KNS(P)-001-2022 춘계학술발표회 프로그램

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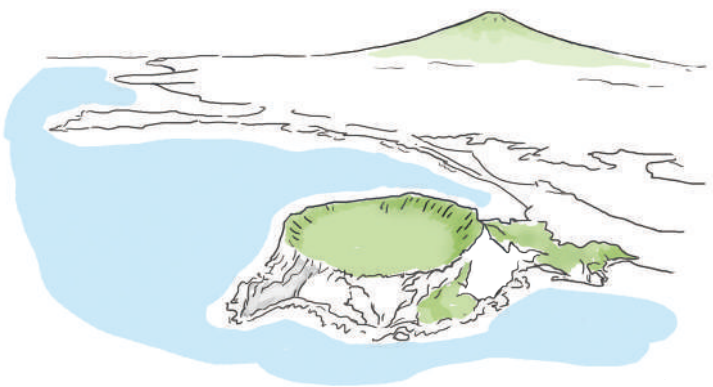
KNS 2022 Spring
춘계학술발표회

KOREAN NUCLEAR SOCIETY

2022. 5. 18(수)~20(금)
제주 국제컨벤션센터



※ 스캔하면 전체프로그램을 보실 수 있습니다.

사단법인 한국원자력학회
KOREAN NUCLEAR SOCIETY

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사단법인 한국원자력학회
KOREAN NUCLEAR SOCIETY

CONTENTS

학회장 인사말

정동욱 학회장

존경하는 원자력학회 회원 여러분께

겨울이 아무리 추워도 봄이 오는 것을 막지 못하다고 합니다. 그렇게 맹위를 떨치던 코로나19도 이제는 잦아들고 있습니다. 덕분에 이번 2022년도 춘계학술발표회를 3년만에 완전한 대면 학술발표회로 개최하게 되었습니다. 더욱이 이번 학술발표회는 원자력 정책변화 후 첫 번째라 더 뜻깊을 것으로 봅니다. 지난 5년간 회원 여러분들의 부단한 노고 덕분에 탈원전을 극복하는 변화의 계기가 만들어지지 않았나 합니다. 여러가지로 바쁘실 것으로 아오나 이번 학술발표회에 꼭 참석하시어 오랜만에 지인들과 회합도 하고 원자력의 미래를 얘기하는 기회가 되기를 바랍니다.

이번 학술발표회에는 500여편의 논문 발표를 비롯하여 13개 주제의 워크숍과 더불어, 특히 5월 18일 수요일에는 '윤석열 시대, 원자력 전망과 과제, 그리고 학회의 역할'이라는 주제로 학회 임원들이 주관하는 특별워크숍이 있습니다. 학회의 임원들이 산업, 연구, 국민소통 등에 대해 그간의 경험과 앞으로의 전망에 대해 제언을 발표하고 그간에 원자력의 발전을 위해 많은 노력을 하셨던 분들을 모시고 토론을 가질 예정입니다. 여기에 회원 여러분들의 목소리를 담고자 하오니 꼭 참석하시어 좋은 의견을 개진해 주시기 바랍니다.

또한 5월 19일 목요일에는 국민의힘 김영식의원님의 축사에 이어서 원자력의 도약을 위한 조언을 듣고자 조환익 전 한국전력공사 사장님을 초청하였습니다. 무엇보다도 이번 학술발표회의 하이라이트는 원자력의 미래세대를 위해 대학청년이사들이 기획한 학생학술경진대회입니다. 이들 경진대회는 예선을 통과한 작품에 대해 현장 발표와 투표로서 선정작을 가리니 꼭 참석하시어 청년들에게 격려도 주시고 선정 투표에도 참여해주시기를 바랍니다.

5월의 제주는 그 어떤 시기보다 특별하지 않나 합니다. 여기에 이번 2022년 춘계학술발표회는 더욱 뜻깊은 때가 아닌가 합니다. 이번 춘계학술발표회에서 회원 여러분들의 건강하고 반가운 얼굴을 뵙기를 기대합니다.

2022년 5월

제34대 학회장 정 동 욱 拜上

학술발표회 전체 일정

| 등 록 5.18(수) 13:30~17:00 / 5.19(목) 08:00~17:00 / 5.20(금) 08:00~12:00

5월 18일(수) 워크숍 14:00 ~ 18:00

특별워크숍

프 로 그 램	참가비	회의장
윤석열 시대 – 원자력 전망과 과제, 그리고 학회의 역할	무료	한라홀A

연구부회/지부 워크숍

	프 로 그 램	참가비	회의장
A	국내외 소형모듈원자로(SMR) 기술개발 사업 현황	무료	202
B	최신 원자로물리 기술 개발 현황	50,000	402
C	사고저항성 핵연료: 단기 및 장기 전략	30,000	203
D	혁신형 원자로 열수력 연구 현황과 미래	50,000	한라홀B
E	중대사고 현안해결 로드맵 개발 현황	50,000	201
F	난치암 극복을 위한 방사선의 · 생명기술의 미래와 발전전략 – 포스트코로나시대, 방사선의학의 미래를 말한다. –	50,000	301
G	(비공개)원전 기기 내진 해석 및 설계기준초과 지진 평가 워크숍	무료	삼다홀B
H	원자력안전규제 분야 대학교육 강화 및 원자력 분야 취업률 제고를 위한 교육협력 방안	무료	삼다홀A
I	원전 안전성 향상을 위한 AI 기반 계측제어기술	50,000	401
J	사용후핵연료 관리전략과 소통 (부제 : 다자시점으로 소통전략을 보다!)	무료	303
K	원자력 대학원생 및 신진연구자를 위한 역량강화 워크숍	무료	302
M	사용후핵연료 관리 기술개발 현황 및 추진 방향	무료	300

참가자 중식

일 시	장 소
5월 19일(목) 11:30 ~ 13:30	탐라홀 (5F)

제90차 평의원회

일 시	장 소
5월 19일(목) 12:00 ~ 13:30	오션뷰 (5F)

개회식 및 초청강연 / 학생학술경진대회

일 시	장 소
5월 19일(목) 16:00 ~ 18:00	한라홀 (3F)

만 찬

일 시	장 소
5월 19일(목) 18:00 ~ 19:30	탐라홀 (5F)

구두발표

5월 19일(목) ~ 20일(금)

구 분	세 션 명	발표장명	발 표 일
제1분과(A)	원자로시스템기술	303	5.19(목) 오후
제1분과(B)	원자로시스템기술	303	5.20(금) 오전
제2분과(A)	원자로물리 및 계산과학	402	5.19(목) 오전
제2분과(B)	원자로물리 및 계산과학	402	5.20(금) 오전
제3분과(A)	원자력시설해체 및 방사성폐기물관리	303	5.19(목) 오전
제3분과(B)	원자력시설해체 및 방사성폐기물관리	203	5.20(금) 오전
제4분과(A)	핵연료 및 원자력재료	삼다홀B	5.19(목) 오전
제4분과(B)	핵연료 및 원자력재료	삼다홀B	5.19(목) 오후
제4분과(C)	핵연료 및 원자력재료	300호	5.19(목) 오후
제4분과(D)	핵연료 및 원자력재료	삼다홀B	5.20(금) 오전
제5분과(A)	원자력열수력	400	5.19(목) 오전
제5분과(B)	원자력열수력	401	5.19(목) 오전
제5분과(C)	원자력열수력	402	5.19(목) 오후
제5분과(D)	원자력열수력	401	5.19(목) 오후
제5분과(E)	원자력열수력	202	5.20(금) 오전
제5분과(F)	원자력열수력	삼다홀A	5.20(금) 오전
제6분과(A)	원자력 안전	202	5.19(목) 오전
제6분과(B)	원자력 안전	202	5.19(목) 오후
제6분과(C)	원자력 안전	201	5.19목) 오전
제6분과(D)	원자력 안전	201	5.20(금) 오전
제6분과(E)	원자력 안전	201	5.19(목) 오후
제7분과(A)	방사선 방호	301	5.19(목) 오전
제8분과(A)	방사선 이용 및 기기	302	5.19(목) 오전
제8분과(B)	방사선 이용 및 기기	302	5.20(금) 오전
제9분과(A)	양자공학 및 핵융합기술	302	5.19(목) 오후
제10분과(A)	원전건설 및 운영기술	301	5.19(목) 오후
제10분과(B)	원전건설 및 운영기술	301	5.20(금) 오전
제11분과(A)	원자력정책, 인력 및 협력	삼다홀A	5.19(목) 오전
제11분과(B)	원자력정책, 인력 및 협력	삼다홀A	5.19(목) 오후
제12분과(A)	원자력계측제어, 인간공학 및 자동원격	203	5.19(목) 오전
제12분과(B)	원자력계측제어, 인간공학 및 자동원격	203	5.19(목) 오후

포스터 게시 및 발표

5월 19일(목) ~ 20일(금)

일 시	장 소
5월 19일(목) 13:00 ~ 18:00 [저자발표 시간 13:00 ~ 14:00] 5월 20일(금) 09:00 ~ 12:00	3층 로비

– 연구부회별 우수포스터 논문 명단 공개 (만찬 행사 시)

