	A Conceptual SMR Core Design Utilizing LEU+ Fuel and IFBA for Higher Discharge Burnup Min Seo Cho, Geun Yong Choi, and Ser Gi Hong(HYU)
14:30	Coffee Break
14:50	A Feasibility Study of Advanced Molten Salt Fast Reactor (AMFR) Based on Stationary Fuel Salt Yunseok Jeong, Young–June Lee, Eunhyug Lee, and Yonghee Kim(KAIST)
15:10	Neutronic Feasibility of a Breakeven Molten Salt Fast Reactor Using a Hybrid Chloride-Fluoride Salt Eunhyug Lee, Taesuk Oh, and Yonghee Kim(KAIST)

2D
5.23.(금)

원자로물리 및 계산과학4 (Reactor Physics and Computational Science 4)

I 좌장 조현호 (Cho, Hyunho), 조유권 (Jo, YuGwon) I 402A

09:00	Multi-GPU Multi-Node Implementation of CUDA-aware MPI in GREAPMC DEOKJUNG LEE, MUHAMMAD RIZWAN ALI, and MURAT SERDAR AYGUL(UNIST)
09:20	Implementation of History-based Batch Method in the iMC Monte Carlo Code for an Improved Variance Estimation Taesuk Oh, Jaehyeong Jang, and Yonghee Kim(KAIST)
09:40	Preliminary Verification of PRAGMA VHTR Module Enhancements for 3D Prismatic VHTR Analysis Sung Joon Kwon and Namjae Choi(SNU), Yeon Sang Jung(KAERI)
10:00	Loading Pattern Optimization for OPR-1000 by Simulated Annealing with a Screening Technique using Pin-wise Vision Transformer Model Seongjin Jeong and Hyun Chul Lee(PNU)
10:20	Solving Neutron Diffusion Equations Using Physics-Informed Neural Networks: Performance Analysis Against Traditional FEM Yohan Lee, Byoungil Jeon, and Yonggyun Yu(KAERI)

10:40 Coffee Break

11:00 Application of the History-based Batch Method to the iDTMC Method for Reliable Real Variance Estimation
Jaehyeong Jang, Taesuk Oh, and Yonghee Kim(KAIST)

11:20 Critical Experiment and Depletion Benchmark Analyses with ENDF/B-VIII.1 Evaluated Nuclear Data Library
Jimin Hur and Ho Jin Park(KHU)

2E 원자로물리 및 계산과학 (Reactor Physics and Computational Science) – POSTER

5.22.(목) – 23.(금)

| 좌장 심천보(Shim, Cheonbo), 차균호(Cha, Kyoon Ho) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO2E01 FREK Code Validation with the CEFR Control Rod Drop Experiments
Jiwon Choe, Jong–Hyuck Won, YuGwon Jo, and Jae–Yong Lim(KAERI)

PO2E02 Nuclear Characteristics Analysis of MTR Fuel Assembly Using Monte Carlo Method Based KENO-VI Code
Kyung–O Kim, Han Jong Yoo, and Byungchul Lee(KAERI)

PO2E03 Accuracy Evaluation of the Resonance Treatment Method using STREAM
Kyeongwon Kim, Wonkyeong Kim, and Deokjung Lee(UNIST)

PO2E04 Comparison of Detector Signals for the Homogenization of a Self-Powered Neutron Detector Using STREAM and MCS
Kyeongwon Kim, HanKyu Jo, and Deokjung Lee(UNIST), SungJu Kwon and Hyunsik Hong(KEPCO NF)

PO2E05 Characteristic Analysis and Generation of New Neighbor Solutions for Fuel Assembly Optimization
Byeong–hyeok Ha, Tongkyu Park, and Sung–kyun Zee(FNC Tech.)

PO2E06 Neutronic Performance Evaluation of Reflector Materials for LEU+ Fueled SMR
Yeongsok Kang, Jinsu Park, and Deokjung Lee(UNIST), Yongsik Yang(KAERI)

PO2E07 Preliminary ShutDown Dose Rate Evaluation for the Marine-Based Molten Salt Reactor
Sunghwan Yun, Dong Won Lee, and Gyeong Hoi Koo(KAERI)

PO2E08 Comparisons of Power Distribution in a Research Reactor with Modified Steady State and Transient Monte Carlo Calculation during Rod Drop Test
Han Jong Yoo, Kyung–O Kim, and BeomWoo Park(KAERI)

PO2E09 Neutronic Analysis of Accident-Tolerant Control Rod in APR-1400 using STREAM/RAST-K Code System
Jihyeon Lee and Deokjung Lee(UNIST)

PO2E10 Development of an Integrated Support Application for iSMR Flexible Operation
Byeongmun Ahn, Tongkyu Park, and Sung–Kyun Zee(FNC Tech.)

PO2E11 A Comparative Study of Neural Network-based Core Analysis - Surrogate Models to Reduce Prediction Error of Axial Shape Index
Jungseok Kwon, Tongkyu Park, and Sung–kyun Zee(FNC Tech.)

PO2E12 Development of Web-based Digital Core Twin System Using RAST-K/RAST-Q
Dongmin Yun and Deokjung Lee(UNIST), Sang–Rae Moon(KHNP), Ji–woo Lee(Expansion and Universal)

PO2E13 Comparison of Decay Heat after Thermal-Neutron Fission Calculated from Available Fission Product Yield Data for 235U and 239Pu
Do Heon Kim, Choong–Sup Gil, and Jounghwa Lee(KAERI)

PO2E14 Methodology and the BFS-73-1 Fuel Unit Cell Test Results of the Fast Reactor Cross-section Generator, FXGen
Jong–Hyuck Won, Min–Jae Lee, and Jae–Yong Lim(KAERI)

PO2E15 Generation of Physically Consistent Fission Yields Using a Bayesian Approach
YuGwon Jo, Jaewoon Yoo, and Jae–Yong Lim(KAERI)

PO2E16 Feasibility of LEU+ Fuel Loading Patterns in the i-SMR with HIGA and Erbia Burnable Absorbers
Jinsun Kim(KEPCO NF), Jooil Yoon(KINGS)

PO2E17 Conceptual Reactor Core Design of a Heat Pipe Cooled Reactor using MCS
Kyeongwon Kim and Deokjung Lee(UNIST), Hae–Yong Jeong(Sejong Univ.)

PO2E18 Long-term Control of Excess Reactivity in Molten Salt Fast Reactors Using Pebble-type Burnable Poisons
Seong Jun Yoon, Yubin Go, Sung Kyun Zee, Tong kyu Park, and Jae Uk Seo(FNC Tech.)

PO2E19 MTC Effect with Axial Cutback for Controlling Secondary Reactivity Based on Coolant Temperature during the Load-Follow Operation
Yu Yeon Cho, Chang Hee Lee, Han Seung Song, and Junggyu Lee(KEPCO NF)

PO2E20 Estimation of Shutdown Margin for the Long-term Sustainable Small Modular Reactor, SALUS
Jong–Hyuck Won and Jae–Yong Lim(KAERI)

PO2E21 An Investigation of the Effect of ENDF/B-VIII.1 Cross Section Data on Criticality Estimation of i-SMR Core
Seung Hyeon Choi, Chang Ho Shin and Ser Gi Hong(HYU)

PO2E22 Physics-informed Neural Networks with Adaptive Dynamic Adjustment for Neutron Transport in Simple Geometry
Jeongmin Kang and Minseop Song(HYU)

PO2E23 Core Design of Molten Salt Fast Reactor using PbO Reflector and Cycle Study
Yubin Go, Seong Jun Yoon, Jae Uk Seo, Sung–Kyun Zee, and Tongkyu Park(FNC Tech.)

제3분과

원자력시설해체 및 방사성폐기물관리 (Nuclear Facility Decommissioning and Radioactive Waste Management)

3A 5.22.(목)

원자력시설해체 및 방폐물관리 1 (Nuclear Facility Decommisioning and Radioactive Waste Management 1)

| 좌장 최성열(Choi, Sungyeol), 김건영(Kim, Geon Young) | 202A

09:00 Hydrogen Isotope Separation via Liquid Phase Catalytic Exchange using Composite with Platinum Modified Mesoporous Silica and Hydrophobic Polymer
Daeuk Kang(UST), Chan Woo Park and Hyung-Ju Kim(KAERI)

09:20 The Role of h-BN on the Iodine Gas Sorption of Cu under High Humidity
Tiem-SHee Chee, Sujeong Lee, and Ho Jin Ryu(KAIST)

09:40 Deep Eutectic Solvents for Potential Selective Removal of Toxic Metals From Spent Uranium Catalysts
Kwangseo Kim and Sujeong Lee(SNU), Stuart Aberdeen, Shuang Liu, and Richard Foster(NIFTEP|SNU), Sungyeol Choi(IOER SNU|NIFTEP|SNU)

10:00 Development of Small Modular Boron-containing Liquid Radwaste Treatment System
So Jung Shim, Dae Seong Choi, Ji Sup Yoon, Chang Heon Lee, and Young-Ku Choi(NDRI)

10:20 Comparative Study on Monitoring Requirements and Guidelines of Site Investigation for Deep Geological Repositories
Jae Hee Ro, Moonjoo Gil, and Hyong Chol Kim(NSE Tech.)

10:40 Coffee Break

11:00 Theoretical and Experimental Investigation of Radium Adsorption Mechanisms on Engineered Barrier Material
Jaeeun Kang and Wooyong Um(POSTECH)

11:20 Thermal Evaluation of Multi-batch Disposal Strategies and Statistical Uncertainty Analysis in Deep Geological Repository
Ji Eon Kim, Samuel Park, Dongmin Kim, and Sungyeol Choi(SNU)

11:40 Stability Evaluation of Particle Generated from Scrubbed Concrete Waste under Simulated Concrete Pore Water Conditions of Underground Disposal
Chongmyung Jin, Sujoeng Lee, and Sungyeol Choi(SNU), Stuart Aberdeen and Richard Foster(NIFTEP)

12:00 Preparation of Cs-Immobilized Hollandite via Cold Sinter-Assisted Route
Minseok Lee, Hyun Woo Seong, and Ho Jin Ryu(KAIST)

3B
5.22.(목)

원자력시설해체 및 방폐물관리 2
(Nuclear Facility Decommisioning and Radioactive Waste Management 2)

I 좌장 권장순(Kwon, Jang-Soon) I 202A

13:30 Competitive Reaction of OH Radical on Oxidation of Iodide Ion and Decomposition of Methyl Alkyl Ketones
Jei-Won Yeon(KAERI), Minsik Kim(KIT)

13:50 Facile Synthesis of Millimeter-Sized Mesoporous Silica Beads via Sol-Gel Polymerization for Effective Adsorptive Removal of Radioactive Strontium
Hye Jin Cho, Chan Woo Park, Dong Woo Lee, Nguyen Van Toan, Jong-Yun Kim, and Sang Ho Lim(KAERI)

3C
5.23.(금)

원자력시설해체 및 방폐물관리 3
(Nuclear Facility Decommisioning and Radioactive Waste Management 3)

I 좌장 이상훈(Lee, Sanghoon), 김용덕(Kim, Yongdeog) I 202A

09:00 Prototype Tracking Simulation for Nuclear Power Plant Dismantling Using a BIM-Based Radiation Model
Hyong Chol Kim, Jae Hee Ro, Moonjoo Gil, and Young Jin Lee(NSE Tech.)

09:20 Separation of Nickel and Cobalt Through Speciation in an Ion Exchange-Deep Eutectic Solvent System
Stuart Aberdeen, Richard I. Foster, and Sungyeol Choi(SNU)

09:40 Decommissioning of Activated Reactor Components in Germany and Lessons Learned
Luc Schlömer(AiNT), Burkhard Könning and Thomas Eichhorn(GNS), Philipp Sommerer (Reinward), Josef Kim(NESS)

10:00 Prediction of Decontamination Factor Change by Adjustment of Decontamination Scope
Jeseok Song, Chang-Lak Kim, and Yongdeog Kim(KINGS)

10:20 Neutron Diffraction Measurements of Thermal Neutron Attenuation Coefficients in Borated Stainless Steels
Wanchuck Woo, Hobyung Chae, In-Whan Oh, Hyungsup Kim, Myung-Kook Moon, Eunjoo Shin, Jongyul Kim, and Taejoo Kim(KAERI), Jae Hoon Jang and Sang Woo Song(KIMS)

10:40 Coffee Break

11:00 Study on Accelerated Corrosion Experiment of Al6061-B_4C Neutron Absorbers Considering the Spent Nuclear Fuel Wet Storage Environment
Daehyeon Park, Seongjun Kim, and Ji Hyun Kim(UNIST)

11:20 Simulation of Residual Water Radiolysis-Induced Material Degradation in a Dry Storage Canister
Sangjin Kim, Kwanil Chae, Samuel Park, and Sungyeol Choi(SNU)

11:40 Calculating Radionuclide Release Rates from Deep-sea Submerged Spent Fuel Casks: a Surrogate Model Approach
Guhyeon Jeong and Sanghoon Lee(Keimyung Univ.)

12:00 Evaluation of Optimization Algorithms for Fracture Parameter Calibration in Spent Nuclear Fuel Cladding with Reoriented Hydrides
Seyeon Kim and Sanghoon Lee(Keimyung Univ.)

3D 5.22.(목) – 23.(금)

원자력시설해체 및 방폐물관리 (Nuclear Facility Decommisioning and Radioactive Waste Management) – POSTER

| 좌장 윤석(Yoon, Seok), 서범경(Seo, Bumkyoung) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO3D01 Relationship between Crack Size and Residual Water Evaporation during Vacuum Drying of Simulated Damaged Spent Nuclear Fuel
Ji Hwan Lim, Seung–Hwan Yu, and Kyoung–Sik Bang(KAERI), Gyung–sun Chae, Kyung–Wook Shin, and Nam–Hee Lee(Sae–An Engineering Corporation)

PO3D02 Pump Suction Performance and its Impact on the Evaporation Dynamics of Simulated Damaged Spent Nuclear Fuel during Vacuum Drying
Ji Hwan Lim, Seung–Hwan Yu, and Kyoung–Sik Bang(KAERI), Gyung–sun Chae, Kyung–Wook Shin, and Nam–Hee Lee(Sae–An Engineering)

PO3D03 Optimization of the Wet Drying Process in Slip-Casting Using Wet Wipes
Yunmock Jung, Kwenho Kang, JaeSun Han, and Jae Soo Ryu(KAERI)

PO3D04 Removal of Radioactive Cobalt(II) Ions in Chemical & Volume Control System (CVCS) by Electrosorption with Ceramic Nanoparticles Adsorbents Active Material
Ji Chan Kim, Hye Jin Jang, Jae Woo Lee, and Sung Oh Cho(KAIST)

PO3D05 A Study in the Applicability of Plasma Treatment Technology for Perlite Heat Insulation Material
Sangdoo Park and Jeongsu Jeong(KHNP)

PO3D06 Analysis Optimization of I– and NO3– ions using UV-Vis Spectroscopy
Hyolee Kim, Yerim Kim, and Jaehyuk Kang(Jeju National Univ.)

PO3D07 SMR-Specific Approach to Radioactive Gaseous Effluent Evaluation
Joo Hyung Kim, Jae Chang Kim, Junehyung Lee Bernaski, Gyuhyeon Sim, and Yong Kyun Kim(HYU)

PO3D08 Physical and Radiological Characterization Plan for Intermediate-Level Radioactive Waste at KRID
MUNHO JO, JUNGHYUN PARK, SEOHA KIM, and YEONGSU HA(KRID)

PO3D09 Evaluation of Relative Hydraulic Conductivity for Bentonil-WRK Bentonite Buffer Material
Seok Yoon, Jinwoo Kim, Min–Seop Kim, Deuk–Hwan Lee, Minhyeong Lee, and Jin–Seop Kim(KAERI)

PO3D10 Engineering Element Evaluation of Dispersible Waste Solidification Using Substitute Waste
Bong–Jin Ko, Dong–Sik Jin, Sang–Geun Jeon, Young–Seok Jung, and Jae–Geun Lee(Nuclear Environment Technology)

PO3D11 The Process of Self-disposal of Radioactive Waste from KOMAC
Ye–eun Lee, Yi–Sub Min, and Jeong–Min Park(KAERI)

PO3D12 Stress Corrosion Cracking Field Test in KAERI Underground Research Tunnel using 3D Printed Cells
Nakkyu Chae, Minsoo Lee, and Jinseop Kim(KAERI)

PO3D13 Characteristics of Uranium Minerals and Uranium Distribution of Fracture Zones of Uranium Deposits for Natural Analogue Study
Geon Young Kim, Sanghoon Lee, and Ji–Hun Ryu(KAERI), Dongbok Shin(Kongju National Univ.), Sung–Wook Jeen(Jeonbuk National Univ.), Min Sub Sim(SNU)

PO3D14 Design of Quality Assurance System for APro Code Based on PAPiRUS
In–Young Kim and Jung–Woo Kim(KAERI)

PO3D15 Long-term Evolution of Radionuclide Migration in an Artificial Disposal System: Modeling using the APro Framework
Heejae Ju, Soobin Kim, Yong–Min Kim, In–Young Kim, and Jung–Woo Kim(KAERI)

PO3D16 Study on Radionuclide Inventory Evaluation in LILW using Material Balance Method
Hyeong Gu Kang, Yong Ho Roh, Han Cheol Yang, Seung Beom Goh, and Yong Kyun Kim(HYU)

PO3D17 Leaching Behavior of Multi-element Hollandite Ceramic for Immobilizing Radioactive Cesium
Hyun Woo Seong and Ho Jin Ryu(KAIST)

PO3D18 Determination of Equilibrium Constants for Calcium-Sodium Exchange Reactions onto Bentonil-WRK Montmorillonite
Seonggyu Choi, Hyun–Kyu Lee, Jae–Kwang Lee, Song–I Yu, and Sang–Ho Lee(KAERI)

PO3D19 Earthquake Scenario Derivation and Impact Assessment of High-Level Radioactive Waste Disposal Repository Using GoldSim
Hyun Jin Yu, Yong Hee Han, Sang Ryeol Yoon, Jun Yeong Park, and Jong Soon Song(CSU)

PO3D20 Study of the Irradiation Effect on Waste Forms: A Review
Sehyun Cho, Yueun Kang, and Jaehyuk Kang(Jeju National Univ.)

PO3D21 Safety Evaluation of HIC based on the Type A Transport Requirement
Dongin Park, Hyolim Lee, and Sanghoon Lee(Keimyung Univ.)

PO3D22 Design Study of High-Efficiency Inspection System for Waste Drums of Nuclear Power Plant Decommissioning
Byeongno Lee(KAERI), Hee Seo and Jimin Shin(Jeonbuk National Univ.)

PO3D23 Experience Case of ALARA Evaluation Considered During Site Remediation Phase
Hyung–Woo Seo, Young–Il Na, Chan–Geun Park, and Gang–Woo Ryu(KHNP)

PO3D24 A Review of the Final Decommissioning Plan for Wolsong Unit 1
Jin–Won Son and Hyu–Chang Choi(KHNP)

PO3D25 Application of Statistical Test for Characterization Survey in Nuclear Decommissioning: Regulatory Perspectives
Hyungi Byun and Jaehoon Byun(FNC Tech.), Bongsoo Lee(KHNP), Seokyoung Ahn(PNU)

PO3D26 Preparatory Framework for Acquiring Long-Term Degradation Data of Concrete in Nuclear Power Plant Decommissioning
SU HEE LEE(KHNP)

PO3D27 Comprehensive Radiological Characterization and Decommissioning Plan: A Comparative Study of Wolsong-1 and German Nuclear Power Plants
Jihwan Yu, Minchul Kim, Hyuchang Choi, Sukwon Jung, Younil Na, Hyunmin Kim, Changeun Park, Gangwoo Ryu, and Minseong Kim(KHNP)

PO3D28 Nuclear Power Plant Decommissioning and Reuse Case Study
Young Il Na, Hyung Woo Seo, and Gang Woo Ryu(KHNP)

PO3D29 The Status of Domestic Nuclear Power Plant Decommissiong
Young Il Na, Hyu Chang Choi, and Chan Geun Park(KHNP)

PO3D30 Case Study of the Cutting Techniques of Reactor Vessel and Reactor Vessel Internals
Min Seong Kim, Hyu Chang Choi, Suk Bon Yoon, and Suk Won Jung(KHNP)

PO3D31 Review of NPP Decommissioning Cost Estimation Methodology and Programs
Minhee Kim, Sunil Kim, and Kwangho Lee(KRID)

PO3D32 Development of Residual Radioactivity Exposure Scenario and Pathway for Clearance Media of Decommissioniing Nuclear Power Plant
Gang Woo Ryu, Young Il Na, Hyung Woo Seo, and Min Seong Kim(KHNP)

PO3D33 Development of Input Parameters for ALARA Action Level Evaluation of Decommissioning Nuclear Power Plant
Gang Woo Ryu, Young Il Na, Hyung Woo Seo, and Min Seong Kim(KHNP)

PO3D34 Review of NWMO Spent Fuel Delayed Hydride Cracking (DHC) Program
Donghee Lee, Kiyoung Kim, Taehyung Na, and Eunyoung Kim(KHNP)

PO3D35 Developing an Evaluation Program for Rapidly Assessing Spent Nuclear Fuel Storage Pool Temperatures
Taehyeon KIM, Eunyoung KIM, Minho Song, and Kiyoung KIM(KHNP)

PO3D36 Design of the MACSTOR Type Dry Storage Cask for the Damaged PWR Fuel
Seok Jun Hong, Chang Je Park, Seo hyeon Shin, Nak Woong Yang, and Do Yeong Lee(Sejong Univ.)

PO3D37 Analysis of Attenuation Characteristics of Radiation Shielding Materials of Hot Cells under Expanded Declaration of the Additional Protocol (AP)
Sera Jeon, Areum Choi, Seungmin Lee, and Chul Heo(KINAC)

PO3D38 Literature Survey on Construction Cost Estimation of Hot Cell Facility
Sang–Jin Park, Hyojik Lee, and Jonghui Han(KAERI)

PO3D39 Salt Damage Impact to Silo Dry Storage System for Spent Nuclear Fuel
MINHO SONG, EUNYOUNG KIM, and SUNGHWAN CHUNG(KHNP)

PO3D40 Thermal Modeling in a Vacuum Environment for Dry Storage of Spent Nuclear Fuel
Ju–Chan Lee, Seunghwan Yu, and Doyun Kim(KAERI)

PO3D41 Monitoring Temperature-dependent Stability of Hydrogen Peroxide as a Radiolysis Product in Various Aqueous Solutions
Wansik Cha(KAERI), Jiyeon Nam(KHU)

PO3D42 Study of Wet Oxidation Process for C-14 Separation of Cellulose-Based Radioactive Waste
Hyeonyoung Cho(KORASOL Co.,|UST), Byungman Kang and Tae–Hyeong Kim(KAERI), Dong Woo Lee, Jong–Yun Kim, Sang Ho Lim, and Jeongmook Lee(UST|KAERI)

PO3D43 Construction of Radiochemical Laboratory for RadWaste Analysis in KRID
SeungHo Lee, Homyeong Lee, Yeong Su Ha, Eunmi An, and Seokhan Kim(KRID)

PO3D44 Construction and Utilization of a Dedicated Gamma Nuclide Analysis System for Nuclear Decommissioning Waste
Seokhan Kim, Seung–Ho Lee, Eunmi An, Homyung Lee, and Yeong Su Ha(KRID)

PO3D45 Salt Removal Using Solid Phase Extraction
Jin Young Yang, Chang Hyuk Kang, and Hee–Jung Im(Jeju National Univ.)

PO3D46 Development of a New Chemical Process for Radioactive Waste Treatment
Bo–Bae Cho, So–Yun Jeong, Hyun–Young Shin, Chan–Hee Park, Sung–Ryul Kim, Jung–Min Oh, Ba–Ro Lee, Hye–Jin Kim, Ji–Ung Kim, Wook–Jae Yoo, and Kyu–Tae Park(Orbitech)

PO3D47 Active Carbon Demonstration Case Using Plasma Treatment Equipment
JEONGSU JEONG, Sangdoo Park, and Sunghoon Hong(KHNP CRI)

제4분과

핵연료 및 원자력재료 (Nuclear Fuel and Materials)

4A 5.22.(목)

핵연료제조, 성능 및 평가 I (Fuel Fabrication, Performance & Test I)

I 좌장 장훈(Jang, Hun), 김재준(Kim, Jae Joon) I 202B

09:00 Fabrication of LEU+ UO_2 Fuel Pellets for Irradiation Test at KAERI
Dong Seok Kim, Dong-Joo Kim, Jae Ho Yang, Ji-Hae Yoon, Ji-Hwan Lee, Yeon-Song Jung, and Hyung-Jin Kim(KAERI)

09:20 As-run Analysis of HANARO Irradiation Test for CSBA-loaded Pellets and KAERI ATF
Seongwoo Yang, Junesic Park, Yoon-Taeg Shin, Ye-Eun Na, and Dong-Joo Kim(KAERI)

09:40 Development of a Fabrication Process for Advanced Metal Fuel
Jungsu Ahn, Sang-Gyu Park, and JunHwan Kim(KAERI)

10:00 Fabrication and Thermal Conductivity Characterization of UO_2 Nuclear Fuel with High-Content Gd_2O_3
Ji Hwan Lee, Dong Soek Kim, Dong-Joo Kim, Jae Ho Yang, Yeon song Jeong, Ji-hae Yoon, and Hyung jin Kim(KAERI), Dong Wook Shin(HYU)

10:20 Development of Machine Learning Potential and Evaluation of Diffusion Behavior in UO_2 based on the Molecular Dynamic Simulations
Jiwoo Kim and Ho Jin Ryu(KAIST), Jae Joon Kim(KAERI)

10:40 Coffee Break

11:00 Key Issues in the Fabrication of Oxycarbide Kernels for TRISO Fuel
Minseok Lee, Injin Sa, and Yeon-Ku Kim(KAERI), Eungseon Kim(KAIST)

11:20 Improvement of Fuel Performance and Safety Analysis Codes for Regulatory Research
Yongsik Yang, Jangsoo Oh, Jaeyong Kim, and Changhwan Shin(KAERI), Ju Yeop Park(KINS)

11:40 Verification Calculation and Future Utilization Plan of the FDM Code 'Multilayer'
JaeYong Kim, SungUk Lee, and YongSik Yang(KAERI), JuYeop Park(KINS), SeungKyun Kang(SNU)

12:00 Research Status and Modeling Development of FFRD
JangSoo Oh and Yongsik Yang(KAERI), JuYeop Park(KINS)

4B 5.22.(목)

재료열화 및 기기건전성 I (Materials Degradation and Structural Integrity I)

I 좌장 반치범(Bahn, Chi Bum), 김성우(Kim, Sung Woo) I 203

09:00 Hydrodynamic Effects on Flow-Accelerated Corrosion in Elbow Pipes: Insights from Experiments and CFD Analysis
Seongin Moon, Kyung-Mo Kim, Jong Yeon Lee, Dong-Jin Kim, Wan-Young Maeng, Gyeong-Geun Lee, and Soonwoo Han(KAERI)

09:20 Mechanical Response of Nanotwinned Copper under Proton Irradiation
Daehyeok Ahn, Hadi Ghaffarian, and Dongchan Jang(KAIST)

09:40 Evaluation of Phase in Heavy-Ion Irradiated Doped Gadolinia
Hakjun Lee, Hojin Ryu, and Hyeongjin Kim(KAIST), Seunghyeon Lee(KAERI)

10:00	Construction and Application of a Machine Learning Potential for Analyzing the Chemical State and Behavior of Oxygen Impurity in Liquid Pb, Li, and Pb-Li Eutectic Jimin Lee and Takuji Oda(SNU)
10:20	Can Nanocrystalline Zirconium Suppress Hydride Precipitation? Min-Kyung Choi, Ho Lee, Ho-A Kim, and Sangtae Kim(HYU)
10:40	Coffee Break
11:00	Machine Learning for Modeling IGSCC in Austenitic Stainless Steels in LWRs Dayu Fajrul Falaakh and Chi Bum Bahn(PNU)
11:20	pH Agent Effect on Corrosion behavior of 316L Stainless Steel in Boron-free High-Temperature Water Wonjun Choi, Baosheng Bai, Hyeeun Jeong, and Chi Bum Bahn(PNU), Seung Heon Baek, Geun Dong Song, and Young-Jin Kim(FNC Tech.)
11:40	Experimental Simulation of Neutron Irradiation Effects on Stainless Steel 304H Using Non-Irradiation Method Hyeonje Ryoo, Junhyuk Ham, and Ji Hyun Kim(UNIST)

4C 5.22.(목) 핵연료제조, 성능 및 평가 II (Fuel Fabrication, Performance & Test II)

| 좌장 정태식(Jung, Tae-sik), 김동석(Kim, Dong Seok) | 202B

13:30	High Burnup Issues of Zr-based Nuclear Fuel Cladding Sun-Ki Kim and Seok Kim(KAERI)
13:50	Investigation of Interface Property of Cr-coated Zircaloy-4 by Micromechanical Testing Jiwon Mun and Ho Jin Ryu(KAIST), Hyun-Gil Kim(KAERI), Peter Hosemann(UC Berkeley)
14:10	Use of Automated Feature Selection Algorithms to Calibrate a Coating Thickness Measurement Signal in Eddy Current Testing for the Inspection of Accident Tolerant Fuel Maren Rake, Hoyoung Lee, Martin Schulze, and Henning Heuer(Fraunhofer IKTS), Young Hyun Lee, Su Chung Chi, and Duill Kim(Samyong Inspection Engineering), Dae Gyun Ko and Kwang Young Lim(KEPCO NF)
14:30	Coffee Break
14:50	Microstructure and Hydrogen Solubility Effects on the Creep Behavior of Zircaloy-4 Sungjun Choi, Ho-A Kim, and Sangtae Kim(HYU)
15:10	Dissolution Behavior of Rare Earth Oxides Doped Gadolinia Burnable Absorber (REGA) Hyeong Jin Kim, Hyeongju Bae, and Ho Jin Ryu(KAIST)
15:30	Study on the Suitability of Burnable Absorber Material with Excess Reactivity Control for Boric Acid-free Operation in i-SMR Tae-sik Jung, Yeon-soo Na, Min-jae Joo, and Sung-woo Ha(KEPCO NF)

4D 5.22.(목) 혁신제조 및 신소재 (Innovative Manufacturing and New Materials)

| 좌장 이영호(Lee, Young-ho), 김채원(Kim, Chaewon) | 203

13:30	Feasibility Study on the Fabrication of Additive-Manufactured Disposal Canister using a Large-Scale Wire-Arc Additive Manufacturing (WAAM) System Young-Ho Lee, Jae-Deuk Kim, and Jin-Seop Kim(KAERI)

13:50 Temperature Influence on Microstructural Evolution at Joining Interface of Inconel 718 and 316L Powders using Spark Plasma Sintering (SPS)
Seong Gyu Chung, Omer Cakmak, Jung Wook Cho, and Hwasung Yeom(POSTECH),
Kumar Sridharan(University of Wisconsin–Madison)

14:10 Effect of Heat Treatment on Precipitate Characteristics, Microstructure, and Mechanical Properties of Fe-12Cr-6Al Alloy Fabricated via Laser Powder Bed Fusion
Omer Cakmak, Hwasung Yeom, and Jung–Wook Cho(POSTECH)

14:30 Coffee Break

14:50 Corrosion Behaviors of high-Al Containing Austenitic Stainless Steels in Cl-based Molten Salt Environment
Sumin Kim, Hyun Joon Eom, Shen Yuan, Shanmugam Mannan Muthu,
Hasan Izhar Khan and Changheui Jang(KAIST), Sungyeol Choi and Taehoon Park(SNU)

15:10 Corrosion Resistance Enhancement of LPBF-Printed In625-Based Metal Matrix Composites in Molten Salt Environments
Ho–A Kim and Sangtae Kim(HYU), Joo–Hee Kang(WAVESENSE),
Emre Tekoglu and Ju Li(MIT)

15:30 Radiation Resistance of Duplex Stainless Steel under Proton Irradiation: Correlation between Microstructural Evolution and Nano-mechanical Properties
Hyun Joon Eom, Sumin Kim, Chaewon Jeong, Ye–jin Kweon, and Changheui Jang(KAIST),
Chaewon Kim(KAERI)

4E 5.23.(금) 용융염원자로 재료 (Materials for Molten Salt Reactor)

| 좌장 김태호(Kim, Taeho), 김대종(Kim, Daejong) | 202B

09:00 Corrosion Resistance Assessment of Nickel in Molten Salt Environments
Seong Sik Hwang, Min Sung Hong, and Gyeong Hoi Koo(KAERI)

09:20 Tensile Properties of Materials after Molten Salt Corrosion in MgCl2-NaCl
Daejong Kim, Chaewon Kim, and Hyeon–Geun Lee(KAERI), Chaeyeong Kim(SNU)

09:40 Enhanced Corrosion Resistance against Molten Chloride Salt Media Using MgAl2O4 Conversion Layer: Dynamic Interaction of Porous Alumina with Molten NaCl-MgCl2
Jun Heo, Md Amir Sohel, Dornum Katusiime, and Sung Oh Cho(KAIST)

10:00 Long-term Corrosion Behavior of Structural Materials in Molten Chloride Salts
Chaewon Kim, Hyeon–Geun Lee, and Daejong Kim(KAERI), Chaeyeong Kim(SNU)

10:20 Behavior of $ZrCl_4$ in Molten Salt and Its Effect on the Corrosion of Inconel Alloy
Kyeongtae Park and Jaeyeong Park(UNIST)

10:40 Coffee Break

11:00 First-principles Study on the Behaviors of Cr, Mo, and W in the Interfacial Bulk Region of Ni-based Alloys for MSR Applications
Chaeyeong Kim and Takuji Oda(SNU), Hyeon–Geun Lee(KAERI)

11:20 Development of Electrochemical Nickel Coating Technology for Structural Material Protection in Molten Salt Reactor Environments
Younghwan Jeon and Jungho Hur(KAERI), Jaeyeong Park(UNIST)

11:40 Effect of various Impurity Additives on the Corrosion Behavior of Structural Materials in NaCl-MgCl2 Salt
Seok Min Yoon and Seol Kim(UST), Chang Hwa Lee, Taeho Kim, and Eun–Young Choi(KAERI)

12:00 Utilizing Aluminium Chlorides for Oxygen Removal in Molten Fuel Salts
Jihun Kim and Sungyeol Choi(SNU), James Daw and Clint Sharrad(University of Manchester)

4F 5.23.(금) 재료열화 및 기기건전성 II (Materials Degradation and Structural Integrity II)

| 좌장 황진하(Hwang, Jin-ha), 이경근(Lee, Gyeong-Geun) | 203

09:00 Refinement of Reactor Pressure Vessel Embrittlement Trend Curves Using a Mixed-Effects Model
Gyeong–Geun Lee, Bong–Sang Lee, Min–Chul Kim, Junhyun Kwon, and Jong–Min Kim(KAERI)

09:20 Thermal Fatigue Testing on Simulated Specimens
Su Yeong Lee and Jin Weon Kim(CSU), Tae Soon Kim and Hun Suk Nam(KHNP)

09:40 Analytical Equations to Predict Thermal Aging Effect on Maximum Load of Cracked Cast Austenitic Stainless-Steel Components
Eui–Kyun Park and Yun–Jae Kim(Korea Univ.), Do Jun Shim(EPRI)

10:00 A Comparative Study on Geometry Effects of Small Modular Reactor Vessel for Nozzle Corner Crack Analysis
Heejun Yang, Min Seek Kim, and Yoon–Suk Chang(KHU)

10:20 Effects of Long-Term Thermal Aging on Mechanical Properties and Microstructural Evolution of 17-4 PH Stainless Steel in Simulated Thermal Conditions for Nuclear Applications
Junho Lee, Gitae Park, Chang–Young Oh, and Yeong Ho Son(KIMS), Seunghyun Kim(KORAD), Chi Bum Bahn(PNU)

10:40 Coffee Break

11:00 Evaluation of Localized Liner Failure using XFEM
Seongno Lee, Do Yeon Lee, and Yoon–Suk Chang(KHU)

11:20 A Comparative Study on Ultimate Pressure Capacity Evaluation Parameters of Small Modular Reactor Steel Containment Vessel
Min Jeong Park and Yoon–Suk Chang(KHU)

11:40 Improved J and COD Estimation for Restrained Through-Wall Cracked Pipes
Jae–Yoon Kim, Hye–Won Jeong, and Yun–Jae Kim(Korea Univ.), Nam–Su Huh(SEOULTEC)

12:00 Structural Integrity Assessment through Reactor Lower Head Failure Analysis under LBLOCA Scenario
Eui–Kyun Park, Jun–Won Park, and Yun–Jae Kim(Korea Univ.), Kuk–Hee Lim(KINS), Eung–Soo Kim(SNU)

4G 5.22.(목) – 23.(금) 핵연료 (Nuclear Fuels) – POSTER

| 좌장 윤학규(Yoon, Hak Kyu), 양성우(Yang, Seongwoo) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO4G01 Structural Integrity Test Results of Top Nozzle for i-SMR Fuel
Joongjin Kim, Joohong Chun, Joonkyoo Park, Donggeun Ha, and Yoonho Kim(KEPCO NF)

PO4G02 Forced Vibration Test of the Fuel Assembly at EOL Condition
JinGwan Son, JinSun Kim, and JoonKyoo Park(KEPCO NF)

PO4G03 Impact Simulation of Spacer Grid Designed for i-SMR Fuel
Youngik Yoo, Joonkyoo Park, and Yoonho Kim(KEPCO NF)

PO4G04 Microstructure Evolution of Atomized U_3Si_2 Dispersion Fuel under Irradiation
Tae Won Cho, Dong Jun Park, Jong Man Park, and Yong Jin Jeong(KAERI),
Ann Leenaers, Jared Wight, and Beatriz Acevedo(SCKCEN)

PO4G05 Analysis of Mechanical Properties of Cladding Tubes with Varying Coating Thickness
Dong–Hyeon Kwak and Kwang–Young Lim(KEPCO NF)

PO4G06 Establishment of i-SMR Fuel Assembly Hydraulic Test Facility
Oh Joon Kwon, Jun Gwan Son, and Joon Kyoo Park(KEPCO NF)

PO4G07 Analysis of Ultrasonic Propagation Characteristics in ATF Cladding Tube for Failed Fuel Rod Detection
Jung Cheol Shin(Metatechno Co.,), Un Hak Seong(Chungnam National Univ.), Seung Jin Baek(KHNP),
Yung Jong Joo, Dae Gyun Ko, Kwang Young Lim, and Yun Ho Kim(KEPCO NF)

PO4G08 Development and Validation of a 3D Full-Length Fuel Rod Surface Measurement System
Jinseon Kim, Joongjin Kim, and Joonkyoo Park(KEPCO NF)

PO4G09 Development of Density Measuring Equipment for Hot Cell Testing
Youngjun Kim, Heemoon Kim, Dongjun Park, and Sunyong Lee(KAERI)