학술발표회 회의장 배치도

2F

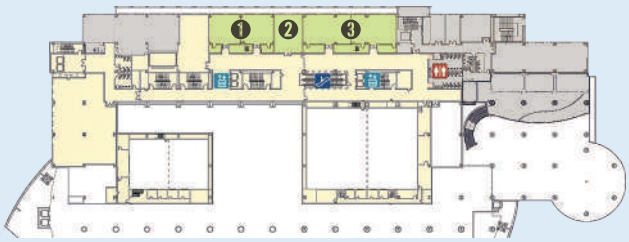
① 201
② 202
③ 203

3F

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

4F

① 401
② 400
③ 402



5F

① 탐라홀
② 오션뷰

한국원자력학회 제34대 임원진

회장

정동욱

수석부회장

백원필

부회장

남요식

설광원

이기복

최성민

한은옥

감사

박석빈

형상철

총무이사

신동호

이유호

사업이사

김종두

정재호

재무이사

염학기

최재돈

국제협력이사

이정익

정원표

기획이사

신안동

장희승

고급정책연구소

이찬복 소장

최성열 부소장

학술이사

김진원

허균영

편집이사

김종성

이윤실

홍보이사

신진명

이덕중

대학 · 청년이사

양진화

조재완

특임이사

박문규

한국원자력학회 원자력이슈 및 소통위원회 위원

위원장


백원필

당연직 위원


권태순


김균태


김민환


김창회


문명국


신안동


신진명


이덕중


이도환


이동원


이은기


이희석


장창희


장희승


정범진


차완식

임명직 위원


강경호


김동산


김민규


김성중


김신환


김인구


김찬수


김희령


남효온


노동석


문주현

박동희


박수용


박진백


신동호


심형진


안호선


양진화


유동인


윤종일


이광석


이승준


이정호

이종호


이찬복

이현철

임인철

정용훈

정재준

조재완

조형규

주한규

하광순

한국원자력학회 편집위원회 위원

위원장


나만균

국내 부위원장


선광민


양재호


조형규

국외 부위원장


Shinya Nagasaki


Won Sik Yang


Xu Cheng

국내 위원


권준현


김용균


김용민


김용희


김윤재


김인규


김종성


신형기


윤종일


이덕중


이동원


이윤실


임호곤


정범진

국외 위원


Akio Gofuku


Belle R. Upadhyaya


Dominique Bestion


Elia Merzari


Guanghui Su


Jean Noirot


John C. Jin

한국원자력학회 연구부회장/차기연구부회장 · 지부장

연구부회장/차기연구부회장

원자로시스템기술


김민환


이태호

방사선 방호


이희석


김희령

원자로물리 및 계산과학


이은기


홍서기

방사선 이용 및 기기


문명국

원자력시설해체 및 방사성폐기물관리


차완식


임상호

양자공학 및 핵융합기술


이동원


권혁중

핵연료 및 원자력재료


장창희


양재호

원전건설 및 운영기술


이도환


류정수

원자력열수력


권태순


윤병조

원자력정책, 인력 및 협력


정범진


임채영

원자력 안전


김균태


박현선

원자력계측제어, 인간공학 및 자동원격


김창회


김종현

국내외 지부장

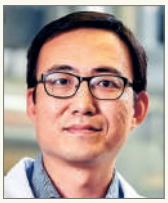

송종순
광주/전남/전북 지부


이상훈
대구/경북 지부


윤병조
부산/울산/경남 지부


강현국
미국 지부

UAE 지부


임 준
IAEA/Europe 지부

청년지부


박재영 지부장

여성지부


엄영랑 지부장

학생지부


이지현 지부장


이유호 지도교수

한국원자력학회 포상 및 장학위원회 위원/사무국

위원장

남요식

사무총장

남장수

위원

김교윤

김응수

김진원

김태룡

박범서

양진화

어근선

윤종일

이은기

이희범

임채준

정윤선

조재완

채수열

허균영

실장

민현정

팀장

송지현

대리

이연화

대리

유진원

개회식 및 초청강연 / 학생학술경진대회 일정

| 일 시 2022년 5월 19일(목) 16:00 ~ 18:00
| 장 소 한라홀 (3F)

구 분	프로그램
개회식 및 초청강연	[사회 : 허균영 학술이사]
	장내안내 및 국민의례
	한국원자력학회의 지난 5년간의 기록(2017~2022) 영상 상영
	개회사 : 정동욱 학회장
	축 사 : 김영식 국회의원(과학방송통신위원회)
	초청강연 : 조환익 유니슨주식회사 회장 (전, 한국전력공사 사장) **원자력 시대의 전망과 과제 – 새 정부의 새로운 원자력 비전과 과제**
	2021 추계학술발표회 우수논문상 시상 2022년도 한국원자력학회 장학증서 수여
학생학술 경진대회	[사회 : 양진화 대학청년이사]
	학생학술경진대회 및 현장투표

만찬 행사 일정

| 일 시 2022년 5월 19일(목) 18:00 ~ 19:30
| 장 소 탐라홀 (5F)

구 분	프로그램
만 찬	[사회 : 신동호 총무이사]
	장내 안내말씀
	학생학술경진대회 영상 상영
	연구부회별 우수포스터 논문 명단 공개
	학생학술경진대회 결과 발표 및 시상식
	경품권 추첨 행사 **[경품 협찬 특별회원]** ㈜미래와 도전, 삼성물산㈜–건설부문, 한국수력원자력㈜, 한국원자력연구원, 한국원자력의학원, 한국원자력환경공단, 한국전력기술㈜, 한국핵융합에너지연구원, 한전원자력연료㈜

초청강연

| 일 시 2022년 5월 19일(목) 16:00 **| 장 소** 한라홀(3F)

조 환 익

유니슨주식회사 회장
전, 한국전력공사 사장

원자력 시대의 전망과 과제

- 새 정부의 새로운 원자력 비전과 과제

신정부 들어서 전 정부의 탈원전 정책은 폐기되었다. 그러나 원전 없이는 불가능하지만, 원전만으로도 복잡한 에너지 문제를 해결할 수 없다.

새 정부의 새로운 원전 '비전'과 '과제'는 기본적으로 '성찰'과 '복원'에 있다고 본다. 왜 탈원전 정책이 5년간 원전 생태계를 초토화시키고 간 것인지, 또 원전 만능주의와 원전 수용성 등에서 성찰해야 될 것은 없는지를 먼저 돌아봐야 할 것이다. 새로운 과제도 여기에서 찾아야 되고, 특히 재생에너지와의 동반자 관계를 모색해야 될 것이다. 경제성과 수용성 면에서 분명한 보합 관계가 있고, 탈탄소의 양대 축으로 역할 분담도 있어야 될 것이다.

또한 SMR 등 중소형 원자로 사업과 원전 고열을 이용한 핑크수소의 생산 등 원전 사업 영역의 다각화도 시급하다. 고준위 방사성 폐기물의 중간 및 연구 저장시설 건설에 관해서도 앞으로 수년간 치열한 공론화의 과정을 거쳐 녹색에너지로의 수용성을 높일 수 있도록 새 정부가 가시적 성과를 내기 바란다.

아울러 장기간 중단되고 있는 원전 수출도 추진 체제의 재정립, 한미간 협력 등 전반적으로 재검토해서 러시아, 중국 등에 대한 불신이 고조되는 가운데에서 새로운 기회를 찾아야 한다. 이러한 모든 과정에서 원자력 학계, 업계 및 연구계와 한전, 한수원이 One Team이 되어야 함은 물론이다.

2022 춘계학술발표회 수상자 명단

| 시상식 2022년 5월 19일(목) 16:00
| 장 소 한라홀 (3F)

학술발표회 우수논문상 (2021 추계학술발표회 발표논문)

성 명	소 속
김병관	포항공과대학교
김승현	중앙대학교
박장근	서울대학교
서주형	울산과학기술원
안무영	한국핵융합에너지연구원
이건형	한양대학교
이민선	한국원자력연구원
이상훈	한국원자력안전기술원
이성현	한국원자력연구원
장상훈	서울대학교
정용훈	한국원자력연구원
허웅	한국과학기술원

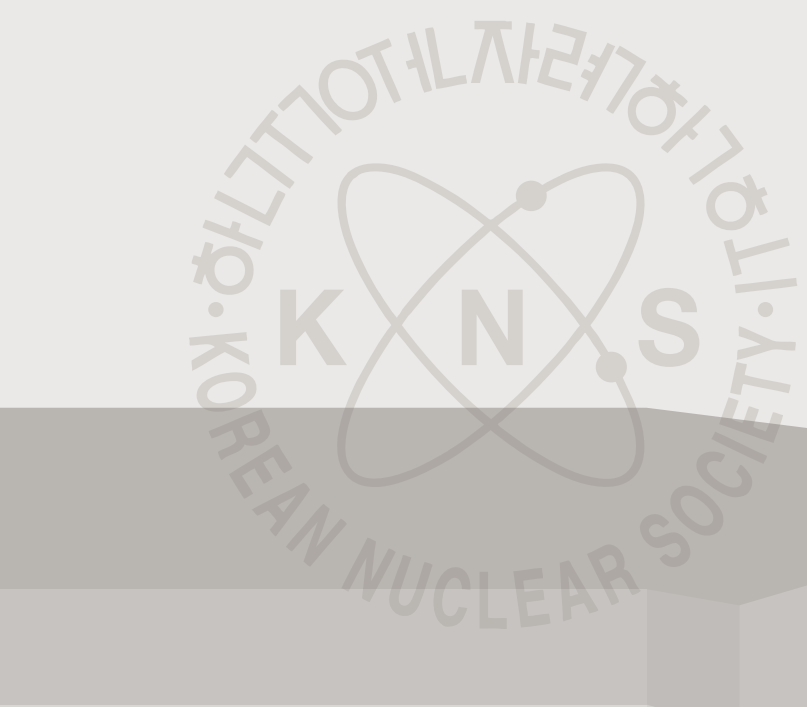
2022년도 한국원자력학회 장학생

학 교 명	성 명
경북대학교	이다영
경희대학교	우한상, 이지현, 이상혁
동국대학교	김찬우, 전상준
부산대학교	박소명, 김도현
서울대학교	이주욱, 윤지원, 허민제
세종대학교	이수혁, 김지혁
울산과학기술원	김 건, 안정수
제주대학교	김승현, 좌종헌
조선대학교	조유성, 최우석, 박지훈
중앙대학교	송균섭, 오종석
포항공과대학교	Mahdi Bakhtiari
한국과학기술원	박지혜, 손인우
한양대학교	조성현, 김재효, 백정민
한전 국제원자력대학원대학교	Jan Hruškovič

KOREAN NUCLEAR SOCIETY

KNS 2022 Spring
춘계학술발표회

Workshop



윤석열 시대 – 원자력 전망과 과제, 그리고 학회의 역할

| 일시 · 장소 2022년 5월 18일(수) 14:00~17:25 · 제주국제컨벤션센터, 3층 한라홀A
| 주최 한국원자력학회

윤석열 정부는 원자력의 역할을 확대하는 방향으로 전망됩니다. 따라서 문재인 정부에서는 원자력 생태계의 유지가 원자력계의 관건이었으나 윤석열 정부에서는 원자력 산업과 연구를 어떻게 도약시켜 다가오는 탄소중립 시대에 국민의 에너지로서 인정받고 국제무대에서도 우리 원자력 기술의 위상을 확보하는 것이 관건이 될 것으로 봅니다. 학회의 역할 또한 지난 5년간 탈원전 극복에 초점이 있었다면 앞으로는 본연의 역할에 초점을 두되 탈원전을 교훈 삼아 활동 방향을 잡아야 할 것으로 봅니다. 이에 이번 춘계학술발표회에서 학회 회원 여러분과 윤석열 시대에 원자력계의 앞날을 전망하고 해결해야 할 과제와 이를 위한 학회의 역할 및 어떤 변화가 필요할 지에 대해 논하는 자리를 만들었습니다. 많은 참여와 관심을 당부합니다.

일 정	내 용	
13:30~14:00	등 록	
		사회 : 김희령 대변인 (UNIST)
14:00~14:05	장내 안내말씀	
14:05~14:10	인사말, 정동욱 학회장 (중앙대학교)	
14:10~14:30	발 제	• 원자력산업 전망과 과제 및 학회의 역할, 남요식 부회장 (한수원㈜)
14:30~14:50		• 원자력 기술개발 전망과 과제 및 학회의 역할, 이기복 부회장 (KAERI)
14:50~15:10		• 원자력에 대한 국민인식과 학회의 역할, 최성민 부회장 (KAIST)
15:10~15:30		• 학회 역할의 변화 필요성과 역할 강화 방안, 설광원 부회장 (KINS)
15:30~15:45	휴 식	
15:45~17:15	패널토론	• 좌장 : 이찬복 고급정책연구소장 (KAERI) • 김종두 전무 (두산에너빌리티) • 박상덕 수석연구위원 (서울대학교 원자력미래기술정책연구소) • 박윤원 회장 (대전과총) • 정용훈 교수 (KAIST))
17:15~17:25	맺음말, 정동욱 학회장 (중앙대학교)	

| 기타사항 – 등록비 무료(식사 제공 없음)
– 문의처 : 한국원자력학회 사무국 / 042–826–2614, 2677 / kns2613@kns.org

A

국내외 소형모듈원자로(SMR) 기술개발사업 현황

| **일시 · 장소** 2022년 5월 18일(수) 14:00~17:20 · 제주국제컨벤션센터, 2층 202호
| **주최** 한국원자력학회 원자로시스템기술 연구부회