PO4G10 Static Characterization of Spacer Grid with Chrome-Coated Nuclear Fuel Rod Inserted
Hak In Lee, Joong Jin Kim, Ba Leum Kim, Shin Ho Lee, Ding Geun Ha, and Yoon Ho Kim(KEPCO NF)

PO4G11 Assessment of TRISO Behavior in HTGR Coolant Temperature Conditions Using the COPA Code
Jae Joon Kim, Young Min Kim, and Eung–seon Kim(KAERI)

PO4G12 Incorporation of Mechanistic Based Fission Gas Release Model to Metal Fuel Performance Codes
Cheol Min Lee, Jung–Hyung Kim, Ju–Seong Kim, Byoung–Oon Lee, Heung Soo Lee, Jin–Sik Cheon,
and Chan–Bock Lee(KAERI)

PO4G13 Phase and Dissolution Analysis of ZrO_2, CaO_2 Doped Gd_2O_3
Hyeong Ju Bae, Hyeong Jin Kim, and Ho Jin Ryu(KAIST)

PO4G14 Sensitivity Analysis of Gap Conductance Models in Open Gap for PWR Fuel Performance Code, MERCURY
Changhwan Shin and Hyochan Kim(KAERI)

PO4G15 Development of a Tritium Analysis Module for COPA code
Young Min Kim, Eung Seon Kim, and Chan Soo Kim(KAERI)

PO4G16 Evaluation of Measurement Uncertainty of Thermal Diffusiuity UO_2-Mo Micro- Plate pellet
Jae Ho Yang, Dong Seok Kim, Dong–Joo Kim, Ji–Hae Yoon, Ji Hwan Lee, and Yumsong Jung(KAERI)

PO4G17 Preliminary Evaluation on Reaction Loss Rate of NdYO3 Plasma-spray Coated Crucible
Ki–Hwan Kim, Hoon Song, Seung–Uk Mun, Sang–Kyu Park, and Jun–Hwan KIM(KAERI)

PO4G18 Study on the Fabrication of Magnetite-Coated Fuel Cladding Specimens for CILC Evaluation Using a Slurry Coating Method
Seong–Jun Ha, GI–Woong Kim, Sang–Yeob Lim, Soon–Hyeok Jeon, Do–Haeng Hur,
and Hee–Sang Shim(KAERI)

4H 5.22.(목) – 23.(금)

원자력재료 (Nuclear Materials) – POSTER

| 좌장 이현근(Lee, Hyeon-Geun), 심희상(Shim, Hee Sang) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO4H01 A Comparative Study on Ultimate Pressure Capacity by Containment Structure Type
Do Yeon Lee, Min Jeong Park, and Yoon-Suk Chang(KHU)

PO4H02 Comparison of Thermal Aging Behavior of CF8 and CF8M Cast Austenitic Stainless Steels
Hafiz Shoaib Mehboob, Hyun Joon Eom, Yoohwa Kim, Taejeong An, and Changheui Jang(KAIST)

PO4H03 PWR Fresh Fuel Shipping Package Development
Daewoon Choi, Supil Ryu, Hakin Lee, Juhong Chun, Donggeun Ha, and Yoonho Kim(KEPCO NF)

PO4H04 High-Temperature Oxidation Behavior of Zirconium Alloys in Simulated Spent Fuel Pool Accident Conditions
Woohyun Lim, Taeyun Kwon, and Chansun Shin(Myongji Univ.), Hyung-Ha Jin(KAERI)

PO4H05 Accelerated Oxidation of Stainless Steels in Heavy-Water Reactor Spent Fuel Pool Accidents
Taeyun Kwon, Woohyun Lim, and Chansun Shin(Myongji Univ.), Hyung-Ha Jin(KAERI)

PO4H06 Next-Generation Trivalent Chromium Electroplating for FCCI Prevention in SFRs: Challenges and Future Research Plans
Jinuk Jang, Jeongmok Oh, Sunghwan Yeo, Sungho Kim, and Junhwan Kim(KAERI)

PO4H07 Rehydration in the Melting Process of Chloride Salts
Seol Kim(UST), Hyeonwoo Kim and Sangtae Kim(HYU),
Dokyu Kang, Taeho Kim, Chang Hwa Lee, and Eun-Young Choi(KAERI)

PO4H08 Effects of PWHT on Fracture Toughness of EB Welds in SA508 Gr.3 Low Alloy Steel
Se-Mi Hyun, Joon Yeop Kwon, Seokmin Hong, Jongmin Kim, and Min-Chul Kim(KAERI)

PO4H09 Corrosion of SiC Ceramics Fabricated by Different Methods in NaCl-$MgCl_2$ Molten Salt
Weon-Ju Kim, Jung Bum Kim, Chaewon Kim, Hyeon-Geun Lee, and Daejong Kim(KAERI)

PO4H10 Neutron Shielding Gd2O3 – Polymer Coating Development for Dry Cask Storage System
Yujin Yang and Hwasung Yeom(POSTECH), Joonho Park, Geumjae Lee, and Sunhong Park(Omnicoat)

PO4H11 Effect of Trace Element Addition on Mechanical Properties and Corrosion Resistance in Ni-based Alloys for Molten Salt Reactor
Byung-Hyuk Jun, Chaewon Kim, Daejong Kim, and Hyeon-Geun Lee(KAERI)

PO4H12 Molecular Dynamics Simulation of Helium Diffusion in Nickel
Junhyun Kwon, Gyeong-Geun Lee, and Hyeon-Geun Lee(KAERI), Chaeyeong Kim and Takuji Oda(SNU)

PO4H13 Effects of Heavy Ion Irradiation on AlSc Alloys
Sung Eun Kim(Inha Univ.)

PO4H14 Irradiation Induced Creep in Al-Sc Alloys using In-Situ TEM Method
Sung Eun Kim(Inha Univ.)

PO4H15 Comparative Analysis of Crack Density of 20% and 35% Cold Rolled Type 304 SS according to Slow Strain Rate Test using IASCC Test Facility (ITF) Mock-up
Sung Hwan Cho and Sung Woo Kim(KAERI)

PO4H16 Machine Learning-Driven Prediction of Fe-(9-12)Cr Steel Properties for Nuclear Structural Applications
Hongin Kim(Yonsei Univ.|KAERI), Sunghwan Yeo, Sung Ho Kim, and Jun Hwan Kim(KAERI),
Young-Kook Lee(Yonsei Univ.)

PO4H17 Damage-Induced Acceleration of Molten Salt Corrosion in Ni-Coated Alloys
Younghwan Jeon(KAERI), Kyeongtae Park and Jaeyeong Park(UNIST)

PO4H18 Prediction of Long-term Creep Strength and Negligible Creep Curve for Eurofer Steel
Woo–Gon Kim, Youngjin Roh, and Seonhwa Kim(KETG), Ki–Ean Nam and Hyeong–Yeon Lee(KAERI)

PO4H19 Investigation of High Temperature Hydrogen Degradation of Structural Materials in Nuclear Energy System
Junyeong Jo and Hwasung Yeom(POSTECH)

PO4H20 Predicting Hoop Mechanical Properties of Nuclear Fuel Cladding from the Ring Compression Test (RCT) Result
Low Wei Chen, Dahyeon Woo, and Youho Lee(SNU)

PO4H21 Finite Element Analysis of Stress Evolution at Metal-Oxide Interface during High Temperature Oxidation
Jaeheon Kim and Chi Bum Bahn(PNU)

PO4H22 Irradiation Capsule (24M-05K) Design for TP 304H Stainless Steel in HANARO
Kee–Nam Choo, Jong–Woo Kim, Hae–Sun Jeong, Seng–Jae Park, Yoon–Taek Shin, and Sung–Woo Yang(KAERI)

PO4H23 Uncertainty Evaluation Program of Specific Heat Measurement Data
Kweonho Kang, Jaesoo Ryu, and Changhwa Lee(KAERI), Changje Park(Sejong Univ.)

PO4H24 Nuclear and Thermal Sensitivity Analysis of a Double-Layer Thermal Medium Capsule in Neutron Irradiation Tests
Jong Woo Kim, Hae Sun Jeong, Junesic Park, Ye Eun Na, Ki Nam Choo, and Seong Woo Yang(KAERI)

PO4H25 Design Thickness Variation in i-SMR Reactor Vessels: A Comparison of ASME BPVC Sec. III Subsections NB and NE
Beom–jin Kim and Jin–Ha Hwang(Pukyong National Univ.)

PO4H26 Methodologies for Acoustic Induced Vibration Analysis of Reactor Vessel Internals at Fluid-Structure Interfaces
Chiwoong Ra, Hyungyu Roh, and No–cheol Park(Yonsei Univ.)

제5분과

원자력 열수력 (Nuclear Thermal Hydraulics)

5A 5.22.(목)

원자력 열수력 실험 (Thermal Hydraulic Experiment)

| 좌장 조형규(Cho, Hyoung Kyu), 양진화(Yang, Jin-Hwa) | 301

09:00 Experimental Investigation of Air-water Two-phase Flow through Inclined Circular Channel with Wire-mesh Sensor: Preliminary Test
Hyukjae Ko, Taehwi Kim, Goon-Cherl Park, and Hyoung Kyu Cho(SNU)

09:20 Reduction of Radiative Heat Loss in Small Modular Reactors Through Thermal Radiation Shielding: An Experimental and CFD Approach
Beomjin Jeong, Geunyoung Byeon, Namgook Kim, and Sung Joong Kim(HYU)

09:40 Local Thermal Analysis using an Optical Fiber Eemperature Sensor in a Flow Boiling Heat Transfer
Donghwi Lee, Hyeon Taek Nam, and Seungro Lee(Jeonbuk National Univ.)

10:00 Experimental Investigation of Radiative and Convective Heat Transfer Coefficients in a Metal Containment Vessel for Small Modular Reactors under Steady-State Conditions
Geunyoung Byeon, Beomjin Jeong, Namgook Kim, JinHo Song, JoonEon Yang, and Sung Joong Kim(HYU)

10:20 Preliminary Experiment on Individual Hydrogen Bubble Behaviors in Alkaline Water Electrolysis
Seheun Kwon, Seungju Lee, Shinil Kim, and Haekyun Park(Kyungpook National Univ.)

10:40 Coffee Break

11:00 Experimental Investigation on Augmentation of Critical Current Density in Alkaline Water Electrolysis using Shroud Structure
Jaeduck Seo, Jeonghun Seo, and Haekyun Park(Kyungpook National Univ.)

11:20 Measurements of Bubbly Flow on a 4x4 Rod Bundle Under Oscillating Conditions
Tan Hung Hoang, Myung Ho Kim, and Byoung Jea Kim(Chungnam National Univ.)

11:40 Experimental Observation of Bubble Behavior and CHF on a Downward-Facing Surface in Pool Boiling
Young Hee Kim, Young Hoon Jeong, and Dong Hun Shin(KAIST), Min Suk Lee(Texas A M Univ.), Dong Hoon Kam(Argonne National Laboratory)

5B 5.22.(목)

열수력해석 (Thermal Hydraulic Analysis)

| 좌장 이승준(Lee, Seung Jun), 이제희(Lee, Jehee) | 302

09:00 Analytical and Numerical Evaluation of Wall Thermal Boundary Conditions in Free Convective Thin Plates with Internal Heat Generation
Moon Won Song(Jeonbuk National Univ.)

09:20 Development of Virtual Nuclear Reactor for Design and Demonstration of SMRs
Yun Je Cho, Sung Hoon Choi, and Seong Ju Do(KAERI)

09:40 Numerical Analysis of Core Melt Solidification and Spreading Behavior Using the MPS Method
Cho Yun-Sik, Kim Sung Joong, and Song JinHo(HYU)

10:00	Conceptual Problem-Based Verification of the Containment Thermal-Hydraulics Analysis Module for Severe Accident Analysis Kum Ho Han, Jehee Lee, and Yeon–Jun Choo(FNC Tech.)
10:20	Reactor Power and Thermal Safety Margin in a Natural Circulation Small Modular Reactor Adopting TOP Lattice Core Design Jae Hyung Park, Yujin Kim, Hyo Jun An, Jihun Im, JinHo Song, and Sung Joong Kim(HYU)
10:40	Coffee Break
11:00	CFD of Two-Phase Natural Circulation in the Presence of Non-Condensable Gas Nam Kyu Ryu and Byeong Jae Kim(Chungnam National Univ.)
11:20	A Study on the Thermal–hydraulic Characteristics of Zigzag Channel PCHE using PIV Experiment and CFD Yoomyeong Lee, YeonGyu Lee, and Donghwi Lee(Jeonbuk National Univ.), Seongmin Lee, HongBeom Park, and Kyoungwoo Seo(KAERI)
11:40	Evaluation of Effects for Subchannel-scale Rod Deformation during LBLOCA Yunseok Lee and Taewan Kim(Incheon National Univ.)

5C 5.22.(목)

원자력 열수력 실험 (Thermal Hydraulic Experiment)

| 좌장 이재봉(Lee, Jae–Bong), 박영재(Park, Youngjae) | 301

13:30	Experiments on Charging of Cold Thermal Energy by Mass Flow Rate of Packed Bed Cryogenic Energy Storage System Dahui Kwack, Chunsik Lee, and Choongsub Yoem(IAE)
13:50	Exploring the Feasibility of 3D-printed High-temperature Heat Pipe for Nuclear Reactor Application: Seal Testing and Water Charged Thermal Cycling Evaluation Almanzo Arjuna, Faruk Celik, Dong hun Lee, and In cheol Bang(UNIST)
14:10	Sensitivity Analysis for PAFS Cooling during an SBLOCA under PECCS Operation using ATLAS Test Facility Jin–Hwa Yang, Byoung–Uhn Bae, Seok Cho, Yu–Sun Park, Nam–Hyun Choi, Jae–Bong Lee, Jong–Rok Kim, Jun–Yeong Jung, and Kyoung–Ho Kang(KAERI)
14:30	Coffee Break
14:50	Design and Development of Experimental Facility for Supercritical Two-Stage High-Pressure Ratio Centrifugal Compressor Gibbeum Lee, Jae Eun Cha, and Han SEO(KAERI), SI Woo Lee(Jinsol Turbo)
15:10	Experimental Investigation on Convective Heat Transfer in a Vertical Annulus under Natural Circulation Water Flow Conditions Seongbae Park, Youngchang Ko, and Byongjo Yun(PNU)
15:30	Thermal-Hydraulic Behavior of LOCA during Shutdown Operation: C4.2 Test Findings from OECD/NEA ATLAS Phase 3 Project Jae Bong Lee, Byoung–Uhn Bae, Yusun Park, Jongrok Kim, Seok Cho, and Kyoung–Ho Kang(KAERI)

5D 5.22.(목)

열수력해석 / 열수력 신기술 (Thermal Hydraulic Analysis / Advanced Thermal Hydraulics)

| 좌장 이재룡(Lee Jaeryong), 이윤희(Lee, Yoonhee) | 302

13:30 Numerical Evaluation of Thermal Behavior of Freeze Valve System for K-MSR
Sungbo Lee, Chan Lee, and Gyeong–Hoi Koo(KAERI), Hyoungsuk Yu(KAIST)

13:50 Improvements of First and Total Dry-out Models for the Helical Coiled SGs
Yujeong Ko and Hyoung Kyu Cho(SNU)

14:10 Pressure Loss Prediction during Sudden Expansion using Artificial Neural Network
Jong Hui Lee, Cheong Bong Chang, Youngmin Bae, and Seongyeob Ryu(KAERI), Gyeongseop Lee(SNU), Seong Bae Pak(TAESUNG Software and Engineering Inc.), Jin Ho Oh(Kyungpook National Univ.)

14:30 Coffee Break

14:50 Development of a FLUENT-Based Thermal-Hydraulic Analysis Code Framework for Steam Generators using pyAnsys
Bumjin Cho, Jinsu Kim, and Minseop Song(HYU), Giwon Bae and Hyoungkyu Cho(SNU)

15:10 Preliminary CFD Benchmarking of L-DeepONet for Nuclear Reactor Digital Twin
Minseo Lee, Sangam Khanal, Shilaj Baral, and Joongoo Jeon(Jeonbuk National Univ.), Minseop Song and Chaehyeon Song(HYU)

15:30 RePIT-v1.0: A Software for Hybrid ML-CFD Computation
Shilaj Baral, Sangam Khanal, and Joongoo Jeon(Jeonbuk National Univ.), Youngkyu Lee and George Em Karniadakis(Brown Univ.)

5E 5.23.(금)

안전해석 현안 (Safety Analysis Issues)

| 좌장 강동구(Kang, Dong Gu), 전성수(Jeon, Seong–su) | 301

09:00 Recent OECD/NEA Activities in EGSMR (Expert Group on Small Modular Reactor) and CCVM (CSNI Code Validation Matrix) for the Safety of Small Modular Reactors
Hyun–Sik Park(KAERI)

09:20 Preliminary Validation of Radiation Model Comparison for Radiative Heat Transfer Analysis in MHTGR RCCS
Je–Hyeong Park and Jae–Ho Jeong(CAU), Sin–Yeob Kim(KAERI)

09:40 MARS-KS Analysis of Low Pressure Low Flow Critical Heat Flux Based on Annulus and Round-Tube Experimental Data
Nhan Hien Hoang, Seong–Su Jeon, and Jehee Lee(FNC Tech.), Ju–Yeop Park(KINS)

10:00 Development of a Preliminary Numerical Analysis Methodology for Predicting Natural Circulation Cooling Performance Based on NSTF Experiments
Nahid Hasan and Jophous Mugabi(Gachon Univ.), JaeHo Jeong(CAU), SinYeob Kim(KAERI)

10:20 Audit Calculation for the Burnup Effect on OPR1000 LBLOCA Analysis
Jang Keun Park, Byung Gil Huh, and Joosuk Lee(KINS)

10:40 Coffee Break

11:00 Assessment of Conservative Core Conditions for LBLOCA in APR1400 using TRACE Code
Hyungjoo Seo and Byung Gil Huh(KINS)

11:20 Review of the Performance Features of Containment Evacuation System in Integral Pressurized Water Reactor
Soon–Joon HONG, HyeonMin SEO, Jan HRUSKOVIC, and Bud–dong CHUNG(FNC Tech.)

11:40 Development of 2D (r-θ) Heat Conduction Model for Fuel Rod in FAMILY
Joosuk Lee, Seulbeen Kim, and Jang Keun Park(KINS)

5F 5.23.(금) 열수력 신기술 (Advanced Thermal Hydraulics)

| 좌장 손성민(Son, Seongmin), 송문원(Song, Moon Won) | 302

09:00 Effects of Group Constant Model on Multi-physics Analysis of Fast-spectrum Molten Salt Reactor with Beryllium Oxide Reflector
Wooseong Park and Yong Hoon Jeong(KAIST)

09:20 Parametric Effects of Helical Coil Heat Exchanger Design on Thermal-Hydraulic Performance of Passive Molten Salt Fast Reactor
Seungmin Lee, Dowon Lee, Juhyeong Lee, and Sung Joong Kim(HYU)

09:40 Melting Points Comparison of Chloride Salts for Coolant of Molten Salt Fast Reactor
Sunghyun Yoo and Jeong Ik Lee(KAIST)

10:00 Design of the Heat Exchanger for Passive Molten Salt Fast Reactor using GAMMA+
Dowon Lee, Juhyeong Lee, Seungmin Lee, Jihun Im, JinHo Song, and Sung Joong Kim(HYU)

10:20 Considerations for Performance Parameters in Design of Passive ECCS Valves through Dynamic Response Analysis
Young Seok Bang, Youngjae Park, You Cho Choi, Seong–Su Jeon, and Soon–Joon Hong(FNC Tech.)