일 정	내 용
14:00~14:10	개회사, 정동욱 (학회장, 중앙대학교)
14:10~14:30	SMR 인허가를 위한 초기 고려사항, 설광원 (KINS)
14:30~14:50	SMR 개발에 따른 원자력통제 측면의 규제대응, 조성연 (KINAC)
14:50~15:10	i-SMR 기술개발사업 현황 및 계획, 이도환 (KHNP)
15:10~15:30	i-SMR 혁신형 핵연료 및 무붕산 운전, 장도익 (KEPCO NF)
15:30~15:50	Break Time
15:50~16:10	i-SMR 탄력운전, 강한옥 (KAERI)
16:10~16:30	고온가스로 개발 및 상용화, 이상일 (현대엔지니어링)
16:30~16:50	Small and Micro Modular Reactor Activities in Emerging and Advanced Nuclear Markets, Erol BICER (FNC)
16:50~17:20	질의/답변

| **기타사항** – 등록비 : 무료 / 석식 제공 없음
– 문의처 : 강한옥 / 한국원자력연구원 / 042-868-2758 / hanokang@karei.re.kr

B

최신 원자로물리 기술 개발 현황

| **일시 · 장소** 2022년 5월 18일(수) 13:30~18:00 · 제주국제컨벤션센터, 4층 402호
| **주최** 한국원자력학회 원자로물리 및 계산과학 연구부회, 한수원 중앙연구원

일 정	내 용
13:30~14:00	등 록
14:00~14:10	개회사, 이은기 (연구부회장, KHNP)
14:10~14:40	GPU 기반 전 노심 몬테칼로 코드(PRAGMA) 개발 현황, 최남재 (서울대)
14:40~15:10	경수로 이용 코발트-60 생산 및 노심안전성 평가, 이해찬 (KNF)
15:10~15:40	평가핵자료집 의존 ICSBEP 임계도 벤치마크 해석, 박호진 (KAERI/경희대)
15:40~16:00	휴식 및 기념촬영
16:00~16:30	디지털 트윈 기반의 노심 안전성 감시 기술 개발, 신호철 (KHNP)
16:30~17:00	신재생에너지와의 시너지를 위한 부하추종 운전기술, 김용희 (KAIST)
17:00~17:30	안전강화 및 혁신형 핵연료 적용을 위한 계산과학 기술, 양용식 (KAERI)
17:30~18:00	종합토의

| **기타사항** – 등록비 : 50,000원 / 석식 제공
– 문의처 : 신호철 / 한수원 중앙연구원 / 042-870-5330 / shin.hocheol@khnp.co.kr

C

사고저항성 핵연료: 단기 및 장기 전략

| **일시 · 장소** 2022년 5월 18일(수) 14:00~18:00 · 제주국제컨벤션센터, 2층 203호
| **주최** 한국원자력학회 핵연료 및 원자력재료 연구부회

일 정	내 용	
13:45~14:00	등 록	
14:00~14:05	개회사, 장창희 (연구부회장)	
	Part I : Coated ATF for Near Term Deployment	좌장 : 장창희 (KAIST)
14:05~14:25	원전 운영자 관점에서의 ATF 개발 방향 제언, 이종선 (한국수력원자력)	
14:25~14:45	KNF ATF용 Cr-coated 피복관 개발현황 및 상용화 계획, 장훈 (한전원자력연료)	
14:45~15:05	표면개질(coating, ODS) ATF 개발 현황, 김현길 (한국원자력연구원)	
15:05~15:25	Coated ATF 성능평가 및 설계기준 개발, 이유호 (서울대학교)	
15:25~15:45	ATF 관련 국내외 규제 이슈 및 현황, 이주석 (원자력안전기술원)	
15:45~16:00	휴 식	
	Part II : Advanced ATF for Long-term Application	좌장 : 이주석 (KINS)
16:00~16:20	Fe-기반 ATF 개발현황 – ADSS 성능평가, 장창희 (KAIST)	
16:20~16:40	FeCrAl 기반 ATF 피복관 연구개발 현황, 반치범 (부산대학교)	
16:40~17:00	SiC-기반 ATF 개발 현황, 김대종 (한국원자력연구원)	
17:00~17:20	무붕산 자율운전 소형원자로용 UO2-U3Si2 복합 핵연료, 안상준 (UNIST)	
17:20~17:40	KNF ATF용 소결체 개발현황, 임광영 (한전원자력연료)	
17:40~18:00	토의 및 마무리	

| **기타사항** – 등록비 : 30,000원 / 석식 제공
– 문의처 : KNF / 장훈박사 / 010-5139-3020 / janghoon@knfc.co.kr
KAIST / 장창희교수 / 010-2345-2215 / chjang@kaist.ac.kr

D

혁신형 원자로 열수력 연구 현황과 미래

| **일시 · 장소** 2022년 5월 18일(수) 14:00~18:00 · 제주국제컨벤션센터, 3층 한라홀 B
| **주최** 한국원자력학회 원자력 열수력 연구부회

일 정	내 용
13:30~14:00	등 록
14:00~14:10	개회사, 권태순 (연구부회장)
	session 1
14:10~14:40	혁신형 SMR 운전 및 안전계통 성능검증 실험 연구 현황 및 계획, 강경호 (KAERI)
14:40~15:10	원자력 활용을 위한 히트파이프 열수력 연구개발 동향, 방인철 (UNIST)
15:10~15:40	소형모듈형원자로(SMR) 설계특성 관련 규제기술 개발 방향, 김동열 (KINS)
15:40~16:00	Coffee Break
	session 2
16:00~16:30	가동원전/SMR 다물리 통합 해석 플랫폼 개발 현황 및 향후 계획, 조윤제 (KAERI)
16:30~17:00	열수력 계통해석 코드 연구개발 현황 및 향후 계획, 이승욱 (KAERI)
17:00~17:30	혁신형 SMR 열수력 현안과 학계의 역할, 김성중 (한양대)
17:30~18:00	폐회 및 안내
18:00~	저녁 식사

| **기타사항** – 등록비 : 50,000원 / 석식 제공
– 문의처 : 배성원 / KAERI / 010-8233-2840 / bswon@kaeri.re.kr

E

중대사고 현안해결 로드맵 개발 현황

| **일시 · 장소** 2022년 5월 18일(수) 14:00~17:30 · 제주국제컨벤션센터, 2층 201호
| **주최** 한국원자력학회 원자력안전 연구부회

일 정	내 용
14:00~14:10	인사말, 김균태 (안전연구부회장)
14:10~14:30	중대사고 현안해결 로드맵 작성 특별위원회 활동 개요, 하광순 (한국원자력연구원), 이윤희 (한국원자력안전기술원)
14:30~15:00	중대사고 현안해결 로드맵 작성 현황 – 일차계통거동분과, 배준호 (한국원자력연구원), 임국희 (한국원자력안전기술원)
15:00~15:30	중대사고 현안해결 로드맵 작성 현황 – 격납건물거동분과, 김성중 (한양대학교), 나영수 (한국원자력연구원)
15:30~16:00	중대사고 현안해결 로드맵 작성 현황 – 핵분열생성물 거동분과, 윤종일 (KAIST), 김성일 (한국원자력연구원)
16:00~16:30	휴 식
16:30~17:30	종합 토의(작성 로드맵 질의 응답 및 활용 방안)

| **기타사항** – 등록비 : 50,000원 / 만찬 없음
– 문의처 : 김성일 / 한국원자력연구원 / 042–866–6103 / sikim@kaeri.re.kr
이윤희 / 한국원자력안전기술원 / 042–603–3019 / yooney@kins.re.kr

F

난치암 극복을 위한 방사선의 · 생명기술의 미래와 발전전략
– 포스트코로나시대, 방사선의학의 미래를 말한다. –

| **일시 · 장소** 2022년 5월 18일(수) 14:00~18:00 · 제주국제컨벤션센터, 3층 301호
| **주최** 한국원자력학회 방사선방호연구부회, 한국원자력의학원 전략기획실
| **방송** 실시간 온라인 YouTube 채널로 송출(예정)

일 정	내 용
14:00~14:10	개회사, 박종훈 (한국원자력의학원), 이희석 (방사선방호연구부 회장) ※ 사회 : 이진경 (한국원자력의학원)
제1부 방사선의 · 생명기술 정책과 사례, 좌장 : 이희석 (포항공대)	
14:10~14:30	(정책) 미래헬스케어를 선도하는 방사선기술개발사업, 김용균 (한양대학교) ※ 제3차 방사선기술진흥정책 및 관련 기술 중심
14:30~14:45	(기반) 국내 방사선기반 시설현황 및 의 · 생명산업 활용방안, 강상묵 (한국방사선진흥협회)
14:45~15:00	(실증) 방사성의약품 전문기업의 시작과 미래, 길희섭 (㈜퓨쳐켐)
15:00~15:10	질의응답
15:10~15:30	기념 촬영 및 휴식
제2부 난치질환 극복 미래기술, 좌장 : 최승진 (방사선보건원)	
15:30~15:45	(입자) 가속입자로 암을 치료한다, 박종민 (서울대학교병원)
15:45~16:00	(병용) 암환자맞춤치료의 길을 넓히다, 박인철 (한국원자력의학원)
16:00~16:15	(신약) 국내 신약개발의 속도를 높인다, 김경민 (국가RI신약센터)
16:15~16:30	(인체) 방사선인체영향연구로 안전을 높인다, 장원일 (국가방사선비상진료센터)
제3부 전문가 토의 및 발전전략	
16:30~17:30	※ 발제자 : 이진경 (한국원자력의학원) ※ 지정토론자(예정) : 박종훈 (한국원자력의학원 원장), 김성은 (방사선보건원 원장), 박인철 (한국원자력의학원 연구소장), 차상훈 (오송첨단의료산업진흥재단 이사장), 박상일 (동남권원자력의학원 원장), 박선후 (국가방사선비상진료센터 센터장), 지대윤 (㈜퓨쳐켐 대표), 이규만 (한국방사선진흥협회 부회장), 임상무 (국가RI신약센터 센터장), 우홍균 (대한방사선종양학회 회장), 이희석 (방사선방호연구부 회장), 이교철 (대한방사성의약품학회 회장) 등
17:30~	실무자 회의(기관 협력안 등, COVID 방역 규칙 준수)

| **기타사항** – 등록비 : 50,000원 / 석식제공 없음
– 문의처 : 박종국 / 한국원자력의학원 / 010–6305–3888 / jkpark@kirams.re.kr
김정영 / 한국원자력의학원 / 010–9073–8387 / jykim@kirams.re.kr

G

원전 기기 내진 해석 및 설계기준초과지진 평가 워크숍
※ 비공개

| 일시 · 장소 2022년 5월 18일(수) 14:00~18:00 · 제주국제컨벤션센터, 3층 삼다홀B
| 주최 한국원자력학회 원전건설 및 운영기술 연구부회

일 정	내 용
14:00~14:10	등 록
14:10~14:15	개회사, 이도환 (한수원 중앙연구원)
14:15~14:35	핵연료집합체 내진해석 및 평가 기술개발 현황, 김태순 (한수원 중앙연구원)
14:35~15:00	핵연료집합체 탄성 및 비탄성 내진해석 평가방법론 개발, 김철우 (한국전력기술)
15:00~15:25	시험을 통한 설계초과지진 하중 하의 배관 손상거동 평가 연구, 김진원 (조선대학교)
15:25~15:50	원자력발전소 구조물의 비선형 해석과 적용 방안, 문일환 (한국전력기술)
15:50~16:10	Coffee Break
16:10~16:35	원전 기기 유한요소 탄소성 지진해석 지침, 김종성 (세종대학교)
16:35~17:00	원전 핵연료집합체 지진취약도 평가기술 개발 현황, 김민규 (한국원자력연구원)
17:00~17:25	노심 내진 해석용 비선형 핵연료 모델 개발, 박남규 (한전원자력연료)
17:25~17:50	지진조건을 고려한 제어봉 낙하 모사를 위한 수치모델 개발, 임대근 (KAIST)
17:50~18:00	Wrap Up

| 기타사항 – 등록비 : 무료 / 석식제공 없음
– 문의처 : 김태순 / 한국수력원자력㈜ 중앙연구원 / 042–870–5452, 010–8781–8752 / taesoon.kim@khnp.co.kr