10:40 Investigation of Freeze Valve Release Models Applicable for Molten Salt Reactor by OpenFOAM Code
Juhyeong Lee, Ye Hwan Chun, and Sung Joong Kim(HYU)

5G 5.22.(목) – 23.(금) 원자력 열수력 실험 (Thermal Hydraulic Experiment) – POSTER

| 좌장 정준영(Jung, Jun Yeong), 김경모(Kim, Kyung Mo) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO5G01 Integral Effect Test on a Loss of Safety Injection Accompanied by a Small Break Loss of Coolant Accident based on the Risk/Performance Information
Yusun Park, Byoung Uhn Bae, Jae Bong Lee, Jun Yeong Jung, Jongrok Kim, Seok Cho,
and Kyoung Ho Kang(KAERI), Jea Beol Hong and Hyun Bin Chang(FNC Tech.)

PO5G02 Experimental Study on Head Degradation in a Reactor Coolant Pump for a Small Modular Reactor under Two-Phase Flow Conditions
Byeonggeon Bae, Tae–Kyoon Kim, Hyuntae Lim, and Jihoon Lee(KAERI)

PO5G03 Preliminary Testing of the Flow Loop in a High-Pressure Flow Boiling Test facility for a PWR Subchannel
Chanmin Jeong, Banseok Bae, Ahyeong Cho, Jongwhi Choi, and Hyungdae Kim(KHU)

PO5G04 Thermal Analysis of Micro-pillar Structures under Pool Boiling Conditions using Optical Fiber Sensors
Minkyu Park, Hyeon Taek Nam, Seungro Lee, and Donghwi Lee(Jeonbuk National Univ.)

PO5G05 Experimental Investigation of Heat Transfer Characteristics of Multiple Heat Pipe with Inclination
Myung Jin Jeong, Ye Sung Kim, and Hyoung Kyu Cho(SNU)

PO5G06 Coupled Analysis of High-Resolution Localized Temperature Measurement Using an Optical Fiber Sensor and Bubble Dynamics in Pool Boiling
Seoyeon Park, Hyeonmin Choi, and Hyungmo Kim(Gyeongsang National Univ.), Dong Eok Kim(CAU)

PO5G07 Functional Qualification of Active Valve used in Ki-Jang Research Reactor
Hyunwoo Lee, Dayong Kim, Inguk Kim, and Kyungwoo Seo(KAERI)

5H 열수력해석 (Thermal Hydraulic Analysis) – POSTER

5.22.(목) – 23.(금)

| 좌장 이연건(Lee, Yeon–Gun), 서한(Seo, Han) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO5H01 GAMMA+ Simulation for Pre-conceptual MSR Emergency Shutdown
Seung Hyun Yoon, Nam–il Tak, and Hong Sik Lim(KAERI)

PO5H02 Numerical Modeling for Subcooled Flow Boiling Condition in a High Void Fraction Regime
Iljin Kim(KAERI), In–Yeop Kang, Gubin Lee, and Hyungdae Kim(KHU)

PO5H03 Comparison of RANS-Based and LES Turbulence Models for Core Flow Analysis in a 1/5 Scale APR1000 Model
Uiju Jeong, Gilim Kim, Juyeon Lee, Nuri Oh, and Sin Jung Chang(KHNP)

PO5H04 Preliminary Investigation of Pressure Similarity in the i-SMR Steam Generator Using CFD
Dae Kyung Choi and Choengryul Choi(Elsoltec), Woo–Shik Kim and Tae–Soon Kwon(KAERI), Kyu–Hyung Kim and Do–Young Ko(KHNP)

PO5H05 Simulation of the K-MSR Fuel Drain System Using MARS and GAMMA+ : Comparison with Scaled Experiments
Woonho Jeong, Sangjin Kim, Seul Bin Park and Ji Hwan Kim(HDEC)

PO5H06 Comparison of MARS-KS and SPACE in Predicting Density Wave Oscillation (DWO) Onset Under Different Mass Flux Conditions
Jun Ha Hwang, Taeyeon Min, Semin Joo, Doh Hyeon Kim, and Jeong Ik Lee(KAIST)

PO5H07 Preliminary Investigation on the Primary Side Temperature Control with Secondary Side Thermal Hydraulic Control in PWR based SMR
Gyudong Kim and Jeong Ik Lee(KAIST)

PO5H08 Considering the Effects of Reverse Flow in Evaluating Chimney Effects in External Containment Vessels Using MARS-KS and CAP Codes
Minseok Choi, Kum–Ho Han, Bub–Dong Chung, and Soon–Joon Hong(FNC Tech.)

PO5H09 Modeling Heat Transfer in Helically Coiled Steam Generators Using Different Correlations
Hyochan Kim, Jun Ha Hwang, and Jeong Ik Lee(KAIST)

PO5H10 CFD Analysis of Core Flow Distribution in the APR1000 Reactor and Experimental Validation
Dae Kyung Choi, Sung Man Son, Won Man Park, and Choengryul Choi(Elsoltec), Uiju Jeong(KHNP), Ki–Hwan Kim and Dong–Jin Euh(KAERI)

PO5H11 Rough Calculation of Heat Loss on Passive Safety System
Seong–su Jeon, Jehee Lee, Youngjae Park, and Jungjin Bang(FNC Tech.)

PO5H12 Preliminary Investigation of Density Wave Oscillation in Boiling Channel using Frequency-Domain Analysis
Haeram Jeong, Eunhee Jang, Chanmin Jeong, Yohan Kim, and Hyungdae Kim(KHU)

PO5H13 Development of Primary-Secondary System Integrated MARS-KS Input Model for V-SMR
Jehee Lee, Jungjin Bang, and Bub Dong Chung(FNC Tech.)

PO5H14 CFD Analysis for the Effect of Upstream Elbow Flow Disturbance on the Hydraulic Characteristics of the Butterfly Valve; Depending on the Configuration of the Valve Disc Arrangement
Gong Hee Lee and Seon Ho Choi(KINS)

PO5H15 GPU-based Parallelization of the CUPID Code: The Strategy and Preliminary Results
Ik Kyu Park, So–Hyun Park, and Il Jin Kim(KAERI)

5I 열수력해석 / 안전해석 현안 (Thermal Hydraulic Analysis / Safety Analysis Issues) – POSTER

5.22.(목) – 23.(금)

| 좌장 김재순(Kim, Jae Soon), 임도균(Lim, Do Kyun) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO5I01 ATWS Analysis for Kori Unit 2
BUMSOO YOUN, CHANGKEUN YANG, and DONGHYUK LEE(KHNP), CHANGYEON YOO and YEONGUK JO(KEPCO NF)

PO5I02 Evaluation of the Effect of Two-Phase Correction Factors on Pressure Drop Prediction in Helical Coils
Jan Hruskovic, Dong–Young Lee, Jungjin Bang, Youngjae Park, and Seong–Su Jeon(FNC Tech.)

PO5I03 Pressure Drop Modeling for Helical Tubes in SPACE
Kwi Seok Ha and Jong–Hyuk Lee(KAERI)

PO5I04 Improvement of Heat Transfer Model of SPACE Code for Heat Exchanger Tube in LAPLACE Test Facility
Hae Min Park and Jong Hyuk Lee(KAERI)

PO5I05 Preliminary Assessment of SPACE Code for DWO in Helical Coils
Dong–Young Lee, YoungJae Park, Jungjin Bang, Jan Hruskovic, and Seong–Su Jeon(FNC Tech.)

PO5I06 Thermal-Hydraulics Characteristics Change of OPR1000 Steam Generator Depending on Inlet Feedwater Flow Rate Ratio
Seung–Jae Kim(KHNP)

PO5I07 Development of a Balance-of-Plant System Simulation Model for Small Modular Reactors Using OpenModelica
Jungjin Bang, BubDong Chung, Jehee Lee, and Seong–Su Jeon(FNC Tech.)

PO5I08 Transient Analysis of Loss of Coolant Accident in KJRR
Dongwook Jang and Jong–Pil PARK(KAERI)

PO5I09 Validation of SPACE Code for Condensation Heat Transfer of High-Pressure Pure Steam on Tube Outer Surface
Chang Won Lee, Jong Hyuk Lee, and Seung Wook Lee(KAERI)

PO5I10 Verification and Validation of NRC CHF Database & Lookup Table: OECD/NEA Benchmark on CHF AI & ML Phase I
Juhyung Lee, D. H. Hwang, K. W. Seo, H. Kwon, S. J. Kim, H. Seo, and M. Lee(KAERI), K. M. Kim(KENTECH)

P05I11 Numerical Analysis of Cl-based Molten Salt Spreading and Heat Transfer using CFD-code
Ye Hwan Chun, Jae Min Han, In Han Kang, Jinho Song, and Sung Joong Kim(HYU), Sang Mo An and Sung–Il Kim(KAERI)

P05I12 Sensitivity Analysis of Initial Flow Rate for Startup of Inactive Reactor Coolant Pumps in SMR with Natural Circulation
Jaejin Lee, Doyoung Shin, Joonsoo Park, and Chi–Jin Choi(KAERI)

P05I13 Preliminary Analysis of iSMR Fuel for Regulatory Audit Preparation
Ilsuk Lee, Taehoon Kim, Hyungjoo Seo, Sangmin Park, Yeyeong Park, and Joosuk Lee(KINS)

P05I14 Investigation of Inclination Effect on the Performance of Passive Residual Heat Removal System in a Floating Reactor during SBO Analysis using MARS-KS
Eunji Lee and Hyoung Kyu Cho(SNU), Seong–Su Jeon(FNC Tech.)

5J 5.22.(목) – 23.(금)

열수력해석 / 열수력 신기술 (Thermal Hydraulic Analysis / Advanced Thermal Hydraulics) – POSTER

| 좌장 송민섭(Song, Min Seop), 전준구(Jeon, Joongoo) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

P05J01 Review of Comparison of Heat Transfer and Pressure Drop between OTHSG and PCHE
Sinyoung Park and Taeseok Kim(Jeju National Univ.)

P05J02 Two-phase flow Analysis Using GAMMA+ and Comparison with the Adiabatic Two-Phase Experiment
Won Jun Choi, Jae Hyung Park, JinHo Song, and Sung Joong Kim(HYU)

P05J03 Predictability Evaluation of Korea Thermal Hydraulic Safety Analysis Codes for Multiple SGTR-PAFS Test with ATLAS Experimental Facility
Hyunjoon Jeong and Kyungho Nam(KHNP)

P05J04 Simulation of the Thermal Energy Storage System (TES) in Hybrid Energy System
Gi Tae Kim, Ha Neul Na, Keon Yeop Kim, So Eun Shin, and Youngsuk Bang(FNC Tech.)

P05J05 Study on the Application of Bayonet Tube Steam Generators to Molten Salt Reactors
Doh Hyeon Kim and Jeong Ik Lee(KAIST), Per F. Peterson(University of California)

P05J06 Wall boiling model and wall condensation model for natural circulation simulation
Quoc Tuan Le and Byoung Jae Kim(Chungnam National Univ.)

P05J07 Numerical Analysis of Flow Characteristics in Large Diameter Helical Coils with Constant Pitch
Janghun Han, Sangoh Shin, and Minseop Song(HYU)

P05J08 Analysis of Temperature Distribution of Graphite in HTGR Due to Radiation-Induced Variation of Thermal Conductivity
Yonghyeon Na, Younchan Kim, and Jee Hyun Sung(KAIST)

P05J09 Development of Simulation Code for Safety Verification of Heat Pipe Cooled Reactor
Seojun Park and Kyung Mo Kim(KENTECH)

P05J10 Preliminary Study on the Effects of Steam Extraction on the BOP Systems in i-SMR
Hyeon–Min SEO, Jungjin BANG, BubDong CHUNG, and Jehee Lee(FNC Tech.)

P05J11 Review of Research on Direct Air Capture – Nuclear Sector Coupling
Taejun Song and Seongmin Son(Kyungpook National Univ.)

P05J12 Meta-learning Enhanced PINN for Steady-state Incompressible Laminar Flow Analysis
JAEJUN LEE, SOYEON KIM, YONGGYUN YU, and HOGEON SEO(UST|KAERI)

P05J13 Thermodynamic Analysis of Hydrogen Production using PWR-based SMRs
Changmin Yoon, Jeong Ik Lee, and Yongjae Chae(KAIST)

P05J14 Conceptual Design of Density Lock-based Molten Salt Drain for Replacement of the Freeze Plug
Sewook Hwang and Kyung Mo Kim(KENTECH)

제6분과

원자력 안전
(Nuclear Safety)

6A
5.22.(목)

확률론적 안전성평가 1 (PSA 1)

| 좌장 조재현(Cho, Jaehyun), 김동산(Kim, Dong–San) | 201A

09:00 Comparison and Validation of MPAS Level 2 PSA Model with Operator's Level 2 PSA Model: A Regulatory Perspective
Hyun–bin Chang, Gyeongyeol Kim, Suwon Lee, Jung Hyun Ryu, and Gunhyo Jung(FNC Tech.)

09:20 Multi-unit Seismic Risk Quantification using Partial Binary Decision Diagram
Jae Young Yoon and Sang Hoon Han(KAERI)

09:40 Dynamic PSA-Based Multi-unit Accident Scenario Modelling Approach
Sang Hoon HAN, Hyeonmin KIM, and DongSan KIM(KAERI)

10:00 Development of a MAAP5 Metamodel for Use in Dynamic PSA
Hyeonmin Kim, Sang Hoon Han, and Dong–San Kim(KAERI)

10:20 Sampling Based Method for Estimating Functional Failure Probability of Passive Safety Systems in Small Modular Reactors
Yongjoon Lee and Gyunyoung Heo(KHU)

10:40 Coffee Break

11:00 Proposal to Modify Types of the Unsafe Control Actions in the STPA for the Detailed Sub-task Analysis of the Human Reliability Analysis
Seong Woo Kang, Jaewhan Kim, Jinkyun Park, Sung–Min Shin, and Ho–Gon Lim(KAERI)

11:20 Review of Failure Modes and Effects of IAB Valves in NuScale
Donghwan Choi, Eunhee Jang, Hyungdae Kim, and Gyunyoung Heo(KHU)

11:40 The CAFTA Conversion Methodology from SAREX PSA Model
Jae Gab Kim, Myung Ro Kim, Jeong Guk Song, and Sang Ho Kang(KEPCO E&C), Ji Yong Oh(KHNP)

12:00 Probabilistic Safety Assessment of Wildfire Risks to the Off-site Power System Connected to the Kori Nuclear Power
Yeonwoo Choi and Seunghyun Eem(Kyungpook National Univ.), Shinyoung Kwag(Hanbat National Univ.)

6B
5.22.(목)

중대사고 1 (Severe Accident 1)

| 좌장 신상우(Shin, Sangwoo), 이병희(Lee, Byeonghee) | 201B

09:00 Uncertainty Analysis of Source Term for OPR1000 Station Blackout Accident
Yong Jin CHO, Kukhee LIM, Eunho KIM, and Dongju CHANG(KINS)

09:20 Uncertainty and Sensitivity Analysis of Source Term Evaluation Using MELCOR 2.2 Based on Benchmarking with the PHEBUS FPT-1 Experiment
Han Sol Park and Yeon–Gun Lee(Sejong Univ.)

09:40 Uncertainty Analysis on Fission Product Release Fractions in the SIRIUS Module of the CINEMA Code Based on Correlation Analysis
Yongjun Lee, Okhyeon Lee, Yujin Kim, JinHo Song, JoonEon Yang, and Sung Joong Kim(HYU)

10:00	Study on the Impacts of Adverse Effects in SAMG focused on the Hydrogen Concerns Mi Ro Seo, Jung Min Shin, and Ji Eun Oh(KHNP), Su Won Lee and Myeong Kwan Seo(FNC Tech.)
10:20	Preliminary Analysis of Investigation on i-SMR Station Blackout Scenario Using Severe Accident System Code Se Hee Kwon, Chang Hyun Song, Cheolwoong Kim, Yujin Kim, Jinho Song, and Sung Joong Kim(HYU), Sang Ho Kim, Jaehyun Ham, and Seokgyu Jeong(KAERI)
10:40	Coffee Break
11:00	Uncertainty Study of RPV Failure and Operation Actions in an MBLOCA Scenario of the OPR1000 Tae-woo Kim, Sangwoo Shin, and Miro Seo(KHNP)
11:20	MCCI Analysis using Shape Model Implemented in MAAP 5.06 Code for WH-2Loop SANGWOO SHIN, MIRO SEO, TAEYOUNG SHIN, TAEWOO KIM, and SUN HEO(KHNP)
11:40	Assessment of CINEMA Code with PBF-SFD Experiment Jun-young Kang, Jun Ho Bae, Donggun Son, Jae Hyun Ham, and Sang Ho Kim(KAERI)
12:00	Structural Behaviour of 1:4 Scale PCCV under High Temperature and Pressure with Concrete Postulated Voids Ho-Young Son, Sangwoo Lee, Yu-Gyeong Jung, and Bu-Seog Ju(KHU)

6C 5.22.(목) 안전현안 (Safety Issues)

| 좌장 최종수 (Choi, Jongsoo) | 201A

13:30	Analysis of Risk-Informed Safety Classification for Structures, Systems, and Components of LWRs and Non-LWRs Geon Kim, Dayeong Jung, Taejoong Kim, and Gyunyoung Heo(KHU)
13:50	Risk Profile Development of Accident Sequences using Source Term Release-to-Consequence Correlation Yunho Kim and Jaehyun Cho(CAU)
14:10	Accident Impact Assessments of MCR, EAB and LPZ for Recirculation Pipe Leakage Model in LOCA Condition Seung-Chan LEE, Kyungho Nam, and Yerim Park(KHNP)

6D 5.22.(목) 화재방호 (Fire Safety in Nuclear Facility)

| 좌장 강대일 (Kang, Dae Il), 정용훈 (Jung, Yong Hun) | 201B

13:30	Numerical Analysis of the Effect of a Hypothetical Fire in a Cable Spreading Room on the Release of Radioactive Materials Jaiho Lee and Young Seob Moon(KINS)
13:50	Review and Application of Updated Methods for Fire Detection and Suppression Analysis in Fire PSA Yong Hun Jung, Kyungho Jin, and Dae Il Kang(KAERI)
14:10	A Study on the Bayesian Approach to the Conditional Probability of Oil Fire Severities in Fire Probabilistic Safety Assessment Kyungho Jin and Yong Hun Jung(KAERI)
14:30	Coffee Break
14:50	Development of Quantitative Analysis Technology for Fire-Induced Multiple Spurious Operation Scenarios and Its Application to Domestic Nuclear Power Plant Dae Il Kang, Sun Yeong Choi, and Yong Hun Jung(KAERI)

15:10 Application of the Diagnosis Error Probability Formula Considering Shift Technical Advisor's Absence in Fire Events
Sun Yeong Choi, Dai Il Kang, and Yong Hun Jung(KAERI)

6E 5.23.(금) 확률론적 안전성평가 2 (PSA 2)

| 좌장 김만철 (Kim, Man Cheol), 김성엽 (Kim, Sung–yeop) | 201A

09:00 Effectiveness of MACST in the Extended Loss of AC Power Scenario of the OPR-1000
Jemo Ryu and Jaehyun Cho(CAU)

09:20 Quantum Hybrid Reinforcement Learning for Optimal Variable Ordering in Binary Decision Diagrams
Young Ho Chae and Seo Ryong Koo(KAERI)

09:40 Uncertainty Quantification Framework for Systematic Source Term Assessment
Seunghyeon Hwang and Jaehyun Cho(CAU)

10:00 Streamlined Simulation Framework with Optimized and Accelerated Simulation using Intermediate State Storage
Kyeong Seo Kim, Junyong Bae, Wooseok Jo, and Seung Jun Lee(UNIST)

10:20 Development of a Clustering Methodology for Deriving Representative Accident Scenarios Using Advanced Time Dynamic Warping Algorithm
Hyeonho Byun and Hyeonmin Kim(KAERI)

10:40 Coffee Break

11:00 The Impact Analysis of Various Spatial Grid Settings on Offsite Consequence Analysis
Seunghwan Kim and Sung–yeop Kim(KAERI)

11:20 A Study on the Use of a New Risk Metric for TI-RIPB Safety Classification
Kilyoo Kim, Sunghwan Kim, and Jaeyoung Choi(BEES)

11:40 Considering Variability in Battery Depletion Time for Conditional Core Damage Probability Calculation
Younghak Lee and Man Cheol Kim(CAU)

12:00 A Comparative Analysis of Dynamic and Conventional PSA Methods with Unified Success Criteria and Key Insights
Donghee Choi and Man Cheol Kim(CAU)

6F 5.23.(금) 중대사고 2 (Severe Accident 2)

| 좌장 김종태 (Kim, Jongtae), 임국희 (Lim, Kukhee) | 201B

09:00 Modeling of Hydrogen and Carbon Monoxide Recombination by a Passive Autocatalytic Recombiner for Nuclear Reactor Containment Safety
Jongtae Kim(KAERI)

09:20 Machine Learning-Based Prediction of Hydrogen Concentration in a Passive Autocatalytic Recombiner
Won Jun Kim, Nguyen Duc Hay, and Sung Goon Park(SEOULTEC), Jae Hoon Jeong(KAERI)

09:40 Fully Lagrangian Approach of Three-Phase Systems for Debris Bed Formation (Part I: DAVINCI Experiment)
YoungWoo Son, InSoo Seo, and Cheol–O Ahn(Metariver Tech.)