H

원자력안전규제 분야 대학교육 강화 및 원자력분야 취업률 제고를 위한 교육협력 방안

| 일시 · 장소 2022년 5월 18일(수) 14:00~17:30 · 제주국제컨벤션센터, 3층 삼다홀A
| 주최 한국원자력학회 원자력 정책, 인력 및 협력 연구부회
| 주관 한국원자력안전재단 원자력안전정책센터, 한국원자력학회 산학연계 TF

일 정	내 용
14:00~14:10	개회 및 프로그램 소개, 김성욱 (한국원자력안전재단)
14:10~14:30	원자력안전규제 분야 대학교육 강화를 위한 원자력안전 사전실습 교육강화 사업의 추진배경과 성과, 이동욱 (한국원자력안전재단)
14:30~15:40	패널토론 이동욱 (좌장, 한국원자력안전재단), 허균영 (경희대), 김용민 (대구가톨릭대), 심형진 (서울대), 민병주 (울산과학기술원), 정운관 (조선대), 조규성 (한국과학기술원), 홍서기 (한양대), 사업 참여 학생 (미정)
15:40~15:50	질의응답 및 토의, 참석자 전체
15:50~16:00	휴 식
16:00~16:10	산학연계 TF 활동 소개, 남요식 (한국원자력학회 부회장)
16:10~16:30	원자력산업계 사업 및 기술개발 방향에 부합하는 인재육성 제언, 김용수 (한국수력원자력㈜)
16:30~16:50	국내 원자력 유관기관에서 운영중인 취업역량 강화 프로그램 소개, 정원표 (한국원자력협력재단)
16:50~17:10	원자력산업계 인력채용 현황 검토 및 취업률 제고를 위한 제언, 김진원 (조선대학교)
17:10~17:30	질의응답 및 토의, 참석자 전체

| 기타사항 – 등록비 : 무료 / 석식 미제공
– 문의처 : 김성욱 / 한국원자력안전재단 / 031–626–2245 / ksw@kofons.or.kr
이진오 / 한국원자력안전재단 / 031–626–8822 / ljo@kofons.or.kr
김진원 / 조선대학교 / 062–230–7109 / jwkim@chosun.ac.kr

I

원전 안전성 향상을 위한 AI 기반 계측제어기술

| **일시 · 장소** 2022년 5월 18일(수) 14:00~18:00 · 제주국제컨벤션센터, 4층, 401호
| **주최** 한국원자력학회 원자력계측제어, 인간공학 및 자동원격 연구부회

일 정	내 용
14:00~14:10	개회사, 김창회 (한국원자력연구원)
14:10~14:35	AI 기반 인적오류방지 의사결정 지원 기반기술, 구서룡 (한국원자력연구원)
14:35~15:00	원전 사이버위협 탐지 및 대처기술, 손광섭 (한국원자력연구원)
15:00~15:25	AI 기반 딥러닝 핵종 판별기술, 권인용 (한국원자력연구원)
15:25~15:50	딥러닝 알고리즘 구동을 위한 전용 프로세서 설계, 전동석 (서울대)
15:50~16:10	휴 식
16:10~16:35	자율운전 SMR을 위한 요소기술 개발, 김종현 (조선대)
16:35~17:00	인공지능을 이용한 동적 비상운전절차서 개발, 이승준 (울산과기대)
17:00~17:25	AI 기반 디지털 계측제어계통 손상진단 기술, 김창회 (한국원자력연구원)
17:25~17:50	XAI (Explainable AI)를 이용한 원전 사고진단 기술, 나만균 (조선대)
17:50~18:00	Wrap-up
18:30~	만 찬

| **기타사항** – 등록비 : 50,000원(만찬 제공)
– 문의처 : 김창회 / 한국원자력연구원 / 010-4412-2251 / chkim2@kaeri.re.kr
장통일 / 한국원자력연구원 / 010-6284-4028 / tijang@kaeri.re.kr

J

사용후핵연료 관리전략과 소통
(부제 : 다자시점으로 소통전략을 보다!)

| **일시 · 장소** 2022년 5월 18일(수) 13:50~17:00 · 제주국제컨벤션센터, 3층 303 호
| **주최** 한국원자력학회 여성지부, WIN Korea (공동워크숍)

일 정	내 용	
13:20~13:50	등 록	
13:50~14:10	개회사 환영사 1 환영사 2 축 사	사회 : 이귀림 (한국원자력연구원) 백원필 (한국원자력학회 수석부회장) 남영미 (WiN KOREA 회장) 강문자 (한국방사성폐기물학회 회장)
14:10~14:40	사용후핵연료 관리기술개발과 국민이해증진 방안	김경수 (사용후핵연료관리핵심기술개발사업단 단장)
14:40~15:10	원자력소통 교훈을 통한 사용후핵연료 국민수용성 예측	한은옥 (한국원자력안전아카데미 전문위원)
15:10~15:40	사용후핵연료 관리정책에 관한 지역주민 소통의 허와 실	김경희 (환경운동실천협의회 사무총장)
15:40~16:20	패널토론 및 질의응답 패널 : 김경수, 한은옥, 김경희	사회 : 김지희 (한국원자력연구원)
16:20~16:35	Coffee Break	
16:35~17:00	여성지부 – WiN Korea 네트워킹	

| **기타사항** – 주제 발표 중 질의응답을 받지 않습니다.
모든 질문은 패널토론 시간을 이용해 주세요.
– 등록비 무료 (만찬 없음)
– 문의처 : 김종선 / WIN Korea / 042-866-4201 / wink@winkorea.or.kr
이귀림 / 한국원자력연구원 / 010-3049-0479 / kllee@kaeri.re.kr

K

원자력 대학원생 및 신진연구자를 위한 역량강화 워크숍

| **일시 · 장소** 2022년 5월 18일(수) 14:00~18:00 · 제주국제컨벤션센터, 3층 302호
| **주최** 한국원자력학회 청년지부

일 정	내 용
14:00~14:10	청년지부 소개, 박재영 (울산과학기술원)
14:10~15:00	원자력 신진연구자를 위한 우리말 글쓰기, 문주현 (단국대학교)
15:00~15:50	대학원생 및 신진연구자 스트레스 관리, 차미애 (울산과학기술원 헬스케어센터)
15:50~16:10	휴식 시간
16:10~16:30	효과적인 저널 논문 작성법, 최은영 (한국원자력연구원)
16:30~16:50	영문 CV 작성법, 최성열 (서울대학교)
16:50~17:10	대학원생 때 알았더라면 좋았을 것들, 이지민 (울산과학기술원)

| **기타사항** – 등록비 : 무료 / 석식 미제공
– 문의처 : 박재영 / 울산과학기술원 / 010–8778–2557 / jypark@unist.ac.kr

M

사용후핵연료 관리 기술개발 현황 및 추진 방향

| **일시 · 장소** 2022년 5월 18일(수) 14:00~18:00 · 제주국제컨벤션센터 3층 300호
| **주최** 한국원자력학회 원자력시설 해체 및 방사성폐기물 관리 연구부회

일 정	내 용
13:30	접 수
14:00~14:10	인사말, 정동욱 (원자력학회장)
14:10~14:40	사용후핵연료 관리 분야 연구개발 현황 및 추진 방향, 구정회 (KAERI)
14:40~15:10	사용후핵연료 운반 · 저장 현황 및 개선 방향, 최득기 (KHNP)
15:10~15:20	휴 식
15:20~15:50	사용후핵연료 처분 기술개발 현황 및 추진 방향, 조동건 (KAERI)
15:50~16:20	사용후핵연료 처리 기술개발 현황 및 추진 방향, 류재수 (KAERI)
16:20~16:50	사용후핵연료 대안처분 기술개발 현황 및 추진 방향 (Deep Isolation)
16:50~17:00	휴 식
17:00~17:30	사용후핵연료 관리 규제기준 현황 및 추진 방향, 정승영 (KINS)
17:30~18:00	종합토의 (추가 Q&A 및 토의)

| **기타사항** – 워크샵 진행 : 초청전문가 20분 발표 및 10분 질의 / 응답
– 등록비 : 무료 / 만찬 없음.
– 문의처 : 임상호 / 한국원자력연구원 / 042–868–2105 / slim@kaeri.re.kr
류재수 / 한국원자력연구원 / 042–868–8136 / lucky@kaeri.re.kr

www.kns.org

분과별 논제 및 발표자

제1분과 원자로시스템기술 (Reactor System Technology)

1A
5. 19 (목)

중소형경수로 및 중수로 (Small and Medium Pressurized Water Reactor and Heavy Water Reactor)

| 좌장 문주형(Joo Hyung Moon), 정종엽(Jong Yeob Jung) | 발표장소 303호

13:10 Development of Phenomena Identification and Ranking Table (PIRT) of Thermal-Hydraulic Phenomena for SMART100-DECs to Implement T-H Model and Validation Items in SPACE
Eslam Bali and Sultan Al–Faifi(KACARE), Kyung Doo Kim(KAERI)

13:30 Comparison of Core Design Parameters for BANDI-60 Using UO_2 and U-Mo Fuels
Dokyun Kim and Hyung Jin Shim(SNU), Jong Tae Seo(KEPCO E&C)

13:50 Study on Optimization of IV-CEDM Coil Assembly
Jiseung Moon, Jinseok Park, and Jongmin Kim(KEPCO E&C)

14:10 Design Concepts and Requirements of Passive Molten Salt Fast Reactor (PMFR)
Jae Hyung Park, Wonjun Choi, Jihun Lim, Taeseok Kim, Sangtae Kim, and Sung Joong Kim(HYU), Yonghee Kim(KAIST), Youngsoo Yoon(Gachon Univ.)