10:00	Fully Lagrangian Approach of Three-Phase Systems for Debris Bed Formation (Part II: Effect of Sphericity) YoungWoo Son, InSoo Seo, and Cheol-O Ahn(Metariver Tech.)
10:20	Physics-Informed Neural Network-Based Severe Accident Analysis Code: A Preliminary Assessment Jeesuk Shin, Minseo Lee, and Joongoo Jeon(Jeonbuk National Univ.), Cheolwoong Kim(HYU), Sunwoong Yang(KAIST)
10:40	Coffee Break
11:00	Physics-Informed Neural-Network Replacement of the Heat-Conduction Solver in MELCOR Joon Young Bae, JinHo Song, and Sung Joong Kim(HYU)
11:20	Suppression of Steam Explosion Using Dilute Hydrogel Aqueous Solutions Seok Ju Jeong and Byeong Woo Lee(Korea Maritime and Ocean Univ.), Kwang-Hyun Bang(TETRAS Co.)
11:40	Thermal-Structural Analysis of LAVA-4 Reactor Vessel Lower Head under In-Vessel Gap Cooling Condition Moon Won Song(Jeonbuk National Univ.)

6G 5.22.(목) – 23.(금)

확률론적 안전성평가/안전현안/화재방호(PSA/Safety Issues/Fire Safety in Nuclear Facility) –POSTER

| 좌장 이승준(Lee, Seung Jun), 윤재영(Yoon, Jae Young) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

P06G01	Consideration on Project Management for Performing Design Phase PSA Sunghyun Park, Sejin Baek, and Horim Moon(KHNP)
P06G02	An Approach Based on Deep Learning for Estimating Accident Consequences of Radioactive Material Releases in Severe Accident Scenarios Jiyeong Seo and Jaehyun Cho(CAU), Kyungho Jin and Sung-yeop Kim(KAERI)
P06G03	Review of the Impact on Power Plants based on Accident Scenarios Caused by Typhoon-Induced Extreme Natural Hazard Seunghyun Jang and Daegi Hahm(KAERI)
P06G04	Regulatory Review of Light Water SMR Coping Capability for Station Blackout Yongsun Choi and Jaehyun Cho(CAU)
P06G05	A Risk Profile from Level 1/2/3 PSA for HANARO Research Reactor Seung-Cheol Jang(KAERI)
P06G06	Application of PSA to Research Reactors Using a Graded Approach SEOLSONGHWA SONG and JAEHYUN CHO(CAU)
P06G07	Time Margin Analysis of Feed-and-Bleed Operation in OPR-1000 and APR-1400 Using MARS Code Gangmin Kim, Changhyun Jang, and Jaehyun Cho(CAU), Jaewhan Kim(KAERI)
P06G08	Investigation of Vibration Wear of the Steam Generator Tube Bundles for OPR 1000 Nuclear Power Plant Choengryul Choi, Wom Man Park, Dae Kyung Choi, Young Min Byun, and Min Soo Kim(Elsoltec), Young-Jin Oh, Heejae Shin, and Sang-Hoon Lee(KEPCO E&C)
P06G09	Investigating Natural Disaster Cases due to Climate Change and Potential Risks to Nuclear Power Plants Dongchang Kim and Seunghyun Eem(Kyungpook National Univ.), Shinyoung Kwag(Hanbat National Univ.), Raeyoung Jung(KINS)

PO6G10 Methodology for Estimating Mass of Flammable Hydrogen in Leakage Accidents Based on Atmospheric Stability
Younghun Shin, Inchul Ryu, and Kiljung Kim(KEPCO E&C)

PO6G11 Fire Prevention Measures for Facilities using Nuclear Fuel Materials and Hydrogen
Heesoo Kim and Boung kuk Jong(KFE), Sungill Lee(Korea National Univ. of Transportation)

6H 5.22.(목) – 23.(금)

중대사고 (Severe Accident) –POSTER

| 좌장 홍성완(Hong, Seong–Wan), 김병조(Kim, Byung Jo) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO6H01 Preliminary Analysis on IVR-ERVC for i-SMR using CINEMA Computer Code
Rae–Joon Park, Seokgyu Jeong, Jaehyun Ham, Donggun Son, and Sang Ho Kim(KAERI)

PO6H02 Preliminary Analysis on Spreading Distance of Spill Molten Salt as Salt Composition using ANSYS-Fluent
Rae–Joon Park, Sang Mo An, Jun Ho Bae, and SungIl Kim(KAERI)

PO6H03 Analysis of Steam Explosion in Advanced SMRs
Seong–Wan HONG and Sang Ho KIM(KAERI)

PO6H04 Validation of MAAP 5.06 API Model with MARS/KS2.0 and Numerical 2-Fluid Model
Yongju Cho, Daehyung Lee, and Chungwon Seo(KEPCO E&C)

PO6H05 Analysis on Effectiveness of Methods for Fission Product Release Control in Containment
Hee–soo Kim and Mi–ro Seo(KHNP), Hyung–ki Kim and Yu–Hyeon Lee(KEPCO E&C)

PO6H06 Evaluation of Multi-Input Single-Output ANN Models for Thermal-Hydraulic Predictions in Nuclear Severe Accidents: Branched vs. Non-Branched Structures
Seok Ho Song, Semin Joo, Yeonha Lee, and Jeong Ik Lee(KAIST), Mi Ro Seo(KHNP)

PO6H07 Experiments of Aerosol Behavior in Containment with Containment Spray
Byeonghee Lee and Kwang Soon Ha(KAERI)

PO6H08 Optimizing Downsampling Strategies for AI-Based Surrogate Models in Severe Accident Prediction
Taeyeon Min, Semin Joo, Seok Ho Song, and Jeong Ik Lee(KAIST), Mi Ro Seo(KHNP)

PO6H09 Current Status of SIRIUS Code Development
Jaehyun Ham and Kwang–Soon Ha(KAERI)

PO6H10 Three-dimensional Numerical Simulation for the Molten Salt Spreading Behavior on a Flat Plate
JUN HO BAE and SUNG IL KIM(KAERI), HYUN SEOK JANG and IL SEOK PARK(Kyungpook National Univ.)

PO6H11 Shakedown Test of Molten Salt Spill and Spreading on a Flat Channel
Sang Mo An, Jun–young Kang, Keun Sang Choi, and Sung Il Kim(KAERI)

PO6H12 Introduction to the Development of an Automated Verification and Validation System for the CINEMA
Doohyuk Kang and Minjae Lee(SENTECH), Hee–soo Kim and Taewoo Kim(KHNP)

PO6H13 Evaluation on the Effectiveness of the Strategies for Depressurizing Reactor Coolant Systems
JIEUN OH and MIRO SEO(KHNP), YUHYEON LEE and HYUNGKI KIM(KEPCO E&C)

PO6H14 Assessment of the CINEMA Code Prediction of the QUENCH-06 Experiment
Hyoung Tae Kim and Sang Ho Kim(KAERI)

PO6H15 Application of Directional Thermal Conductivity to the Melt Region of the Reactor Lower Head during a Severe Accident
Kukhee Lim, Yong Jin Cho, Eunho Kim, and Dongju Jang(KINS)

PO6H16 Comparison of Regulatory Methodologies and Cases for SMR Combustible Gas Control: NuScale SMR vs SMART100
Wonung Jeong, Sihyeong Yu, Dosu Park, and Joongoo Jeon(Jeonbuk National Univ.),
Jinwoo Kim and Eungsoo Kim(SNU)

PO6H17 Comparative Investigation for Uncertainty Analysis on LOCA of i-SMR
Cheolwoong Kim, HyoJun An, Yujin Kim, JinHo Song, Joon Eon Yang, and Sung Joong Kim(HYU),
Sang Ho Kim, Jaehyun Ham, and Seokgyu Jeong(KAERI)

제7분과

방사선 방호 (Radiation Protection)

7A 5.22.(목)

방사선 방호 (Radiation Protection)

| 좌장 김경오(Kim, Kyung-O), 김정인(Kim, Jeongin) | 303B

09:00	Analysis of Neutron and Photon Dose Rate Reduction in i-SMR with Enhanced Radiation Shielding Structures Using ADVANTG and MCNP6 Hyun chul Roh, Minki Kim, Chang Ho Shin, and Ser gi Hong(HYU)
09:20	Methodology for Establishing Radiation Protection Goals for Nuclear-Powered Ships: Radiation Target Levels Study Hyoeun LEE and Jaehyun CHO(CAU), Changseop Kwon(KRISO)
09:40	Monte Carlo Shielding Simulation for a Cylindrical Well Storage Containing Irradiated Stainless Steel Capsules Jati Eka Putri and Juyoul Kim(KINGS)
10:00	Measurement and Analysis of Radon Exhalation Rates from Soil and Concrete Samples With Two-layer Structure Yeong Joon Cho and Sang Hoon Lee(Kyungpook National Univ.), Mi Yeong Lee(RSRI)
10:20	Environmental Radiation Monitoring Using a GM Network with AI-Based Anomaly Detection and Source Tracking Jaehyeon Seo and Jong-Myoung Lim(KAERI), Suyeon Hyeon and Min Sun Lee(UST|KAERI)
10:40	Coffee Break
11:00	Study on the H-3 and C-14 Determination for the Environmental Sediment Samples with Combustion Method Haeri Kim, Dayoung Kam, Heyhyun Kim, and Jongmyoung Lim(KAERI)
11:20	Evacuation Study with On-site Response Action Manual Using PRISM Dayeong Jung, Minho Hwang, Geon Kim, and Gyunyoung Heo(KHU), Janghee Lee(Busan City Hall)
11:40	Predicting Cellular Response to Ionizing Radiation Using Machine Learning: Random Forest and Feed-Forward Neural Network Models ALI Abu Shqair, DongSeok Lee, and EunHee Kim(SNU)

7B 5.22.(목) – 23.(금)

방사선 방호 (Radiation Protection) – POSTER

| 좌장 박지성(Park, Ji Sung), 유재룡(Yoo, Jaeryong) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO7B01	Calculation of Dose Coefficient for Estimating Organ Doses in Korean Radiation Workers Byung Min Lee, Jae Seok Kim, and Min Seok Park(KIRAMS)
PO7B02	Improvement of Radiation Safety for Radioisotopes Production Facility Dong-In Lee, Yi-Sub Min, Jeong-Min Park, and Ye-Eun Lee(KAERI(KOMAC))
PO7B03	Identification of Irradiated Fish jerky by EPR Spectroscopy HyoJin Kim, Yong UK Kye, and Yeong-Rok Kang(DIRAMS)

PO7B04 Surface Dose Rate Analysis of Radioisope Transport Devices for Reducing Radiation Exposure
Sungsoo Nam, Eunha Cho, Kihwan Park, and Taegil Lee(KAERI)

PO7B05 Review on the Designation of Radiation-Controlled Area in Nuclear Facilities
Hyojik Lee, Insu Chang, Woojin Jo, Siwan Noh, Sang–Jin Park, and Jonghui Han(KAERI)

PO7B06 Investigation of Mechanical Strength and Gamma Shielding Performance for Materials
BeomKyu Kim, YeongHo Son, and JaeSeon Cho(FNC Tech.)

PO7B07 Review of Micro-Reactor shielding: Addressing Transportability and Lightweighting Challenges
Jinsun Choi and JeongIk Lee(KAIST)

PO7B08 A Study on the Deriving Methodologies for Optimizing Worker Exposure in Radioactive Waste Disposal Facilities
DoWon Hyun, SangHeon Lee, WooBeom Ha, and JongSoon Song(CSU)

PO7B09 Measurement and Analysis of Carbon-14 Concentration in the Air
Jeong Min Park, Yi Sub Min, and Ye Eun Lee(KAERI(KOMAC)),
Sang Hoon Lee and Min Ju Kim(Kyungpook National Univ.)

PO7B10 Studies on the Behavior of Particles in Relation to Humans and the Deposition of Suspended Radioactive Substances in the Atmosphere
yunjong Lee(KAERI(ARTI))

PO7B11 Study of Indoor Radioactive Material Paths from Accidenrs
Yunjong Lee(KAERI(ARTI))

PO7B12 Calculation of Thyroid Equivalent Dose Conversion Factor for Surface Contamination Monitor in Radiation Emergency Response
kihoon KIM, MinSeok Park, and Minsu Cho(KIRAMS)

PO7B13 Comparative Evaluation of Atmospheric Dispersion Models for Beyond Design Basis Accidents at the GA. Siwabessy Multi-Purpose Reactor in Indonesia
Arya Pramana Sembiring and Juyoul Kim(KINGS)

PO7B14 Development of AI-Driven Korean-Language Rumor Detection Model for Radiological Emergencies
INYOUNG JEON(KINS)

PO7B15 Performance Evaluation of Wireless Communication for Aerial Radiation Detection Using a Multi-Channel Detector Mounted on a Drone
Sanghun Shin, Heekwon Ku, Minbeon Heo, and Jaewook Kim(FNC Tech.),
Hyunjin Boo and Byunggi Park(SoonChunHyang Univ.)

PO7B16 Review of National Policy Regarding Implementation of Iodine Thyroid Blocking in Nuclear Emergency
Jia Hao Tang(SNRSI|UST|KAERI), Sung–yeop Kim(UST|KAERI)

PO7B17 Development of VR Situation Room Operating Training Content for Radiation Emergency Medicine
Hyungwoo Nam, Kihoon Kim, and Minsu Cho(KIRAMS)

PO7B18 Optimal Selection of Evacuation Shelters and Routes Using TOPSIS and a Road Evacuation System in Radiological Disasters
Sangyun Lee, Hanyoung Joo, Chaehyun Lee, and Joohyun Moon(Dankook Univ.)

PO7B19 Risk Comparison between Occupational and Military Radiation Dose Limits Standards
Wooseok Choi and Jeongik Lee(KAIST)

PO7B20 Feature Importance Analysis of Ion Beam Exposure in Machine Learning for Cellular Damage Prediction
Dong–Seok Lee, Ali Abu Shqair, and Eun–Hee Kim(SNU)

제8분과

방사선 이용 및 기기 (Radiation Utilization and Instrumentation)

8A 5.22.(목)

방사선 이용 및 기기 I (Raidation Utilization and Instrumentation I)

| 좌장 김진환(Kim, Jinhwan), 권인용(Kwon, Inyoung) | 303A

09:00 Finding the Best Trajectory of Robot-CT using the Projection Quality and Reconstructability
Seungjun Yoo, Seokwon Oh, Junho Lee, Seongbon Park, and Ho Kyung Kim(PNU)

09:20 Contamination Mapping Based on Ambient Dose Equivalent Rate Using a Drone
Minseo Song, Dukwoo Kim, Joonhyuk Lee, Changyu Ko, Seungho Lee, Hyeonseung Lyu, and Manhee Jeong(Jeju National Univ.)

09:40 Assessment of $LaBr_3$:Ce and $CeBr_3$ Scintillators for Low-energy ^{55}Fe X-ray Detection
Jae Hyung Park, Jinhong Kim, Siwon Song, Seunghyeon Kim, and Sangjun Lee(CAU), Bongsoo Lee(KHNP)

10:00 Determining Scanning Trajectories for Robot-CT using Reinforcement Learning
Seokwon Oh, Seungjun Yoo, Junho Lee, Seongbon Park, and Ho Kyung Kim(PNU)

10:20 Coffee Break

10:40 A Fast Neutron Experimental System at RAON
Cheolmin Ham, CheongSoo Lee, Geonhee Oh, Donghyun Kwak, Jaesung Kim, Seong Jae Pyeun, Kwang-Bok Lee, Sangjin Lee, EunHee Kim, Changwook Son, Dong Geon Kim, Minsik Kwag, Jae Cheon Kim, Mi Jung Kim, Young-Ouk Lee, Do Gyun Kim, Jinho Lee, and Kyoungho Tshoo(IBS)

11:00 Monte Carlo Simulation of an Active Coded-aperture Based on Gamma-ray Imaging System for Omnidirectional Detection
Dukwoo KIM, Joonhyuk Lee, Changyu Ko, Seungho Lee, Minseo Song, Hyeonseung Lyu, and Manhee Jeong(Jeju National Univ.)

8B 5.22.(목)

방사선 이용 및 기기 II (Raidation Utilization and Instrumentation II)

| 좌장 이승곤(Lee, Seung-Kon), 임경택(Lim, Kyung Taek) | 303A

13:30 Radiotracer Study for Quantitative Evaluation of Gas-hydrate based Radioactive Wastewater Purification System
Sung-hee Jung, Jinho Moon, and Jang-geun Park(KAERI), Seong-deok Seo, and Ju-dong Lee(KITECH)

13:50 Role of Mossbauer Spectroscopy in Characterization of Iron Oxides based Pigments in the Ancient Gaya Tumuli
Young Rang Uhm and Hyunkyung Choi(KAERI), Min Su Han(NUCH), Dongg Hyeok Moon(KIGAM)

14:10 Characterization of the Neutron Spectrum at NAA Irradiation Positions in the HANARO Reactor from Low Power to Full Power
Kishore Babu Dasari(Gyeongsang National Univ.), Seongpyo Hong and Gwang-Min Sun(KAERI), Hana Cho(KRISS)

14:30 Coffee Break

14:50 Preparation for Demonstrating the 99Mo Production Process Using HANARO for the New Research Reactor
Seung-Kon Lee, Suseung Lee, Kyungseok Woo, Mal-Go-Bal-Gae-Bit-Na-La Yoo, and Jin-Hee Kim(KAERI)

15:10 Identification of a Non-radiative Shallow Acceptor in Zn0.8Al0.2O Alloy Irradiated with N+ Ion Beam
Jun Kue Park, YuMi Kim, and Gi Wan Jeon(KAERI(KOMAC)), Weon Sik Chae(KBSI), Jong-Soo Lee(DGIST)

8C
5.22.(목) – 23.(금)

방사선 이용 및 기기 (Raidation Utilization and Instrumentation) – POSTER

| 좌장 김진유(Kim, Jinyu), 최현경(Choi, Hyunkyung) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO8C01 Testing the Effect of Packaging Materials on Activity Measurement using 4πβ-ɣ Coincidence Counting
Jinyu Kim, Bo–Young Han, and Gwang–Min Sun(KAERI)

PO8C02 Development of the Radiation Mapping Algorithm Considering Altitude Information
Jae Wook Kim, Jeong Yeon Lee, Min Beom Heo, Hee Kwon Ku, and Sang Hun Shin(FNC Tech.)

PO8C03 2025 Comparison and Analysis of Tritium Measurement Using a Liquid Scintillation Counter
Hyun–jae LEE and Kyu–Kwang Kang(WSNESC)

PO8C04 2025 Comparison of Environmental Radioactivity Analysis Results Using a Gamma Spectrometer
Ah–Reum HAN and Yoon–Seok Jung(WSNESC)

PO8C05 Current Status of Research and Development in the Radiation Equipment Fab
Han Soo Kim, Jang Ho Han, Young Soo Kim, Hyun Bin Kim, Moon Sik Chae, Kyung Min Oh, Jin Hyung Park, Jae Yeon Park, and Jae Hyun Kim(KAERI)

PO8C06 Positron Annihilation Doppler Broadening Spectroscopy of Korean Celadon
Jaegi Lee, Young–Su Jeong, Hyunkyung Choi, Young Rang Uhm, and Gwang–Min Sun(KAERI), Min–Su Han(NUCH)

PO8C07 Theoretical Optical Performance of Phosphors for Megavoltage X-ray Imaging
Seongbon Park, Seungjun Yoo, Junho Lee, Seokwon Oh, and Ho Kyung Kim(PNU)

PO8C08 Dual-energy Subtraction Efficiency of Various X-ray Detection Materials
Junho Lee, Seungjun Yoo, Seokwon Oh, Seongbon Park, and Ho Kyung Kim(PNU)

PO8C09 Development of a Fast X-ray 3D Imaging System for Defect Inspection of Cylindrical Lithium-Ion Batteries
Jaeyoung Im and Sung Oh Cho(KAIST)

PO8C10 A Feasibility Study on Neural Network Regression Models for Two-Dimensional Radioactive Source Localization Using PSF-SiPM Detection Systems
Jinhong Kim, Siwon Song, Jae Hyung Park, Seunghyeon Kim, and Sangjun Lee(CAU), Bongsoo Lee(KHNP)

PO8C11 Study on the Method of Measuring Radiation Energy by Measuring the Rising Slope of the Signal Waveform
Seung–Jae Lee(Dongseo Univ.), Hakjae Lee(ARALE Laboratory)

PO8C12 Adaptive Ring Oscillator Design for 20MHz HIFU Ultrasound Sensor Applications
Il hyung Cho and Inyong Kwon(Yonsei Univ.)

PO8C13 Investigation of Electrochemical Performance Enhancement in Electron Beam-Irradiated Battery Cathodes
Seunguk Cheon and Sung Oh Cho(KAIST)

PO8C14 Optimizing Scintillator Thickness and GEB Parameters for Beta Spectrometry in Plastic Scintillation Detectors
Deokseong Kim, Wonku Kim, Jaehyun Park, Gyohyeok Song, Sangho Lee, Hyunbin Yun, Seoyun Jang, Uijin Lee, and Gyuseong Cho(KAIST)

PO8C15 Performance Optimization Through Offline Analysis of an Age-Momentum Correlation Spectroscopy Using a Fast Digitizer
Young–Su Jeong, Bo–Young Han, Jaegi Lee, Jinyu Kim, and Gwang–Min Sum(KAERI), Yongmin Kim(Daegu Catholic Univ.)

PO8C16 Beam Current Monitoring using BPMs at KOMAC
Seunghyun Lee, Hyeok–Jung Kwon, Jae–Ha Kim, Han–Sung Kim, and Young–Gi Song(KAERI(KOMAC))

PO8C17 Construction of External Beam PIXE Beamline for Cultural Heritage Analysis
Kye–Ryung KIM, Young–Gi SONG, Jae–Ha KIM, Han–Sung KIM, and Hyeok–Jung KWON(KAERI(KOMAC))

PO8C18 MDA Assessment of Liquid Radioactive Waste for On-Site Application using $CeBr_3$, $LaBr_3$(Ce), and NaI(Tl) Scintillators
Jaehyun Park, Gyohyeok Song, Wonku Kim, Sangho Lee, Hyunbin Yoon, Deokseong Kim, Seoyun Jang, Uijin Lee, and Gyuseong Cho(KAIST), Ki–baek Shin(KAERI)

PO8C19 Comparative Performance Evaluation of Silicon and CdZnTe Photon Counting Sensors in a MiniPIX Timepix3-based Portable XRF System
Myungsoo Kim, Heejun Chung, Sangjun Lee, Wooseub Kim, Jaeyeong Jang, and Giyoon Kim(KINAC)

PO8C20 Design of High Speed Digital Silicon Photo-Multiplier (SiPM) Using Common 180 nm CMOS Process
Jin–Seok Oh(UST), Chanho KIM and Min Sun Lee(KAERI), Inyong Kwon(Yonsei Univ.)

PO8C21 Optimized Temperature for Thermal Oxidation of Silver for Iodine Separation in fission 99Mo Production Process
Bogyeong Park, Jin–hee Kim, Suseung Lee, and Seung–Kon Lee(KAERI)

PO8C22 ^{67}Cu Production from Zinc Targets: A Cross-Section Comparison of ^{68}Zn and ^{70}Zn
M.H Jung, H.M Jang, J.K Park, S.C Yang, and W.J Cho(KAERI)

PO8C23 Experimental Study on Energetic Particles Irradiation for BJT
Sung Ho Ahn and Gwang Min Sun(KAERI)

PO8C24 Conceptual Design of Korea Neutron In-beam Mossbauer Spectroscopy
Hyunkyung Choi, Jaegi Lee, Gwang–Min Sun, and Young Rang Uhm(KAERI)

PO8C25 Investigation of Epithermal Neutron Angular Flux for a Compact Moderator System Design with GEANT4
Hyunha Shim and Seong Hee Park(Korea Univ.)

PO8C26 Neutron Activation Analysis in the Irradiation Hole of the HANARO Research Reactor for Verification of Advanced Neutron Flux Detectors
Junesic Park, Seong Woo Yang, Byung Gun Park, Sung Jae Park, and Jong Woo Kim(KAERI), Kishore B. Dasari(Gyeongsang National Univ.), Christophe Destouche, Loic Barbot, Christophe Domergue, and Herve Philibert(CEA)

PO8C27 Optimization of Electrical Current for Operando Neutron Depth Profiling: A Preliminary Study
Kyungmin Kim(KAERI|Sejong Univ.), Byunggun Park and Jinhwan Kim(KAERI), Kyungtaek Lim(Sejong Univ.)

PO8C28 Study for Quantitative Assessment of contaminated Uranium in Polyethylene using HANARO Neutron Activation Analysis
Seongpyo Hong, Sung Hyo Lee, Kishore B. Dasari, Bo–Young Han, and Gwang–Min Sun(KAERI)

PO8C29 Improvement in the Safety of Polyethylene/Montmorillonite Composite Separator for Lithium-Ion Batteries by Electron Irradiation
Sung Woo Kim and Sung Oh Cho(KAIST)

제9분과 양자공학 및 핵융합기술 (Quantum Engineering and Nuclear Fusion)

9A 5.22.(목)

양자공학 및 핵융합기술(Quantum Engineering and Nuclear Fusion)

| 좌장 김한성(Kim, Han-Sung), 최수석(Choi, Sooseok) | 401B

초청발표

14:00 R&D for Second-Stage Superconducting Accelerator at RAON
Yong-Sub Cho(IBS)

14:20 Upgrade Plan of KOMAC 100 MeV Linac
Hyeok-Jung Kwon, Han-Sung Kim, Young-Gi Song, Sang-Pil Yun, Seunghyun Lee, Dong-Hwan Kim, Sukho Moon, Sungbin Park, and Gyuhaeng Jo(KAERI)

14:40 Optimal Charge State Selection of Iron ions for beam acceleration in the KAHIF ECR Ion Source
Kihyun Lee, Seunghyun Lee, Sangbeen Lee, Dae-Sik Chang, and Dong Won Lee(KAERI)

초청발표

15:00 Quasi-symmetric Stellarators: A New Paradigm in Magnetic Confinement Fusion
Jong Kyu Park(SNU)

15:20 Design and Manufacturing Considerations for HCCP TBM-Shield Structures Based on RCC-MRx
SeongDae Park, Suk-Kwon Kim, Dong Won Lee, Jae-Sung Yoon, and Hyoseong Gwon(KAERI)

15:40 A HAZOP Analysis on the Design of Coolant Purification System for Breeding Blanket
Seok-Kwon Son, Myungho Kim, Chang Shuk Kim, Youngmin Lee, and Mu-young Ahn(KFE), Chang Wook Shin(KAERI)

9B 5.22.(목) – 23.(금)

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

| 좌장 정봉기(Jung, Bongki), 성충기(Sung, Choongki) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO9B01 The Process and Efforts of the Electric Noise Reduction from ACCT Beam Current Monitoring
Sang-Pil Yun, Young-Gi Song, Han-Sung Kim, and Hyeok-Jung Kwon(KAERI)

PO9B02 Performance and Operational Experience of SCRFQ in KAHIF
Sangbeen Lee, Seunghyun Lee, Kihyun Lee, Dae-Sik Chang, and Dong Won Lee(KAERI)

PO9B03 Development Status of New 3-MeV RFQ for KOMAC
Han-Sung Kim, Kyung-Hyun Kim, SeokHo Moon, Seung-Hyun Lee, Dong-Hwan Kim, and Hyeok-Jung Kwon(KAERI)

PO9B04 Operation Status of KAERI Heavy-ion Irradiation Facility (KAHIF) for Nuclear Fusion/Fission Materials
Seunghyun Lee, Dong Won Lee, Dae-sik Chang, Sangbeen Lee, Kihyun Lee, and Sung-Ryul Huh(KAERI)

PO9B05 Method for Constructing a KOMAC Accelerator Tunnel Survey Network Using a Spatial Analysis Program
Dae-Il Kim, Sang-Hun Lee, Nam-Woo Kang, and Jang-Sik Jang(KAERI)

PO9B06 D-D Fusion Neutron Spectrometer in KSTAR Tokamak
Youngseok Lee, Jinseok Ko, Yong–Un Nam, and Hee–Soo Kim(KFE)

PO9B07 Experimental Validation of Key Components in the Helium Cooling System for Fusion Reactors
Changwook Shin, Suk–Kwon Kim, Dae–Sik Chang, Hyung Gon Jin, and Dong Won Lee(KAERI), Myungho Kim, Seok–Kwon Son, Youngmin Lee, and Mu–Young Ahn(KFE)

PO9B08 Development of HCCP TBM Fabrication Procedure and Design of Small mock-up for Fabrication
Jae Sung Yoon, Seong Dae Park, Suk–Kwon Kim, and Dong Won Lee(KAERI), Hyoseong Gwon(KFE)

PO9B09 Neutron Emission Dependence on Divertor Material in KSTAR Plasmas
Jong–Gu Kwak(KFE)

PO9B10 In-box LOCA Sensitivity Analysis for PD-2 HCCR-TBS
Hyung gon Jin, Seong Dae Park, Suk–Kwon Kim, Jae–Sung Yoon, Dong Won Lee, and Chang Wook Shin(KAERI), Mu–Young Ahn(KFE)

PO9B11 Application of EPICS based I&C in TRAP, KAHIF, and KoHLT-EB
Dae–Sik Chang, TaeSung Kim, Seunghyun Lee, Suk–Kwon Kim, Sangbeen Lee, Kihyun Lee, and Dong Won Lee(KAERI)

PO9B12 Progress in Development of Soft X-ray Array in KSTAR by Multichannel SiPM Readout of a Scintillator
Myungwon Lee, Dongha Kim, and Choongki Sung(KAIST), Junghee Kim(KFE)

PO9B13 Preliminary Shielding Design for the PGNAA Using D-D Neutron Generator
Sunghwan Yun, Dong Won Lee, Hyung Gon Jin, and Bongki Jung(KAERI)

제10분과 원자력 건설 및 운영 기술 (Nuclear Power Plant Construction and Operation Technology for Nuclear Facility)

10A 5.22.(목) 지진 및 외부재해 (Seismic and External Hazard)

| 좌장 김정한(Kim, Jung Han), 이세현(Lee, Sei-Hyun) | 400

초청발표

09:00 Current Status and Issues of Fragility analysis for Nuclear Power Plant SSCs
In-Kil Choi(KAERI), Hong-Pyo Lee(KHNP)

09:30 Analysis of Effect by Probabilistic Soil-structure Interaction on Seismic Fragility of Nuclear Power Plant Equipment
Jae-Wook Jung, Jeong-Gon Ha, and In-Kil Choi(KAERI), Hong-Pyo Lee(KHNP)

09:50 Shaking Table Tests of a Small-scale Metafoundation Model to Reduce Vibrations of SSCs
Jin Ho Lee and An Mau Nhat Nguyen(Pukyong National Univ.),
Jeong-Rae Cho, Sangho Lee, and Hyejin Yoon(KICT), Dong-Uk Park and Bub-Gyu Jeon(SESTEC)

10:10 Development of 20 ton - 3D Small Seismic Isolator for Microreactors and Small Modular Reactors
BONG YOO, TAE-YOUNG RYU, and YUN-HWAN MAENG(BEES), JAE-HAN LEE(KAERI)

10:30 Coffee Break

10:50 Risk- and Cost-Based Optimization of NPP SSCs Multihazard Capacity in Post-Disaster Stage
Eujeong Choi and Daegi Hahm(KAERI)

11:10 Multi-Hazard Slope Safety Assessment near Nuclear Power Plants: Influence of Seismic Activity and Soil Saturation
MD MOSTAFIZUR RAHMAN, Chaeyeon Go, and Shinyoung Kwag(Hanbat National Univ.),
Seunghyun Eem(Kyungpook National Univ.), Daegi Hahm(KAERI)

11:30 3D Flood Analysis and Comparison in Coastal Urban Areas Under Extreme Overtopping
Jaehwan Yoo, Gwiun Jeong, and Byunghyun Kim(Kyungpook National Univ.)

11:50 Seismic Hazard Assessment for Northern Egypt: Insights from Earthquake Catalog Analysis and Gutenberg-Richter Parameters
Mahmoud Hamouda and Eric Yee(KINGS)

10B 5.22.(목) 부지 및 건설 (Siting and Construction)

| 좌장 박동희(Park, Donghee), 이진호(Lee, Jin Ho) | 400

13:30 Analysis of Technical Standards for Applying HDPE Coated and Greased Tendon System in Reactor Containment Building
Hyukkee Lee and Sanghoon Noh(KHNP)

13:50 Advanced Work Package Application for Nuclear Construction Projects: Review on the Work Breakdown Structure
Dongwoo Choo and Wooyong Jung(KINGS)

14:10	Analyzing Delay Frequencies and Risk Factors in Nuclear Plant Commissioning: Lessons from BNPP Units 1 and 2 Taeyoung Kim and Wooyong Jung(KINGS)
14:30	Coffee Break
14:50	Mapping Construction Schedule and Critical Paths in Reactor Design for Nuclear Plant Risk Evaluation Nicholas Bertony Saputra and Wooyong Jung(KINGS)
15:10	Structural Integrity Effect of Reactor Cavity in Turbulence Models Ho Jung Lee, Jun Kyu Lee, Sung Hwan Kim, and Jong Sung Moon(KEPCO E&C)

10C 5.22.(목) 수화학 (Water Chemistry)

I 좌장 심희상(Shim, Hee Sang), 권혁철(Kwon, Hyuk Chul) I 401A

13:30	Performance Evaluation of Ion-Exchange Resins in i-SMR Coolant Chemistry Management Under High-Pressure and Low-Temperature Conditions Ukjin Yeo and Sungyeol Choi(SNU), Stuart Aberdeen and Richard Ian Foster(NIFTEP)
13:50	Theoretical Approach to Calculating the pH When Using Sodium Hydroxide to Prevent the Vaporization of Iodine in Post LOCA Seungho Lee, HyukChul Kwon, ChoRong Kim, Da—seul Ham, YongSang Cho, and KyuMin Song(KHNP)
14:10	The Effect of Corrosion Product Deposit on Corrosion Acceleration of Zr-1.0Nb-1.0Sn Fuel Cladding Materials in High Temperature Pressurized Water Hee—Sang Shim, Mingyo Seo, Do Haeng Hur, Soon—Hyeok Jeon, Sang—Yeob Lim, and Seong Jun Ha(KAERI), Soo—Yeol Lee(Chungnam National Univ.)
14:30	The Necessity Review adding Fluoride Parameter in Steam Generator and Feedwater for Managing Component Integrity at NPP Hyuk Chul Kwon, Seung Ho Lee, Da Seul Ham, Cho Rong Kim, Yong Sang Cho, and Kyu Min Song(KHNP)

10D 5.23.(금) 운전/정비/열화 (Operation, Maintenance, Aging Management)

I 좌장 이홍표(Lee, Hongpyo), 김기태(Kim, Kitae) I 400

09:00	Dynamic Control Evaluation of Nitrogen Brayton Cycle for Decoupling Strategy on Thermal Energy Storage System and Advanced Reactor Sungkun Chung, Jae Hyun Choi, and HangJin Jo(POSTECH)
09:20	Development of Continuous Pipe Leakage Diagnosis System for Secondary Systems of Operating Nuclear Power Plants DongYun Cho(UST), You—Rak Choi(KAERI)
09:40	SMR BoP Piping Material Selection Methodology Jiye Bang, Jihun Kang, and Daeyoung Lee(KEPCO E&C)
10:00	Development of Augmented Reality-Based Management System for Buried Pipe in Operating Nuclear Power plant KiTae Kim, JaeSeop Shin, GeunYoung Park, and DaeYoung Lee(KEPCO E&C)
10:20	Theoretical Considerations on Corrosion of Protective Coatings SANGJUN LIM(KHNP)

10:40	Coffee Break
11:00	Accelerated Thermal Aging of High Nitrogen Austenitic Stainless Steel for Long-Term Thermal Degradation Simulation: Microstructural and Mechanical Property Evaluation Seongjun Kim, Junhyuk Ham, and Ji Hyun Kim(UNIST)
11:20	Effects of Steam and Chemical Spray Solution on Degradation of Non-metallic Materials Inyoung Song, Daehwan Kim, Daewon Cho, Sangkyo Kim, and Seungjae Song(KIMM), Hansoo Kim(KHNP), Yunju Lee, Junhyuk Jeong, and Jihyun Kim(UNIST)
11:40	The 4:1 Rule in ASME NQA-1: History, Meaning, and Modern Implementation JINHONG JOO(KoFONS)

10E 5.23.(금) 구조 (Structural Analysis)

I 좌장 주부석(Ju, Bu Seog), 권태현(Kwon, Tae–Hyun) I 401A

09:00	Development of a Flow Rate Equation for Predicting Leakage through Concrete Cracks Donghwi Eum and Tong–Seok Han(Yonsei Univ.)
09:20	Estimation on Concrete Cracks of Containment Structures under Internal Pressure Chanyoung Kim and Myoungsu Shin(UNIST)
09:40	Numerical Simulation of Two- and Three-dimensional Nonlinear Crack Propagation in Concrete of Containment Building using Cohesive Zone Modeling Habeun Choi and Tae–Hyun Kwon(KAERI)
10:00	Leakage Rate of Containment Structure Based on Damage Using Abaqus CDP Model Jin–Young Park and Tae–Hyun Kwon(KAERI)
10:20	Experimental Investigation of Airflow and Crack Behavior in Reinforced Concrete Plates Yousang Lee and Hong–gun Park(SNU)
10:40	Coffee Break
11:00	Effect of Expansion Due to Sulfate Attack on Shear Strength of Reinforced Concrete Wall HYEON KEUN YANG(KAERI)
11:20	Assessing Wood Composition Influence on Impact limiters in Dry Storage Containers Hyungyu Roh, Chiwoong Ra, and No–Cheol Park(Yonsei Univ.)