14:30 Coffee Break

14:50 Comparison of Truly Optimized PWR Lattice Designs for Natural Circulation Reactor
Steven Wijaya and Yonghee Kim(KAIST)

15:10 Preliminary Study of Conceptual Design of Passive Residual Heat Removal System for PMFR Safety
Jihun Lim, JeaHyung Park, and Sung Joong Kim(HYU), Yonghee Kim(KAIST)

15:30 Dimensional Change in Double Melt Zr-2.5%Nb CANDU Pressure Tube Material by Aging Treatment up to 20kH at 300-400℃
SungSoo KIm, Jong Yeop Jung, and Hyung Sub Kim(KAERI), Young Suk Kim(MacTec)

15:50 Research Status on the Safety Issues for Aged Pressure Tubes in PHWR
JONG YEOB JUNG(KAERI)

1B
5. 20 (금)

액체금속로 및 고온가스냉각로 (Liquid Metal Reactor and High–Temperature Gas–cooled Reactor)

| 좌장 김대희(Dehee Kim), 박병하(Byung Ha Park) | 발표장소 303호

09:00 DHRS Performance Test Results of STELLA-2 and Comparison with MARS-LMR Analysis
Jewhan Lee, Yong–Bum Lee, Byeongyeon Kim, and Jung Yoon(KAERI)

09:20 Numerical Approach for Tritium Release in the Very High Temperature System Core
Sung Nam Lee, Sung Hoon Choi, and Chan Soo Kim(KAERI)

09:40 Design of Heat Pipe Radiator for Thermal Management System in Space Nuclear Reactor
Ye Yeong Park and In Cheol Bang(UNIST), Chan Soo Kim(KAERI)

10:00 Improvement of Phit-f k-ε Turbulence Model for the Prediction of Heat Transfer Phenomena Inside an Air-cooled RCCS Riser using OpenFOAM
Sin–Yeob Kim and Chan–Soo Kim(KAERI), Hyoung Kyu Cho(SNU)

10:20 An Effect of a Barrier for Reducing a Safety Distance around a Hydrogen Energy Facility
Hyung Seok Kang, Sang Min Kim, and Jontae Kim(KAERI)

10:40 Coffee Break

11:00 A Study on the Operation Method of High-temperature Solid Oxide Electrolysis(SOEC) using Nuclear Power and Waste Heat
Sanghyeok Lee, JinSoo Ahn, and Byeong Geun Seong(RIST)

11:20 A 30 kW High Temperature Electrolysis Experimental Facility for Nuclear Hydrogen Production
Byung Ha Park, Ho Sik Kim, SungDeok Hong, and ChanSoo Kim(KAERI)

1C
5. 19 (목) – 20 (금)

가압경수로, 고온가스냉각로 (Pressurized Water Reactor and High–Temperature Gas–cooled Reactor) – POSTER

| 좌장 이장원(Jang Won Lee), 이성남(Sung Nam Lee) **| 발표장소** 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

PO1C01 Discharge Transient Simulation of Compressed CO_2 Energy Storage
Yongju Jeong, Yong Jae Chae, and Jeong Ik Lee(KAIST)

PO1C02 French Regulation and Fow-induced Vibration Issues for Steam Generator Design Qualification
Kanghee Lee, Heungseok Kang, Dongseok Oh, Taehyun Chun, Iksung Lim, and Chan Lee(KAERI)

PO1C03 Methodology for Generating Single Spectrum Considering Height of Reactor Coolant System
Eun–ho Lee and No–Cheol Park(Yonsei Univ.)

PO1C04 A Study on Liquid Air Energy Storage System Coupled With Liquid Hydrogen and LNG Regasification Process for Enhancing Round-trip Efficiency
Jung Hwan Park and Jeong Ik Lee(KAIST)

PO1C05 A Review of Licensing Considerations for Changes of NPP due to NRHES Installation from a Nuclear Safety Perspective
Young Seok Bang and Youngsuk Bang(FNC Tech.)

PO1C06 Analysis of Changes in LAES Round Trip Efficiency According to the Number of Turbines and Compressors
Hak beom Lee and Jung ik Lee(KAIST)

PO1C07 Economic Analysis of Liquid CO_2 Energy Storage System Integrated to a Conventional PWR
Yong Jae Chae and Jeong Ik Lee(KAIST)

PO1C08 Homologous Curve Generation for SMR Reactor Coolant Pump using CFD
Jaeho Jung, Byeonggeon Bae, and Je Yong Yu(KAERI)

PO1C09 Conceptual Neutronic Simulation in Westinghouse Small Modular Reactor with TRU Fuel
KEONIL CHA and CHANGJE PARK(Sejong Univ.)

PO1C10 Development of Quality Assurance Automation Procedures for MULTID Component in MARS-KS Code
Jae Soon Kim, Andong Shin, and Kyung–Won Lee(KINS)

PO1C11 Preliminary Evaluation of Core Monitoring Performance of TM-ICI for Soluble-Boron-Free Small Modular Reactor
Gyu–Ri Bae(KHNP), YuGwon Jo(KHNP), and HoCheol Shin(KHNP)

PO1C12 Lessons of Learn from Development of NuScale NPP for Successful Standard Design Certification of i-SMR
Hyuk Kwon, Soyoung Kim, and Han–ok Kang(KAERI)

PO1C13 Preliminary Conceptual Designs of Various RV-SGV Assemblies for the Innovative Next Generation SMART Plus
Joo Hyung Moon, Hyunjun Cho, Kwanghyun Ahn, and Kang Heon Lee(KAERI),
Abdulrahman Altayeb and Mazen Bushnag(KACARE)

PO1C14 System Modeling of KAIST S-CO_2 ABC Test Loop
Jeong Yeol Baek, Jae Jun Lee, and Jeong Ik Lee(KAIST)

PO1C15 Investigation of High Back-sweep Angle Effect on Supercritical CO_2 Power System Compressor
Gi Hyeon Kim and Jeong Ik Lee(KAIST)

PO1C16 Experimental Approach to Measure Windage Loss in Supercritical CO_2 Condition
Dokyu Kim, Yongju Jeong, In Woo Son, and Jeong Ik Lee(KAIST)

PO1C17 Experiment and Analysis of Iodine Plate-out on the Stainless Steel Surface
SungDeok Hong, Nam–il Tak, JeongHun Lee, and EungSeon Kim(KAERI)

PO1C18 Preliminary Simulation of the Sodium Thermal Energy Storage Verification Test Facility with Modelica
Yong–Hoon Shin, Jung Yoon, Hyeonil Kim, and Jewhan Lee(KAERI)

1D
5. 19 (목) – 20 (금)

액체금속로, 연구용원자로 (Liquid Metal Reactor and Research Reactor) – POSTER

| 좌장 홍종간(Jonggan Hong), 서경우(Kyoungwoo Seo) **| 발표장소** 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

PO1D01 A Trade-off Study on Insulation Structure for High-Temperature Tank of Thermal Energy Storage Verification Test Facility
Jung Yoon, Hyeonil Kim, Yong–Hoon Shin, and Jewhan Lee(KAERI)

PO1D02 Preliminary Conceptual Design of In-Vessel Fuel Handling System in SALUS
Seok–Hoon Kim and Chang–Gyu Park(KAERI)

PO1D03 Basic Design of High-Temperature Sodium Thermal Energy Storage (TES) Verification Test Facility
Jewhan Lee, Jung Yoon, Yong–Hoon Shin, and Hyeonil Kim(KAERI)

PO1D04 Fluid-Solid Interaction Analysis Using a Coupling Library
Dehee Kim, Jinhaeng Lee, and Jonggan Hong(KAERI)

PO1D05 Design Feasibility Study on DHRS for 100MWe Long Fuel Cycle Sodium-cooled Fast Reactor
Ji–Woong Han, Dehee Kim, and Huee–Youl Ye(KAERI)

PO1D06 GAMMA+ Simulation of Sodium Experiments for Thermal Stratification in Upper Plenum of Sodium-Cooled Fast Reactors
Nam–il Tak, Hong Sik Lim, and Jonggan Hong(KAERI)

PO1D07 Preliminary Design of Primary Heat Transport System Pump in SFR with 3800 MWt
Yohan Jung, Jonggan Hong, and Jae–Hyuk Eoh(KAERI)

PO1D08 Development of Thermal- Hydraulic Analysis Model of a Once-Through Steam Generator in Modelica
Eui Kwang Kim, Huee–Youl Ye, and Jae–Hyuk Eoh(KAERI)

P01D09 Effect of Physical Vapor Deposition Parameters on Coating Roughness and Adhesive Force for Lead-cooled Fast Reactor Structure
Byeongju Kim, Taeyong Kim, and Ji Hyun Kim(UNIST)

P01D10 Pressure Test of Magnetostrictive Position Transmitter for Position Indicator of CEDM
Jihoon Lee, Tae–Won Na, and Je–Yong Yu(KAERI)

P01D11 Decay Tank Design in Research Reactor
Minkyu Jung and KyoungWoo Seo(KAERI)

P01D12 New Cobalt SPND Initial Sensitivity Calculation Model Based on SPGD Model for Monte-Carlo Simulation
Hyuk Han and Chang–Je Park(Sejong Univ.)

P01D13 Modeling and Validation of Pump Coast-down Flow for Research Reactor Application
In Guk Kim, Jaesik Kwak, Hyungi Yoon, Ki–Jung Park, Hong Beom Park, and Kyoung Woo Seo(KAERI)

P01D14 Modeling of Hybrid Micro Modular Reactor with GAMMA+ Code
Sungwook Choi, In Woo Son, and Jeong Ik Lee(KAIST)

P01D15 Code Comparison and Application for Designing Transfer Elevator
Hwanho Lee and Jinho Oh(KAERI)

P01D16 Concept of Liquid Air Energy Storage System Integrated Molten Salt Reactor
Seunghwan Oh, Jung Hwan Park, and Jeong Ik Lee(KAIST)

P01D17 Validation Calculations for Natural Circulation Core Cooling Experiments Simulating Loss of Normal Electric Power in Research Reactors
DongHyun Kim, Jong–Pil Park, Dongwook Jang, Youn–Gyu Jung, Su–Ki Park, and Cheol Park(KAERI)

P01D18 Structural Design of Pool Door for Research Reactor
Kwangsub Jung, Taejin Kim, and Jinho Oh(KAERI)

제2분과

원자로 물리 및 계산과학 (Reactor Physics and Computational Science)

2A
5. 19 (목)

원자로해석방법론 (Reactor Analysis Method)

| 좌장 박호진(Ho Jin Park), 육승수(Seungsu Yuk) | 발표장소 402호

09:00 Validation of the MCS Code using the SINBAD Benchmark
Xiaoyong Feng and Hyun Chul Lee(PNU), Deokjung Lee(UNIST)

09:20 Impact of Non-uniform Fuel Flow on Reactivity in a Molten Salt Reactor
Sungtaek Hong(KAERI), Seongdong Jang, Taesuk Oh, Eunhyug Lee, and Yonghee Kim(KAIST)

09:40 Development and Application of the Monte Carlo Continuous Energy Burnup Code
Mikolaj Oettingen and Jerzy Cetnar (AGH Univ.)