10F 5.22.(목) – 23.(금) 원자력 건설 및 운영기술(Construction and Operation Technology for Nuclear Facility) –POSTER

I 좌장 박준희(Park, Junhee), 곽신영(Kwag, Shinyoung) I 3층 로비

I 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

I 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO10F01	Analysis of Technical Standards for In-service Inspection of HDPE Coated and Greased Tendon System in Reactor Containment Building Hyukkee Lee and Sanghoon Noh(KHNP)
PO10F02	Basic Study on Module Technology for Shortening i-SMR Construction Period: Effect of Modularization by Construction Package Wonki Chae and Wooyong Jung(KINGS)

PO10F03 Case study the Operation Mode of the Moderator and the Coolant in TRF(Tritium Removal Facility)
Hojun Lee, Yeonduck Han, Inhoon Lee, and Kyumin Song(KHNP)

PO10F04 Real-time Monitoring of Ultrapure Water pH for Maintaining Device Integrity in Ultra-pure Processes Based on Experience of Wolsong Tritium Removal Facility (WTRF) at Nuclear Power Plant
Inhoon Lee, Yeonduck Han, Hojun Lee, and Kyumin Song(KHNP)

PO10F05 Thermal Degradation Behavior and Stability Assessment of EPDM
Junhyuk Jeong, Yunju Lee, and Ji Hyun Kim(UNIST), Inyoung Song(KIMM)

PO10F06 Assessment of Damage to Building and Human Casualty at Uljin-gun Bukmyeon Nuclear Power Plant Support Facility in the Event of a Seismic at Hanul Nuclear Power Plant (0.3g)
Gungyu Kim, Seunghyun Eem, and Seojun Kim(Kyungpook National Univ.), Jinhee Park(KAERI)

PO10F07 Comparison of Tritium Removal Facility Characteristic
Yeonduck Han, Inhoon Lee, Hojun Lee, and Kyumin Song(KHNP)

PO10F08 Evaluation of the Operational Impacts and Economic Effects for Amine Form Operation of Condensate Polishers in KSNP
Chorong Kim, Daseul Ham, Yong–Sang Cho, Seung–Ho Lee, and Hyuk–Chul Kwon(KHNP)

PO10F09 Effects of pH and pH Control Agents on Corrosion Behavior of SA106 Gr.B in Simulated PWR Flowing Secondary Water
Jeoh Han(KHNP), Do Haeng Hur(KAERI)

PO10F10 pH Estimation in High Temperature Two-Phase Flow of the PWR Secondary System
Hyeeun Jeong, Dayu Fajrul Falaakh, and Chi Bum Bahn(PNU)

PO10F11 Prediction of Water Chemistry for Amine Form Operation of Condensate Polisher in NPPs Using PCS Program
Da–Seul Ham, Hyuk–Chul Kwon, Seung–Ho Lee, Cho–Rong Kim, and Yong–Sang Cho(KHNP)

PO10F12 Pipe Wall Thinning Prediction Using Real Time Data of FAC Test Facility
Kyung Mo Kim, Jong Yeon Lee, and Seong In Moon(KAERI)

PO10F13 Simulation of Seismic Response Effect by Anchor Bolt Degradation of MCC Cabinets
Tae Myung Shin and Byung Chan Lee(KNUT)

PO10F14 Preliminary Estimates on Seismicity in the Red Sea Region
Siyeon Ahn and Eric Yee(KINGS)

PO10F15 Evaluation of the Contribution of Seismic Hazard to Nuclear Power Plant Sites Based on Earthquake Distance
JEONGGON HA and MINKYU KIM(KAERI)

PO10F16 Preliminary Seismicity Estimates for Kenyan Nuclear Projects
ERIC YEE and GEORGE KAIRA(KINGS)

PO10F17 Estimation of the Probable Maximum Precipitation (PMP) Return Period in the NPP Site
Beom–Jin Kim and Minkyu Kim(KAERI)

PO10F18 Numerical Analysis of Structural Integrity Assessment of the Reactor Cavity During a Steam Explosion Using Load-Mapping Technique
Seong–Kug Ha(KINS), Yeo–Hoon Yoon and Kyoung–Teak Lee(KOSTECH)

PO10F19 Introduction to Control Drum Driving System for Molten Salt Reactor
Jinsung Kwak, Jinho Oh, and Gyeong Hoi Koo(KAERI)

PO10F20 On Analyzing Seismic Behaviors of Dynamic Absorber-applied Nuclear Power Plant Piping According to Several Design Methods
Chaeyeon Go and Shinyoung Kwag(Hanbat National Univ.), Jinsung Kwak and Jinho Oh(KAERI), Seunghyun Eem(Kyungpook National Univ.)

PO10F21 Prediction of Unmeasured Floor Response Spectrum Using Seismic Monitoring System
Yongmoon Hwang, Tae–Hyun Kwon, and Minkye Kim(KAERI)

PO10F22 Hydraulic Mass Calculation of Component Storage Racks in Pool
Jinsung Kwak and Jinho Oh(KAERI)

PO10F23 Reconstructing Structural Material Profiles using Elastic Full-Waveform Inversion
Eunyoung Kim(KHNP), Jun Won Kang(Hongik Univ.)

PO10F24 Probabilistic Assessment of Internal Pressure Capacity of Prestressed Concrete Containment Building
Gyeonghee An and Tae–Hyun Kwon(KAERI)

PO10F25 Assessment of Containment Structure Wall Material Response to Internal Pressure using Stress Tensor
Hye–Min Shin and Tae–Hyun Kwon(KAERI)

제11분과 원자력정책, 인력 및 협력 (Nuclear Policy, Human Resources and Cooperation)

11A 5.22.(목)

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

| 좌장 백민(Baek, Min), 이영준(Lee, Youngjoon) | 401A

09:00 Bridging Perception-Reality Gap: Risk-Opportunity Model for Pyro-SFR Acceptance
Dohyun Ahn(Jeju National Univ.), Min Baek, EUNOK HAN, and Gaeul Choi(SNU Nuclear Energy Police Center)

09:20 Development of the Nuclear Safety Information Disclosure Framework : In Conjunction with the Implementation of the Nuclear Safety Communication Act
JiYoon Shin, JaeWoong Chung, JinA Jeong, YoungSik Park, KyeHee Lee, and ByeongHyeon Chae(KINS)

09:40 Correlation Between the Nuclear Industry Development and Democratization in South Korea: Local Communication Do Matter
MIRU KIM and MIN BAEK(SNU Nuclear Energy Policy Center)

10:00 Effect of Impurity Adsorption on U Concentration of UO_2 Powder in Storage
Haneol Lee, Hyun Ju Kim, Jung Youn Choi, Hyun Young Kim, and Jinho Ryu(KINAC)

10:20 Security Regulation Prospects for Nuclear Power Plant Digital Twin
SEONG YOUN JO and TAEHEE KIM(KINAC)

10:40 Coffee Break

11:00 Net-Zero Power Productions with Microgrid Control Incorporated with Small Modular Reactor (SMR) in UIUC: One More Step to Zero-Energy School Construction
Tae Ho Woo, Chang Hyun Baek, and Kyung Bae Jang(The Cyber Univ.)

11:20 Integrating Small Modular Reactors into Repowering Coal-fired Power Plant: Analysis about Concept and Challenges for South Korea
Seokjun Oh and Jeongik Lee(KAIST)

11:40 Application of 10 CFR Part 53 to the Siting of Floating Nuclear Power Plants: A Risk-Informed and Performance-Based Approach
Sooyeun Park, Eungjae Kim, Jae Young Choi, Bong Yoo, and Yoon Won Park(BEES)

11B 5.22.(목) – 23.(금)

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

| 좌장 고한석(Ko, Hansuk), 노선영(Noh, Sun Young) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO11B01 KFUPM Nuclear Summer Training Program: Development, Implementation and Outcomes
Youngmi Nam, Sun Young Noh, Jihyun Kim, Seungah Yang, Jin–Myeong Shin, and Naheun Kim(KAERI)

P011B02	Considerations of Technical Capability Requirements for SMR Operators Hansuk Ko(KAERI)	
P011B03	RI/SRI Licensee Continuing Education Satisfaction Survey Ji Hyun Kim, Jin Myeong Shin, Seung Ah Yang, and Woong Ki Kim(KAERI)	
P011B04	Sharing Experience in Operating the IAEA Lise Meitner Programme for the Development of Global Women Nuclear Experts Naheun Kim and Youngmi Nam(KAERI)	
P011B05	Awareness of Nuclear Safety according to the Recognition of Nuclear Safety Regulations Policy jihye Park(KoFONS)	
P011B06	Limitations and Strategies for Improvement of Nuclear Energy Education in School Textbooks Focused on the 2015 Revised Curriculum Seungah Yang, Jinmyeong Shin, and Jihyun Kim(KAERI)	
P011B07	Evaluation of the Effectiveness of Nuclear Energy Understanding Education on Teacher's Perception Change Jinmyeong Shin, Jihyun Kim, Seungah Yang, and Woongki Kim(KAERI)	
P011B08	Analysis of Changes in Nuclear Energy-Related Keywords in National Curriculum Revisions: Focusing on the 2009, 2015, and 2022 Revised Curricula Jinmyeong Shin, Seungah Yang, and Jihyun Kim(KAERI)	
P011B09	Public Perception of Radiation In Kyung Lee, Hyun Jun Na, and Seung Jin Choi(KHNP RHI)	
P011B10	Analysis of Public Perception Surveys on Nuclear Energy Hyun Jun Na, In Kyung Lee, and Seung Jin Choi(KHNP RHI)	
P011B11	Analysis of Public Acceptance Influence Factors on FNA Hyun Jun Na, In Kyung Lee, and Seung Jin Choi(KHNP RHI)	
P011B12	Analysis of Recent U.S. Nuclear Policy Changes and Their Implications Hansol KO and Chansuh LEE(KINAC)	
P011B13	Implementing Safeguards by Design Analysis of Gaps and Suggested Amendments Seungmin LEE, Jaesan KIM, and Seungho Ahn(KINAC)	
P011B14	A Study on Changes in the International Export Control Regimes ans Measures for Strengthening Nuclear Export Control Beomseok SHIN, Heesu Choe, and Chansuh Lee(KINAC)	
P011B15	Design Approaches for Development of Safeguardability Assessment Methodology for Decommissioning Nuclear Facility Ickhyun Shin, Myungtak Jung, and Yeseul Seo(KINAC)	
P011B16	A Conceptual Comparison of XML-based Nuclear Material Accounting Report Hyun—jin Kim and Seungho Ahn(KINAC)	
P011B17	Comparative Analysis of Diversion Pathway Analysis Methodologies for Safeguards-by-Design Implementation Yonhong Jeong and Seungmin Lee(KINAC)	
P011B18	Analysis of Design Requirements for the Construction of an Open Source Intelligence (OSINT)-Satellite Image Integrated Database Yonhong Jeong and Gayeon Ha(KINAC)	
P011B19	Safeguards-by-Design for the Development of Next-Generation Nuclear Reactors: Policy and Technical Perspective Yewon Kim, Seungho Jeong, Subong Lee, Donghyuck Lim and Kookheui Kwon(KINAC)	

PO11B20	Consideration of Strategies for Advancing i-SMR's Canadian VDR Process Chul–Kyu Lim, Sang–Hee Kang, and Nu–Ri Oh(KHNP CRI)
PO11B21	Application of COG-09-9030 and REGDOC-2.4.1 for i-SMR Deterministic Safety Analysis Chul–Kyu Lim, Sin–Jung Chang, and Nu–Ri Oh(KHNP CRI)
PO11B22	Review of Mechanistic Source Term (MST) Application to KHNP's i-SMR Chul–Kyu Lim, Sin–Jung Chang, and Nu–Ri Oh(KHNP CRI)
PO11B23	Review of APR1000 and SMART100 Standard Design Approval Experience and Its Implications for i-SMR Chul–Kyu Lim, Sin–Jung Chang, and Nu–Ri Oh(KHNP CRI)
PO11B24	Comparison of 10 CFR Part 52 Subpart B & E for i-SMR Licensing Strategy Chul–Kyu Lim, Sin–Jung Chang, and Nu–Ri Oh(KHNP CRI)
PO11B25	Study of Regulatory Case for Passive Containment Heat Removal Systems in SMR Changyong Jung, Hyeonjo Kim, Hanbang Yoo, Hyoungjin Na, Sora Moon, and Yeon–Gun Lee(Sejong Univ.)
PO11B26	Investigation of Performance Indicators on Emergency Preparedness for Application to Domestic EPR Framework Chanki Lee and Wi–Ho Ha(KAERI)
PO11B27	Economic Feasibility Analysis of Innovative Small Modular Reactor (i-SMR) Applications in South Korea Sin Jung Chang and Sung Jin Lee(KHNP CRI)
PO11B28	Research on Public Acceptance Strategies for EPZ in Small Modular Reactors (SMRs) (Enhancing Public Acceptance for On-Site EPZ Licensing Cases) Sin Jung Chang(KHNP CRI)
PO11B29	Analysis of the Impact of the K-CLOUD Open Research Program's 2017 Projects Completion Sin Jung Chang(KHNP CRI)
PO11B30	Feasibility Analysis of Cryptocurrency Mining using Nuclear Surplus Electricity Jihyun LEE and Eung Soo KIM(SNU)
PO11B31	Analysis of the Domestic and International Industry and Policy Environment for Nuclear Power and Radiation Education in Elementary, Middle, and High Schools Seungah Yang, Jinmyeong Shin, and Jihyun Kim(KAERI)
PO11B32	Siting of Small Modular Reactors in South Korea: Lessons Learned from Site Selection History Gaeul Choi and Sungyeol Choi(SNU)
PO11B33	Comparison of Domestic and International Equipment Qualification Certification Systems and Feasibility of a Joint Certification Program Myeong–Su Kim, Pil–jong Heo, Byungsuk Han, and Jae–yong Shin(KoFONS), Patrick Murray(IEEE Standards Association)
PO11B34	Forecasting the Trump Administration's Energy Policy: Analyzing the President's Budget FY2026 and its Implications for U.S. Nuclear Policy Dong Hoon Lee, Keonhee Lee, Jihwan Lim, Jiyoung Kim, and Eunju Jun(KAERI)
PO11B35	Survey on Nuclear Engineering Students' Perception of Government Nuclear Policy: Focusing on High-Level Radioactive Waste and Continued Operation Juhyeok Son(UNIST), Wonung Jeong(Jeonbuk National Univ.)
PO11B36	Coal-to-Nuclear Transition Policy and Research in the Republic of Korea Joo Hyung Moon, Kyungsoo Yoon, Jai Oan Cho, Youngwoo Lee, and Young Joon Lee(KAERI)

제12분과 원자력 계측제어, 인간공학 및 자동원격 (Nuclear I&C, Human Factors and Automatic Remote Systems)

12A 5.22.(목)

계측제어 및 인간공학 · 자동원격1 (Nuclear I&C, Human Factors and Automatic Remote Systems 1)

| 좌장 김승근(Kim, Seung Geun), 이승준(Lee, Seung Jun) | 402B

09:00 LLM-Based Integrated Control Agent System for Nuclear Reactor
Yoon Pyo Lee, Seung Geun Kim, and Yonggyun Yu(KAERI)

09:20 Hybrid Deep Learning-Based Surrogate Model for Thermal-Hydraulic Codes with LSTM, CNN, and Transformer
Hyojun Yi and Seunghyoung Ryu(Sejong Univ.), Hyeonmin Kim(KAERI)

09:40 Improving the Restoration of Stuck Signals Using LSTM in Nuclear Power Plants
Ji Woo Hong, Min Seon Kim, and Man Gyun Na(CSU)

10:00 AI-Based Fault Detection and Diagnosis of Photocouplers for Reactor Protection Systems
Ho Jun Lee, Hye Seon Jo, Dong Geon Jang, and Man Gyun Na(CSU)

10:20 Review of the Conventional Regulations Guideline for Digital Instrumentation and Control of Nuclear Power Plants focusing on Small Modular Reactors
Sujeong Lim and Eunkyong Jee(KAIST), Jiyoung Song(Hannam Univ.),
Sejin Jung(Chinju National Univ. of Education), Yoona Heo and Junboem Yoo(Konkuk Univ.)

10:40 Coffee Break

11:00 Design for Defense-in-Depth and Diversity (D3) to Cope with CCF in Safety DI&C Systems
Yang Gyun Oh, Yoon Hee Lee, Eunsuk Oh, Yong Hoon Kim, and Ki Chan Park(KEPCO E&C)

11:20 AI-Based Framework for Assessing Operator Mitigation Actions During Abnormal Conditions in Nuclear Power Plants
Ji Hun Park, Eon Sang Jeon, and Man Gyun Na(CSU)

11:40 An Approach to Human Factors Evaluation for Staffing and Qualifications in a Light Water-cooled SMR
Young Do Koo, Tongil Jang, and Sa Kil Kim(KAERI)

12:00 Experimental Assessment of Operator's Situational Awareness under Multi-Module Operation
Tae Ryoun Kim and Jonghyun Kim(KAIST)

12B 5.22.(목)

계측제어 및 인간공학 · 자동원격2 (Nuclear I&C, Human Factors and Automatic Remote Systems 2)

| 좌장 김종현(Kim, Jonghyun), 박종원(Park, Jongwon) | 402B

13:30 Redefinition of Performance Shaping Factors (PSFs) Pertinent to Small Modular Reactors (SMRs)
Adam Haziq Bin Mohamad Fahmi and Jonghyun Kim(KAIST)

13:50 Development and Initial Evaluation of a Prototype Dynamic Emergency Operating Procedure System for Nuclear Power Plants
Jung Sung Kang and Seo Ryong Koo(KAERI), Seung Jun Lee(UNIST)

14:10 A Practical and Low-cost Contact Force and Contact Position Detection Module for Robot Grippers
SeungHwan Kim and KiHong Im(DGIST), Dongwon Yun(KAERI)

14:30 Coffee Break

14:50 Efficient Flow Control for Agile Motion of Hydraulic Manipulator
Gaeun Shin(Chungnam National Univ.|KAERI), Jinyi Lee and Jongwon Park(KAERI),
Yonghun Kim(Chungnam National Univ.)

15:10 Vision-Guided Robotic High-Torque Bolt Fastening for Nuclear Power Plant Maintenance
Hyeokbeom Kwon and Jongwon Park(UST|KAERI), Ki Hong Im and Jinyi Lee(KAERI)

15:30 Design of Flow Control Algorithm Based on Estimation Models for Hydraulic Mobile Manipulators
Seongjin Park and Wonsuk Jung(Chungnam National Univ.), Jinyi Lee, Kihong Im, and Jongwon Park(KAERI)

15:50 Analysis of Nuclear Submarine in Europa Using the eVinci™ SMR: Welcoming Trump-Nomics for Space Industry Incorporated with SpaceX
Tae Ho Woo and Chang Hyun Baek(The Cyber Univ.of Korea),
Kyung Bae Jang(Gangneung–Wonju National Univ.)