10:00 Modeling of Effective Delayed Neutron Fraction in the Monte Carlo iMC Code for Flowing Fuel Reactors
Inyup Kim, Tae–suk Oh, and Yonghee Kim(KAIST)

10:20 Fission Yield Correction for Simplified Xe-135 and Sm-149 Decay Chains
Taesuk Oh and Yonghee Kim(KAIST)

10:40 Coffee Break

11:00 Development of Point Kinetics Equation Considering Delayed Photoneutrons
Young In Kim and Hyung Jin Shim(SNU)

11:20 History Effect Treatment Methodology in Pin-by-pin Code NECP-Bamboo2.0
Sicheng Wang and Yonghee Kim(KAIST), Liangzhi Cao and Yunzhao Li(XJTU)

2B
5. 20 (금)

원자로물리 및 일반 (Reactor Analysis General)

| 좌장 이현철(Hyun Chul Lee), 이은기(Eun Ki Lee) | 발표장소 402호

09:00 Verification and Validation of the VANGARD GPU-based Pinwise Core Simulator Code
Seoyoon Jeon and Han Gyu Joo(SNU)

09:20 Transient Capability of the VANGARD GPU-based Pinwise Core Simulator Code
Seoyoon Jeon and Han Gyu Joo(SNU)

09:40 Effective and Mean Temperatures of a Cylindrical CSBA Loaded Fuel Pellet
Sunjoo Yoon and Yonghee Kim(KAIST)

10:00 Optimization of Two-batch Fuel Management in the Soluble-Boron-Free ATOM Core
Xuan Ha Nguyen, Steven Wijaya, and Yonghee Kim(KAIST)

10:20 Ultra Long Cycle MMLFR (Micro Modular Lead-cooled Fast Reactor) Cores using PWR Spent Fuel TRU
YuYeon Cho and Sergi Hong(HYU)

10:40 Coffee Break

11:00 LEU-based Molten Salt and Metal Reactor for Ultramicro Miniaturization
Eunhyug Lee, Taesuk Oh, Seongdong Jang, and Yonghee Kim(KAIST)

11:20 The Study for Modeling of Spray Droplet Shape in 3-Dimensional Condition
Seung Chan LEE(KHNP CRI)

2C

5. 19 (목) – 20 (금)

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

| 좌장 조유권(YuGwon Jo), 최남재(Namjae Choi) **| 발표장소** 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

P02C01 Bias Evaluations in McCARD Criticality Analysis for Low-enriched Uranium Thermal Critical Experiment Benchmarks
Ho Jin Park(KHU), Mohammad Alosiami(KACARE),
Sung Hoon Choi, Heejeong Jeong, Seungsu Yuk, and Yonghee Choi(KAERI)

P02C02 Development of Load Following Operation Tracer for SMR
Byeongmun Ahn, Kibeom Park, Jae Uk Seo, Tongkyu Park, and Sung–Kyun Zee(FNC Tech.)

P02C03 An Appropriate Application of Three-Step Method for Estimating Temperature Coefficient in CEFR Start-Up Test
Min Jae Lee, Jong Hyuck Won, Jiwon Choe, and Jae–Yong Lim(KAERI)

P02C04 Multi-Cycle Fuel Loading Patterns of an LWR Core for a Nuclear Desalination Plant
Jae–Seung Song, Hee Jeong Jeong, and Hyeok Kwon(KAERI)

P02C05 Concept of Advanced Core Optimizer in consideration of Load Following Operation with Simulated Annealing Algorithm
Kibeom Park, Byeong–hyeok Ha, Tongkyu Park, and Sung–Kyun Zee(FNC Tech.)

P02C06 Calculation of Effective Multiplication Factor by OpenMc and MCNP
Dong Hun Shin and Kyoon Ho Cha(Sejong Univ.)

P02C07 Comparison of REBUS-3 and McCARD Depletion Calculations on a Long-term Sustainable Small Modular Reactor, SALUS
MinJae Lee, JongHyuck Won, YoungIl Kim, Jiwon Choe, and Jae–Yong Lim(KAERI)

P02C08 Applicability Evaluation of Enriched Gadolinium as a Burnable Absorber in Assembly Level for Boron-Free i-SMR core
Jinsun Kim and Bum Hee Cho(KEPCO NF), Ser Gi Hong(HYU)

제3분과 원자력시설해체 및 방사성폐기물관리 (Nuclear Facility Decommissioning and Radioactive Waste Management)

3A 5. 19 (목) 원자력시설해체 및 방사성폐기물관리 1 (Nuclear Facility Decommissioning and Radioactive Waste Management 1)

| 좌장 박광헌(Kwangheon Park), 김기영(Kiyoung Kim) | 발표장소 303호

09:00 Spent Fuel Burnup Measurement Test by Gamma & Neutron Radiation Detection System
Yongdeog KIM, Kiyoung KIM, and Donghee LEE(KHNP CRI), Hyungkoo KIM(KEPCO NF), Sehyun Oh(USERS)

09:20 Validation of Decay Heat Estimation Capability of BESNA
Duy Long Ta and Ser Gi Hong(HYU), Dae Sik Yook and Bo Kyun Seo(KINS)

09:40 Stacking Test of Transport Package for Decommissioning Wastes of Nuclear Power Plant
Ju–Chan Lee, Jongmin Lim, Yun Young Yang, Jong–Bum Kim, and Jeong–Yong Park(KAERI)

10:00 Development of Source-term Estimation Model for Technical Criteria Regarding Decommissioning Wastes Recycling and Disposal
Hyungi Byun, Juyub Kim, Tae Bin Yoon, and Jae Won Park(FNC Tech.)

10:20 Suggestion of Contingency Application Criteria for Nuclear Power Plant Decommissioning Cost Estimation
Minhee Kim, Sanghwa Shin, and Chang–Lak Kim(KINGS)

10:40 Coffee Break

11:00 Application of Boron Credit Effect Methodology to Domestic Nuclear Power Plant
Kiyoung Kim, Donghee Lee, and Yongdeog Kim(KHNP), Yunsik Kim(KONES)

11:20 Evaluation of Boron Separation and Concentration Characteristics of Electrochemical Modules for Selective Removal of Boron from Nuclear Power Plants
SEONGJOO KANG, SANGWOOK LEE, JIHYUN KIM, MINHO KWAK, JEONGHEE LEE, and SEUNGIL KIM(eLIM Global)

11:40 Performance of Cold Sintered Zeolite 13X for Removing Cs+
Sujeong Lee and Ho Jin Ryu(KAIST)

12:00 Development of a Novel Bi0-rGO Composite with Enhanced Capture of Iodine Gas
Chee Tien Shee Ng Yuen Hing and Ho Jin Ryu(KAIST)

3B 5. 20 (금) 원자력시설해체 및 방사성폐기물관리 2 (Nuclear Facility Decommissioning and Radioactive Waste Management 2)

| 좌장 박재영(Jaeyeong Park), 차완식(Wansik Cha) | 발표장소 203호

09:00 Anodic Dissolution Behaviors of Inconel 600 in a Molten Salt System
Younghwan Jeon, Yulim Lee, Ugyu Jeong, and Jaeyeong Park(UNIST)

09:20 Modeling of Gas Flow in Cutting Kerf Using Computational Fluid Dynamics
Upendra Tuladhar and Seokyoung Ahn(PNU), Sang–Hyun Ahn and Dae–Won Cho(KIMM), Tae Hyung Na(KHNP)

09:40 Development of Automatic Waste Estimation Program for Decommissioning of NPPs
Chul–Kyu Lim, Hyeon–Sik Chang, Bong–Jin Ko, Seoung–Rae Kim, and Mi–Suk Jang(NESS),
Young–Suk Jung(Seojin Infraware)

10:00 How to Validation and Verification of Radiochemical Analytical Methods in the MIRACLE
Young–Ku Choi, Seungsu Shin, and Sojung Shim(NDRI)

10:20 Thermodynamic Database Development for the NaCl-UCl3-UCl4 System
TaeHyoung Kim and In–Ho Jung(SNU), Tae–Hyeong Kim and Jong–Yun Kim(KAERI)

10:40 Coffee Break

11:00 Development of Heavy Metal Ions Extraction Process from Soil in NPP Decommissioning Sites Using Supercritical Carbon Dioxide
Seungil Ha, Sohee Cha, and Kwangheon Park(KHU)

11:20 Zr Metal Preparation Method Using ZrCl as Medium Via Chloride-based Electrorefining and Thermal Decomposition Reaction
Jungho Hur, Hyeongjin Byeon, Kiwon Kang, Eunyeong Choi, and Jaeyeong Park(UNIST)

11:40 Synthesis of Gadolinium-Iron-Garnet Ceramic Waste Form for Actinide Immobilization
Jinyoung Lee and Jong–Il Yun(KAIST)

12:00 Radionuclides Leaching Characteristics in Different Sized Geopolymer Waste Forms with Simulated Spent Ion-exchange Resin
Younglim Shin, Byoungkwan Kim, Jaehyuk Kang, and Wooyong Um(POSTECH)

3C
5. 19 (목) – 20 (금)

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

| 좌장 김태형(Tae–Hyeong Kim), 이주호(JuHo Lee) **| 발표장소** 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

PO3C01 Effect of ZnO Content on Crystallization Tendency of Mo-bearing Borosilicate Glass
Jae–Young Pyo, Jong Heo, and Wooyong Um(POSTECH)

PO3C02 Removal of 14C in Aqueous Phase Using Isotope Exchange Reaction
Seokhoon Yang and Wooyong Um(POSTECH)

PO3C03 Radiological Risk Analysis on D-UF6 Sampling System
Jeong–Guk Kim, San Chae, Jongjin Kim, and Won–Hyuk Jang(KAERI)

PO3C04 Mobile Treatment System of Radioactive Cable Waste
Dooseong Hwang, Junhyuck Im, Joone Lee, Minyoung Kang, and Geun–Ho Kim(KAERI)

PO3C05 Observation of Pore Size Change after Hot Isostatic Pressing of Vitrified Sludge Waste
Sia Hwang, Ki Joon Kang, Jea Ho Lee, and Hee Reyoung Kim(UNIST)

PO3C06 A study on the Adsorption Material for Methyl Iodine Using Waste Generated From Nuclear Power Plants
Sang Wook Lee, Seong Joo Kang, Ji Hyun Kim, MinHo Kawk, and Seung Il Kim(eLIM Global), Jangyul Kim(RIST)

PO3C07 High Entropy MAX Phase and MXene for Radioactive Waste Management
Minseok Lee, Hyun Woo Seong, and Ho Jin Ryu(KAIST)

PO3C08 Solubility Behavior of Pu(IV) in EDTA and ISA Containing Aqueous Solution
S.Y. Park, B.S. Choi, and W.K. Choi(KAERI), W.D. Schecher(ERS)

PO3C09 Preliminary Evaluation of the Suitability for Geological Disposal of a Solidified Decommissioning Waste
Min–Hoon Baik, Jongtae Jeong, Heejae Ju, and Jae–Kwang Lee(KAERI)

PO3C10 Design of Support Modules Required for the Establishment of the Radioactive Waste Certification Program
Hee–Seoung Park, Il–Sik Kang, Dong–ju Lee, Choong–Wie Lee, Won–Hyuk Jang, Jong–Jin Kim, and Jin–Woo Lee(KAERI)

PO3C11 Modularization Approach on Source-term Simulation of Deep Geological Disposal Repository for Spent Nuclear Fuel
Heejae Ju and Jung–Woo Kim(KAERI)

PO3C12 A Nuclide Inventory Verification System for the Development of a Waste Certification Program
Jongtae Jeong and Hong–Joo Ahn(KAERI), Hoseog Dho(KORAD), Ji Woo Lee(ENU)

PO3C13 The Recycling Scenario of Concrete Clearance Wastes Generated from the Decommissioning of Nuclear Power Plants
Byung–Sik Lee, Ye–Jeon Lim, So–On Park, and Sang–Gyoung Lee(DKU)

PO3C14 A Study on the Pelletization and Leaching Characterization of Polymer Waste Form Generating After Soil Washing
Sang–Hyun Lim, Jun–Yeol An, Hyun–Sung Kim, and Jong–Soon Song(CSU), Ki–Hong Kim(Radin)

PO3C15 Estimation of the Amount and Reduction Rate of Contaminated Asbestos Waste in Decommissioning NPP
Hwa–Jun Yeom, Chang–Lak Kim, Chang–Sig Kong, Sanghwa Shin, Byeong–Gwan Lee, and Sun–Kee Lee(KINGS)

PO3C16 A Study on the Trend of Storage Casks of Generation depend on the Cutting Angle PWR Reactor Vessel Internals
Hyo–jeon Kim, Yong–soo Kim, Kyung–min Kim, Jae–yong Lee, Hoa Kim, You–jin Kang, Min–seung Ko, and Dong–jun Lee(HYU)