12C 5.23.(금)

계측제어 및 인간공학 · 자동원격3 (Nuclear I&C, Human Factors and Automatic Remote Systems 3)

| 좌장 손광섭(Son, Kwangseop), 채영호(Chae, Young Ho) | 402B

09:00 Construction of a Fault Analysis and Normal-State Database for Safety-Grade PLC Modules in Nuclear Power Plants
gi ho Cho, gang min Park, kwan woo Yoo, dong hwa Yun, and dong yeon Lee(SOOSAN ENS)

09:20 Real-Time Monitoring and Visualization System for POSAFE-Q Using RS-232C
TaeGyu Kang, KaRam Park, GaHui Jeong, KwanWoo Yoo, and DongYeon Lee(SOOSAN ENS)

09:40 A preliminary study on application of STPA to Reactor Protection System for Defense-in-Depth and Diversity
Hyeongseok Eun, Sung–Min Shin, and Joon–Ku Lee(KAERI), Yoona Heo and Junbeom Yoo(Konkuk Univ.),
Eunkyoung Jee and Jongmoon Baik(KAIST)

10:00 Hybrid Sensor System Using a Profile-Based Reference Sensor
Yunhee Kang(Baekseok Univ.), You–Rak Choi(KAERI)

10:20 Low-cost Plasma Spectroscopy for Monitoring Gaseous Fission Products from Small Modular Reactors
Wonseok Yang(NIFTEP), Geunwoo Go and Taehoon Park(SNU), Kyoung–Jae Chung(NIFTEP|SNU),
Sungyeol Choi(IOER SNU|NIFTEP|SNU)

10:40 Development of Intelligent CCTV System with Zero-Shot Learning in Closed Network Environment for Nuclear Security Facilities
Minjong Kim, Dongju Kim, Jaeyong Lee, and Yonggyun Yu(KAERI)

11:00 Analysis of Security Guidelines for Exploring Improvements in Nuclear Facility Network Defense Architecture
Dongmin Kim and Moohong Min(Sungkyunkwan Univ.), Aram Kim(Univ. of Suwon)

12D 5.22.(목) – 23.(금)

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

| 좌장 김찬호(Kim, ChanHo), 승민욱(Seung, Minuk) | 3층 로비

| 게시시간 5.22.(목) 13:00 ~ 18:00 / 5.23.(금) 09:00 ~ 12:00

| 저자 발표시간 5.22.(목) 13:00 ~ 14:00

PO12D01 Importance of Power Transfer Design with Bus Protection Logic in Nuclear Power Plants
Moon–Young Kim(KINS)

PO12D02 Improved ASI Control Method for Flexible Operation
Geon Hee Park and Sung Ju Kwon(KEPCO NF)

PO12D03 Enhancing the Reasoning Capabilities of a Domain-Specific Language Model for Nuclear Applications via Knowledge Distillation
Solji Park and Yonggyun Yu(KAERI), Byeongjae Kim(KoreaTech.)

PO12D04 Enhancing Mathematical Reasoning Ability of Nuclear Domain-Specific Large Language Model using Reinforcement Learning
Byeongjae Kim and Solji Park(KoreaTech), Yonggyun Yu(UST|KAERI)

PO12D05 Semiconductor Chip Design for Low Noise Radiation Measurement
Habin Kim and Inyong Kwon(Yonsei Univ.)

PO12D06 Functional Requirements of an Intelligent Decision Support System Prototype in Korean NPPs Under Normal and Abnormal Conditions
GwiSook Jang and SeoRyong Koo(KAERI)

PO12D07 Review of Applicability of Cobalt SPND for Reactor Core Protection
Kyung Gun Kim, Do Yean Kim, and Yu Sun Choi(KHNP)

PO12D08 Water Level Measurement System Based on Optical Fiber Sensors for Application of Multi-Unit Small Modular Reactors
Hoon–Keun Lee and Jaeyul Choo(GyeongKuk National Univ.)

PO12D09 Calculation of Prompt SPND Sensitivity Considering the Space Charge Effect
Hankyu Jo, Kyeongwon Kim, and Deokjung Lee(UNIST)

PO12D10 Reliability Improvement of the Failed Fuel Detection System in HANARO
Youngsan Choi, Jiye Jeong, Soonkyu Hong, Seunggyu Doo, Minwoo Lee, and Minsu Kim(KAERI)

PO12D11 Seismic Considerations in the Replacement of RPS Safety Parameter Indicators
Jiye Jeong, Youngsan Choi, Soonkyu Hong, Seunggyu Doo, and Minsu Kim(KAERI),
Jaehoon Lee(RAON Engineering Technology)

PO12D12 Enhanced Hardware Optimization for RE102 Emission Suppression in POSAFE-Q PLC
Jeong–Chan Lee, Myeong–Jun Jeon, Jae–Pil Ko, and Jae–Houn Jung(SOOSAN ENS)

PO12D13 Development of the Radioactive Isotope Smart Storage for KOMAC
Yi–Sub Min and Jeong–Min Park(KAERI)

PO12D14 Study on Design Optimization of Severe Accident Monitoring Variables
Han Gyu Kim(KHNP)

PO12D15 Design Issues of the Protection System for Industrial Process Heat Supply HTGR
Kwang–Il Jeong, Dae–Il Lee, Hyeong–Seok Eun, and Joon–Ku Lee(KAERI)

PO12D16 Radiation Detector Compensation System for Extreme Environments
Junseong Hwang, Minhwan Park, Minhyuk Park, and Jungyeol Yeom(Korea Univ.), Chanho Kim(KAERI)

PO12D17 Radiation-Hardened ADC Design Using TMR Architecture
Jihun Jeong and Inyong Kwon(Yonsei Univ.)

PO12D18 Design Reinforcement of Diverse Protection System in OPR1000
JINHO JEONG, YONGHUN KIM, and GICHAN PARK(KEPCO E&C), HOYOUNG YOO(Chungnam National Univ.)

PO12D19 Guiding Conductive Strip for Electromagnetic Interference Mitigation
Jaeyul Choo, Jinwoo Park, Jae Youn Park, and Hoon Keun Lee(GyeongKuk National Univ.)

PO12D20 Study on the Design of Structure and Automation of iCPS for i-SMR
Chanho Sung, Kyungmin Kim, and Jungho Kim(KHNP)

PO12D21 An Approach to Effective Pairwise Comparison of NASA-TLX for the Human Factors Experiment on Nuclear Power Plant Operators
Hyun—Chul Lee(KAERI)

PO12D22 A Discussion on the Development Direction of the Next Generation I&C System in Nuclear : To Cope with the Human Error Uncertainty Remaining after Fukushima Accident
Yong—Hee Lee(KAERI)

PO12D23 A Study on the Human Factor Engineering Program for Verifying the Staffing of i-SMR
Kyung—min Kim, Chanho Sung, and Jungho Kim(KHNP)

PO12D24 Evaluation of Function Calling Performance in an On-Premise LLM: A Comparison between AtomicGPT and Open LLMs
JOOWON CHA, SEUNGDON YEOM, and YONGGYUN YU(UST|KAERI)

PO12D25 Application of Explainable Artificial Intelligence (XAI) for Nuclear Power Plant Operations: Classification and Practical Cases
Daehyung Lee, Yongju Cho, Chungwon Seo, and Byung Jo Kim(KEPCO E&C)

PO12D26 Improving YOLO-based Recognition Accuracy for Custom Object Set through TR3D Point Cloud Verification
Ki Hong Im(KAERI), Young Kyun Kim and Pil Geun Jang(KoreaTech.)

PO12D27 A Study on Integrating YOLO and Large MultiModal Models for Improved Object Recognition
Ki Hong Im(KAERI), Pil Geun Jang and Young Kyun Kim(KoreaTech.)

PO12D28 Development of a Robotic Control System for a Nuclear Disaster Response Robot
Jaehee Park and Jongwon Park(UST|KAERI), Jinyi Lee(KAERI)

PO12D29 Performance and Aging Management Program of HANARO
Youngsan Choi, Sangjun Park, Jiye Jeong, Seunggyu Doo, Minwoo Lee, and Minsu Kim(KAERI)

PO12D30 Developing a Monitoring Logic Process to Support LCO Compliance
Sang Won Oh, No Kyu Seong, and Jae Hee Lee(KHNP)

PO12D31 Implementation of Predictive Diagnosis Algorithms for RCPs
Songhae Ye, Hyeonsik Choi, and Iseul Jeon(KHNP)

PO12D32 Introduction of Cybersecurity Vulnerability Management System for NPPs
Taejin Kim, Gwang Seop Son, Young—Jun Lee, Jae Gu Song, and Jae Hwan Kim(KAERI)

PO12D33 A Study of a Cyber Threat Detection for Controller Process Signals Using an Extended Kalman Filter-based State Estimator
Jae Hwan KIM, Kwang Seop SON, Jae Gu SONG, Yong Gu LEE, and Young Jun LEE(KAERI)

PO12D34 Enhancing Nuclear Power Plant Security: Logical and Physical Imaging Techniques for Selective Digital Evidence Acquisition in Custom Drone Forensics
Juhyung Song, Sehoon Lee, Seongyeol Oh, Yonggu Lee, Seongoh Seo, Inhye Hahm, Taewoo Tak, and Youngjun Lee(KAERI)

PO12D35 JTAG Interface-Based Hardware Lock Key for Cyber Intrusion Detection in Nuclear Power Plant Control Modules
Chan Yeong Woo, Je Seok Lee, Min Hyuk Yoon, Gi Ho Cho, and Dong–Yeon Lee(SOOSAN ENS)

PO12D36 Development of a Normal-State Estimation Model and Accelerated Aging Test of TVS Diode for Fault Diagnosis of Digital Input Modules
YEONG–IK SON, Chan–Yeong Woo, Gi–Ho Cho, and Dong–Yeon Lee(SOOSAN ENS)

PO12D37 Implementation of the HDTS with Cybersecurity
MINWOO LEE, Kyungchul KIM, Jiye Jeong, Youngsan Choe, and Sangjun Park(KAERI)

PO12D38 A Review of International Cybersecurity Strategies for Nuclear Power Plants Based on IEC SC 45A Standards
Juhyung Song, Jaegu Song, Jaekwan Park, and Youngjun Lee(KAERI)

지부 활동결과 및 계획발표회

| 일 시 2025. 5. 23.(금) 10:00 ~ 11:00
| 장 소 제주국제컨벤션센터, 303B(3F)

시간계획	내 용	
		[사회 : 황태석 부회장]
10:00~10:05	**인사말**	이기복 학회장
10:05~10:45	**[지부 활동결과 및 계획 발표]**	
	광주 · 전남 · 전북 지부	송종순 지부장
	대구 · 경북 지부	이상훈 지부장
	부산 · 울산 · 경남 지부	이덕중 지부장
	여성지부	정윤선 부지부장
	학생지부	송민섭 학생지부 지도교수
10:45~10:55	종합토의	
10:55~11:00	마무리	

학술발표회 회의장 배치도

2F

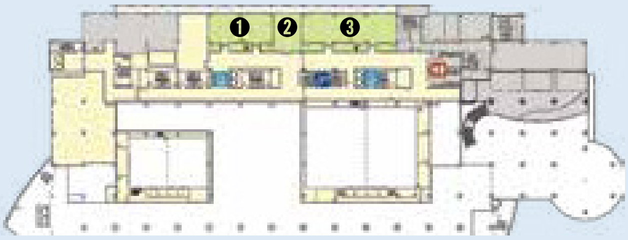
① 201 A, B
② 202 A, B
③ 203

3F

① 301 ② 302 ③ 300
④ 303 A, B ⑤ 304 ⑥ 삼다홀 A,B
⑦ 한라홀 A,B ⑧ 델리지아
⑨ 델리뷰

4F

① 401 A, B
② 400
③ 402 A, B



5F

① 탐라홀
② 오션뷰

전시

위 치	기 업 명
1	MADDE WE PRINT UNIVERSE
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4	RCA

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5	KEIA 한국에너지정보문화재단 Korea Energy Information Culture Agency
6	JK ED&C www.ednc.com
7	W-IE-NE-R
8	KAERI 한국원자력연구원 Korea Atomic Energy Research Institute

교통편

| 제주 국제컨벤션센터 | 제주특별자치도 서귀포시 중문관광로 224(중문동) Tel. 064-735-1000

공항리무진 버스안내 (600번 제주공항 ↔ 중문관광단지)

운행표	공항 → 한라병원 → 동광환승정류장 → 중문관광단지입구 → 호텔(그랜드조선제주, 파르나스호텔, 신라호텔, 스위트호텔, 블룸호텔, 롯데호텔, 켄싱턴리조트,씨에스호텔) → 제주국제컨벤션센터(ICC JEJU) → 제주월드컵 경기장 → 파라다이스호텔 → 서귀포칼호텔
제주국제공항 출발 (06:00 ~ 21:25)	공항정문 1층 5번 게이트 왼쪽 리무진 버스 승차장 (삼영교통 600번)
ICC JEJU	리무진 버스 안내멘트에 따라 컨벤션센터 로터리 정류장에 하차 (600번 제주공항 ↔ 서귀포)
이용요금	공항에서 ICC JEJU까지 편도(성인) 4,500원 매 16~40분 간격 ICCJEJU까지 소요시간 약 1시간

택시안내 (제주공항 ↔ 중문)

거 리	소요시간
약 42㎞	약 50분

렌터카 이용시 (제주공항 → ICC JEJU)

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

Ⓟ 주차 유료화 안내

- **최초 입차후 1시간 이내 :** 무료
- **1시간 이후 ~ 매 30분마다 :** 1,000원씩 과금
- **1일 1회 최대 요금 :** 5,000원 (일반차량 기준, 대형 제외) / 재입차시 신규차량으로 간주되어 과금됨
- **주차정산 :** 센터내 사전정산기 이용 결제 혹은 출차시 무인 정산(카드 결제)
- **주차권 구입처 :** 하이파킹 김성훈 소장 070-7119-2036 (제주국제컨벤션센터 2층)

한국원자력학회 특별회원

한국수력원자력(주)	DOOSAN	KAERI 한국원자력연구원 Korea Atomic Energy Research Institute	한국전력공사	KEPCO E&C
한국원자력안전기술원 KINS KOREA INSTITUTE OF NUCLEAR SAFETY	한전원자력연료	현대건설	DAEWOO E&C	SAMSUNG 삼성물산 건설부문
한전KPS주식회사 KEPCO PLANT SERVICE & ENGINEERING CO., LTD	Westinghouse	KFE 한국핵융합에너지연구원	DL E&C	(주)삼영유니텍
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GS 에너지	LS 전선	SK 에코플랜트	posco 포스코이앤씨	orano Giving nuclear energy its full value
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iKONF	HD현대일렉트릭	株式會社 三信 Samshin Limited	MOASOFT	옵티멀에너지서비스(주)
상지상사	SAEAN 세안기술주식회사 SAE-AN ENGINEERING CORPORATION	이성씨엔아이(주)	FNC (주)미래와도전 FNC Technology Co., Ltd.	Century 센추리
enertork	한국에너지정보문화재단	KNT Korea Nuclear Technology	KINGS	TBOG Thinking Business On Green Energy
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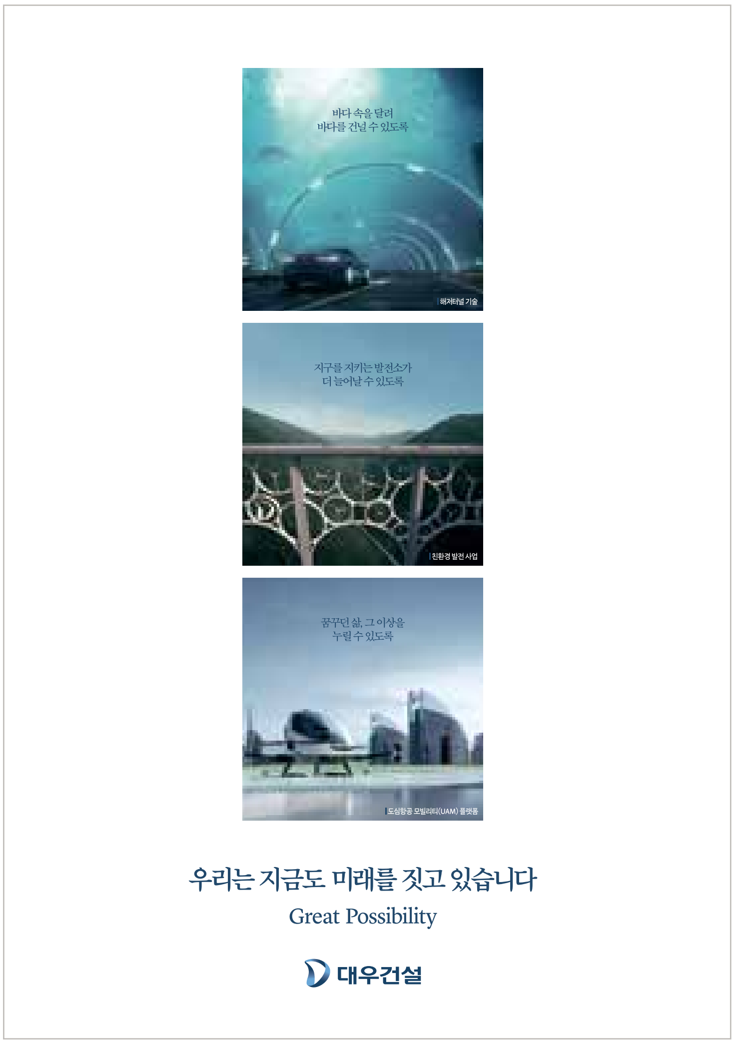
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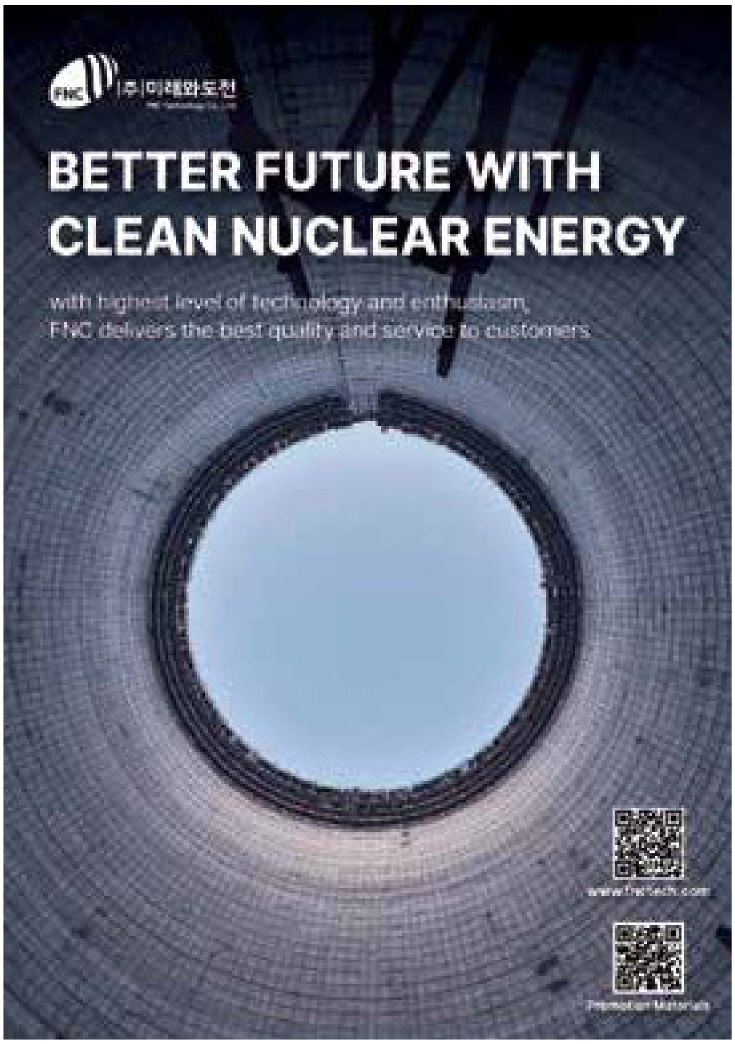
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2025 KNS Spring Conference
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