PO3C17 Effect of Temperature and Acid Concentration on the Reductive Dissolution Kinetics of Magnetite Specimen in Oxalic Acid Solution
Hye Rim Kim, Jae Kwan Park, Su In Lee, and Byung–Chul Lee(HNU), Jeongju Kim and Chorong Kim(KHNP CRI), Wonzin Oh(KNU)

PO3C18 On-site Dose Analysis in case of Spent Resin Handling Accident Process during NPP Decommissioning
Hyunjin Lee, Chang–Lak Kim, Sanghwa Shin, and Sun–kee Lee(KINGS)

PO3C19 Copper Catalyzed Oxidative Dissolution of Chromium(III) Oxide in Alkaline PDS Solution
Wangkyu Choi and Seonbyeong Kim(KAERI), Seungjoo Lim(KAERI(ARTI))

PO3C20 Effect of Copper Concentration on Initial Dissolution Rate of Magnetite in an Inorganic Acidic Solution for the PHWR System Decontamination
Byung–Seon Choi, Aynatika Banerjee, Wang–Kyu Choi, Sang–Yoon Park, and Seon–Byeong Kim(KAERI)

PO3C21 Finding Comprehensive Disposal Plan for Clearance Concrete Waste from Decommissioning of NPP
Kun–Su Lim, Sanghwa Shin, and Chang–Lak Kim(KINGS)

PO3C22 Development of Safety Requirements for Systems and Components to Prevent Design Basis Accidents in a Decommissioning Research Facility
Seok–Jun Seo, Woojin Cho, Siwan Noh, and Jonghui Han(KAERI)

PO3C23 Precipitation Kinetics of Ferrous Oxalate in Oxalic Acid Depending on Hydrogen Peroxide and Iron Catalyst for NPP Chemical Decontamination
Jae Kwan Park, Su In Lee, Hye Rim Kim, and Byung–Chul Lee(HNU), Wonzin Oh(KNU), Jeongju Kim and Chorong Kim(KHNP CRI)

PO3C24 UVC Photo-Fenton Decomposition Behavior of Oxalic Waste Depending on H_2O_2 and Iron Catalyst for NPP Chemical Decontamination
Rahman Saifur , Dohyun Kim, Sang–Jun Choi, and Wonzin Oh(KNU), Jeong–joo Kim and Cho–rong Kim(KHNP CRI), Ki–chul Kim(KEPCO KP)

PO3C25 A High Resolution Aerosol Database Design for Analysis of Radioactive Aerosol during Decommissioning of NPPs
Hyunjin Boo, Hwa Jeong Han, Jonghyeon Kim, and Byung Gi Park(SCHU), Min–Ho Lee and Hee Kwon Ku(FNC Tech.)

PO3C26 A Study on the Pre-treatment and Adsorption Methodology of Soil Specimens for the Development of Radioactive Contaminated Soil Decontamination Process
Sohee Cha, Seungil Ha, and Kwangheon Park(KHU)

PO3C27 Analysis on the Spent Nuclear Fuels Streams of Back-end cycle facilities in Rep. of Korea Through the Enhanced ENVI Simulator
Sunyoung Chang(KINAC)

PO3C28 Multi-Body Dynamics Modeling for Normal Road Transport of Spent Nuclear Fuel
Gil–Eon Jeong, Jongmin Lim, JaeHoon Lim, and Woo–seok Choi(KAERI), Seongji Han and Jin–Gyun Kim(KHU)

PO3C29 Requrement of Dry Storage Demonstration for CANDU Spent Fuel
TaeHyung Na, YongDeog Kim, and DongHee Lee(KHNP CRI)

PO3C30 Structural Safety Evaluation Test for CANDU Spent Fuel Transport Cask (KTC-360)
Woo–seok Choi, Yun–young Yang, Jongmin Lim, Kyoung–Sik Bang, and Ju–chan Lee(KAERI)

PO3C31 A Preliminary Study of Non-Destructive Analysis with Artificial Neural Network
Seung Uk Yoo, Dong Hyuk Park, Chang Je Park, and Yu Bin Ko(Sejong Univ.)

PO3C32 Preliminary Assessment of Radiation Effects on the Scenario for Transport of Spent Nuclear Fuel to Interim Storage Facilities
Yun–Hui Lee, Chang–Lak Kim, Sanghwa Shin, Chang–Sig Kong, and Sun–Kee Lee(KINGS)

PO3C33 Prediction of Peak Cladding Temperature of Spent Fuel Assembly with Porous Model in Dry Storage
Doyun Kim and Seunghwan Yu(KAERI)

PO3C34 Application of Independent Air-cooled System Installation on Spent Fuel Pool for Decommissioning of Pressurized Water Reactor Kori units 3 and 4
Wonjune Mah, Chang–Lak Kim, and Sun–kee Lee(KINGS)

PO3C35 Evaluation of the Effect of Debris in the SFP on Fuel Integrity
Taehyeon Kim, Donghee Lee, and Yongdeog Kim(KHNP CRI)

PO3C36 Preliminary Study for Oxidative Decladding of Simulated Damaged Fuel Held in Vertical Position
JuHo Lee, SunSeok Hong, JaeWon Lee, YungZun Cho, and JongKwang Lee(KAERI)

PO3C37 Source Term Analysis of Accident Tolerance Fuel
JINHO JEONG, DOYEON KIM, and GYUREE BAE(KHNP CRI)

PO3C38 Evaluation of Residual Stress Resistance of Spent Fuel Dry Storage Canister Using Air Laser Peening
Donghee Lee and Yongdeog Kim(KHNP CRI), Sungwoo Cho(DOOSAN)

PO3C39 Performance Evaluation of Pulse Shape Discrimination Based on CCM and CNN According to Light Output Threshold
Seonkwang Yoon and Ho–Dong Kim(UST),
Chaehun Lee, Byung–Hee Won, Seong–Kyu Ahn, and Sang–Bum Hong(KAERI), Hee Seo(JBNU)

PO3C40 Integrity Evaluation of Neutron Absorber for Spent Nuclear Fuel Racks Using Boron-10 Areal Density Analysis Method
Hwasoo Kang, Jongho Hong, and Jaechoon Lee(KHNP), Donghee Lee and Kiyoung Kim(KHNP CRI)

PO3C41 Performance Assessment of Automatic Continuous Separating System for Radiochemical Analysis
Heewon Kim, Chae–Yeon Lee, Ga Hyun Kim, Sang–Do Choi, Jong–Myoung Lim, and Hyuncheol Kim(KAERI)

PO3C42 Influence of Rotating Speed on the Electrodeposition of ZrCl Metal with using a Rotating Cylinder Electrode
Seungmin Ohk, Jungho Hur, Galam Seo, Hongjeong Lee, Hyeonjune Noh, and Jaeyeong Park(UNIST)

제4분과

핵연료 및 원자력재료 (Nuclear Fuel and Materials)

4A
5. 19 (목)

핵연료 특성과 성능 (Nuclear fuels: properties and performance)

| 좌장 임광영(Kwang-young Lim), 양재호(Jae Ho Yang) | 발표장소 삼다홀B

09:00 Modeling the Effect of Soluble Group I Fission Isotope (Rb, Cs) Chlorides on the Phase Behavior of Multi-Component Molten Salt Reactor Chloride Fuels
Woei Jer Ng and Ho Jin Ryu(KAIST)

09:20 Enhanced Fabrication of UN Pellet from U2N3 Powder using Spark Plasma Sintering
Jungsu Ahn and Sangjoon Ahn(UNIST)

09:40 Doped UO_2 Pellet Technology for Advanced Technology Fuels
Jae Ho Yang, Dong Joo Kim, Dong Seok Kim, and Dae Ho Kim(KAERI)

10:00 Development of Transient Fuel Performance Analysis System for Ultra Long-life Micro Lead-cooled Fast Reactor
Jiwon Mun and Ho Jin Ryu(KAIST)

10:20 Energy-balance Model of Axial Fuel Relocation Under LOCA
JangSoo OH, SungUk LEE, and YongSik Yang(KAERI)

10:40 First Principles Calculations of Cohesive Energy of Fission-Product-Segregated Grain Boundary of UO_2
Jae Joon Kim, Hyun Woo Seong, and Ho Jin Ryu(KAIST)

11:00 Development and Validation of Cr Diffusion Model for Coated Zircaloy Accident Tolerant Fuel Cladding
Dongju Kim and Youho Lee(SNU)

11:20 Evaluation of Power to Burst during LOCA in APR1400 by FAMILY Code
Joosuk Lee, Young-Seok Bang, and Kyunglok Baek(KINS)

11:40 Understanding Mechanical Integrity Zircaloy with Radial Hydrides Via Image Analysis of Hydride Morphology
Dahyeon Woo and Youho Lee(SNU)

12:00 Areas of Improvement in FRAPCON and FRAPTRAN Codes for Applications to Fuels with Cladding Material Change
Ju Yeop Park, Sarah Kang, Seulbeen Kim, Hyedong Jeong, and Kyunglok Baek(KINS)

4B
5. 19 (목)

조사손상 및 계산 (Radiation damage and Computation)

| 좌장 김대종(Daejong Kim), 이병호(Byung Ho Lee) | 발표장소 삼다홀B

13:30 Post-irradiation Microstructural Characterization on 3.5-MeV Self-ion Irradiated Ferritic/Martensitic Steels at a Radiation Damage Level of 480 dpa
Myeongkyu Lee, Jungsu Ahn, and Sangjoon Ahn(UNIST)

13:50 Machine Learning Potential for Accurate Radiation Defect Simulations in Bcc-Fe
Sehyeok Park and Takuji Oda(SNU)

14:10 Estimation of Radiation Damage and Gaseous Ion Accumulation in Neutron Absorbers
Geon Kim, Eisung Yoon, and Sangjoon Ahn(UNIST)

14:30 Development of Machine-Learning Potential for Sodium Combustion Simulations: Tests for Basic Properties of Liquid Na, Solid Na_2O, and Interfaces
Chaeyeong Kim and Takuji Oda(SNU)

14:50 Residual Stress Evaluation for Dissimilar Metals Welding Using Deep Fuzzy Neural Networks with Rule-Dropout
Ji Hun Park, Hye Seon Jo, and Man Gyun Na(CSU)

4C
5. 19 (목)

부식손상 (Corrosion damage)

| 좌장 이유호(Youho Lee), 장창희(Changheui Jang) | 발표장소 300호

13:30 Evaluation Method of Thermal Properties of Fuel Deposits Simulated in PWR Primary Water Condition
Hee-Sang Shim, Hye Min Park, Hyeong Wook Kim, and Do Haeng Hur(KAERI),
Young-KooK Lee(Yonsei Univ.), Jeongho Han(HYU)

13:50 Long-term Oxidation Behavior of Borated Stainless Steel in Spent Fuel Pool Environment
Daehyeon Park, Yunju Lee, Junhyuk Ham, Seung Chang Yoo, and Ji Hyun Kim(UNIST),
Kiyoung Kim, Donghee Lee, and Yongdeog Kim(KHNP)

14:10 Synchrotron X-ray Fluorescence Study on Chloride-induced Stress Corrosion Cracking in Austenitic Stainless Steel Welds
Seunghyun Kim, Gidong Kim, and Sang Woo Song(KIMS), Kangwoo Ahn and Jun Lim(PAL)

14:30 Dissolved Hydrogen Effect on Crack Initiation Behavior and Oxide Formation of Sensitized 304L Stainless Steel
JUNHYUK HAM, SEUNG CHANG YOO, YUNJU LEE, DAEHYEON PARK, and JI HYUN KIM(UNIST)

14:50 Influence of Dissolved Hydrogen on the Intergranular Oxidation Behaviour of Ni-based Alloys in Simulated PWR Primary Water
Yun Soo Lim, Sung Woo Kim, Dong Jin Kim, Hong Pyo Kim, and Jong Yeon Lee(KAERI)

15:10 Calculation of Oxygen Diffusivity in Liquid Sodium Using Machine-learning Potential Model
Junhyoung Gil and Takuji Oda(SNU)

4D
5. 20 (금)

원자력재료 신기술 (New technologies for nuclear materials)

| 좌장 김동진(Dong-Jin Kim), 김지현(Ji Hyun Kim) | 발표장소 삼다홀B

09:00 Accuracy Evaluation of Thermodynamic Model of Hydrogen Trapping by Monovacancies in Tungsten
Gi-Hoon Kang and Takuji Oda(SNU)

09:20 Study on Alumina Forming Austenitic Stainless Steel exposed to 450 ℃ Lead-Bismuth Eutectic
Taeyong Kim, Byeongju Kim, and Ji Hyun Kim(UNIST)

09:40 Direct Inspection Technology of Buried Piping for Managing Tritium Contamination in Groundwater at Wolsong NPP (CANDU-6 Reactor)
Hyoung Tae Kim(KAERI), Duck-Gun Park(AIPIT)

10:00 A Practical Method to Compensate the Machine Compliance for Simple Tensile Tests WIthout Extensometer
Bong-Sang Lee and Min-Chul Kim(KAERI)

10:20 Effect of Load Ratio on the Deformation and Failure Behaviors of Nuclear Structural Materials under Large Amplitude Load-controlled Cyclic Loads
Sang Eon Kim and Jin Weon Kim(CSU), Jong Sung Kim(Sejong Univ.)

10:40 SA 508 Low Alloy Steel for Reactor Pressure Vessel via Powder Metallurgy
Jinsung Jang and Min-Chul Kim(KAERI) Seung Ho Joo and Do Hyang Kim(Yonsei Univ.)

11:00 Performance Testing of Nickel and Palladium Coatings for Venturi Fouling Mitigation
Wonjun Choi and Chi Bum Bahn(PNU), Young-Jin Kim, Dong-Seok Lim, and Hyun-Chul Lee(FNC Tech.)

11:20 Application of Nuclear Convergence Technology and Materials : 3D Laser Cladding Method and CrAl Alloy Coating for Highly Corrosion-Resistant for Fuel Cells
Ha Eun Kang, Unho Lee, Ji Hyeok Choi, and Young Soo Yoon(Gachon Univ.), Hyun Gil Kim(KAERI)

11:40 Characterization of Oxide Layers Formed on FeCrSi Alloy Depending on Oxygen Partial Pressure
Joonho Moon, Sungyu Kim, and Chi Bum Bahn(PNU), Ji Hyun Kim(UNIST), Michael P. Short(MIT)

4E 핵연료 및 원자력재료 (Nuclear Fuel and Materials) – POSTER

5. 19 (목) – 20 (금)

| 좌장 안상준(Sangjoon Ahn), 김성우(Sung Woo Kim) **| 발표장소** 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

PO4E01 Thermal Resistance Analysis for Estimating Thermal Conductivity of UO_2-5 vol% Mo Microcell Pellet
Heung Soo Lee, Dong-Joo Kim, Dong Seok Kim, Jae Ho Yang, and Ji-Hae Yoon(KAERI)

PO4E02 Fabrication and Machining for U3Si2 Ingots Using Atomized Powder in KAERI
Jonghwan Kim, Jungmin Park, Jaedong Lee, Kyuhong Lee, and Youngjin Jeong(KAERI)

PO4E03 Production of Zircaloy-4 Powder using Scraps and its 3D Printing Application
Joo-Young Ryu, Han-Gil Woo, Dae-Woon Choi, Chae-Young Nam, Jin-Seok Lee, and Sang-Youn Jeon(KEPCO NF)

PO4E04 Development of High-density U3Si2/Al Dispersion Fuel in KAERI
Tae Won Cho, Sung Hwan Kim, Hwa Young Song, Kyeong Min Park, and Yong Jin Jeong(KAERI)

PO4E05 Analysis of Ultrasonic Inspection Defects of the High Density U3Si2 Fuel plate
Kyeongmin Park, Sunyong Lee, Sunghwan Kim, and Yongjin Jeong(KAERI)

PO4E06 Application of 3D Printing Process for Fabrication of ZrO_2-Zr_2Cu Composite Fuel
Seong-Jun Ha and Young-Kook Lee(Yonsei Univ.),
Kyung-Chai Jeong , Seok-Jin Oh, Hyun Gil Kim, and Jeong-Yong Park(KAERI)

PO4E07 Impact and Fretting Wear Behaviors of Cr-coated Multi-layer Fuel Cladding for Accident-Tolerant Fuel
Young-Ho Lee, Yang-Il Jung, Dong-Joo Kim, and Hyun-Gil Kim(KAERI)

PO4E08 Characterization of CVD SiC Joining Using Thin CrAl Interlayer for SiC Composites Cladding and End Cap
Hyeon-Geun Lee, Weon-Ju Kim, Ji Yeon Park, and Daejong Kim(KAERI)

PO4E09 Review of Annular Fuel Database for CIMBA Fuel Development
Yong Sik Yang, Hyun Gil Kim, Jin Ho Jeong, and Ho Cheol Shin(KHNP)

PO4E10 Evaluation of the Fuel Performance for the Whole Rods of a Reactor Core
Changhwan Shin and Jae-yong Kim(KAERI), Yunki Jo and Deokjung Lee(UNIST)

P04E11 TRISO Fuel Performances of a Very High Temperature System under Normal Operation and Pressurized Conduction Cooling Conditions
Young Min Kim, Seungsu Yuk, Hong Sik Lim, and Chang Keun Jo(KAERI)

P04E12 Failure Behaviors of Quadruple Isotropic Coated Fuel Particles in a Very High Temperature System
Young Min Kim and Eung Seon Kim(KAERI)

P04E13 Modeling of Blistering Temperature for KJRR-LTA Fuel Plates
Gwan Yoon Jeong, Cheol Min Lee, and Young-Wook Tahk(KAERI)

P04E14 Preliminary Analysis of Burnup Effect on k-inf for Cr-Coated and SiC Cladding Accident Tolerant Fuel Rods with nTRACER
Kibeom Park, Jae Uk Seo, Tongkyu Park, and Sung-Kyun Zee(FNC Tech.)

P04E15 Development of the Program on Radioactivity Evaluation for SF Dry Storage
Kim Beomgyu, Kim Giyoung, Kim Teahyun, Na Teahyoung, Lee Donghee, and Kim Yongdeok(KHNP)

P04E16 High Temperature Oxidation Behavior of the Cr Coated Zr alloy in BDBA Condition
Sung Yong Lee, Hun Jang, DaBin Lee, Chung Yong Lee, Yoon Ho Kim, and Seung Jae Lee(KEPCO NF)

P04E17 MULTEQ Simulation for Deposit Formation on Zirconium Oxide with UV Irradiation
Taeho Kim(KAERI), Benoit Queylat and Adrien Couet(UW Madison), Ambard Antoine(EDF)

P04E18 Study of Stress Corrosion Cracking Nucleation of Alloy 600 in Primary Water Environment by EBSD and DIC
Jung-Ho Shin, Dong-Jin Kim, and Sung-Woo Kim(KAERI)

P04E19 Sensitivity Evaluation of WH-type Reactor Steel Plate Failure Probability using Advanced PROFAS-RV PFM Code with Machine Learning Irradiation Embrittlement Models
Jongmin Kim, Gyeongguen Lee, Minchul Kim, and Bongsang Lee(KAERI)

P04E20 A Study on Thermodynamic Corrosion Behavior of Structural Material in Chlorine-Based Molten Salt Reactor
Jisu Na, Unho Lee, and Young Soo Yoon(Gachon Univ.)

P04E21 Estimation of Yield Strength of RPV Steels by Empirical Correlation and Analytical Method using Small Punch Test
Seokmin Hong, Jong-Min Kim, and Min-Chul Kim(KAERI)

P04E22 Difference in Thermo-Mechanical Fatigue Evaluation According to Plastic Correction Factors of ASME B&PV Code
Myeong-Woo Lee and Je-Yong Yu(KAERI), Ji-Hye Kim, Young-Joon Kim, and Yun-Jae Kim(Korea Univ.)

P04E23 Effect of Pre-strain on Oxidation Behavior of Ni-Cr Alloys in Air at 700 ˚C
Cheol Min Lee, Young-Soo Han, Seok Hyun Song, and Ju-Seong Kim(KAERI), Jae Suk Jeong(DOOSAN)

P04E24 Corrosion Behaviors of SS316 and Ni-base Alloys in Molten LiCl-KCl Salt at High Temperature
Jun Woo Park and Jong-Il Yun(KAIST)

P04E25 Validation of Finite Element Method Model for Rupture Disk Corrosion Test
Tae Young Kim and Sung Woo Kim(KAERI), Sang Tae Kim(HYU)

P04E26 Cold Working Effect on Stress Corrosion Cracking Behavior of 316L Stainless Steel in Chloride-contained Primary Water Environment
SONG LEE, JUNHYUK HAM, SEUNG CHANG YOO, KYEONGTAE PARK, and JI HYUN KIM(UNIST)

P04E27 A study on the Electropolishing Conditions According to Changes in Surface Roughness
EunByeoul Jo and MinJae Choi(KAERI), SeokSu Sohn(Korea Univ.)

P04E28 Investigation of Flow Effect on Breakaway Time Under the Isothermal Oxygen Atmosphere at 1000℃
Siwon Seo, KoKo Aung, and Jaeyoung Lee(HGU)

P04E29 Residual Stresses and Microstructure Evolution of Alloy 182 After Peening
Baosheng Bai, Sungyu Kim, Joonho Moon, and Chi Bum Bahn(PNU), Wongeun Yi(DOOSAN), Eunsub Yun(KHNP)

PO4E30 Evaluation of the Effects of Irradiation on Reduced-activation Ferritic/Martensitic Steels for Fusion Structural Materials
Sangeun Kim, Jinhyeok Kim, Kyongsik Yoo, Minkyu Ahn, and Chansun Shin(Myongji Univ.), Hyung–Ha Jin(KAERI), Chang–Hoon Lee(KIMS)

PO4E31 Energy Dependence of Effective Neutron Absorption Probability of Neutron Absorbing Materials
Junhyun Kwon and Young–Bum Chun(KAERI)

PO4E32 Characterization of 3D Printed Functionally Graded Material for Nuclear Reactor
Ji–Hyun Yoon, Wanchuck Woo, and Giseung Shin(KAERI)

PO4E33 Improvement of Corrosion Resistance of Stainless Steel Used in Cooling Water Component by Plasma Electrolysis
Jun Heo, Jaewoo Lee, and Sung Oh Cho(KAIST)

PO4E34 Effect of Process Conditions on the Characteristics of Sol Gel TiO_2 Dip Coating
Wan Young Maeng, Ji Hae Yoon, Dong Jin Kim, and Young Bum Chun(KAERI)

제5분과

원자력 열수력 (Nuclear Thermal Hydraulics)

5A
5. 19 (목)

열수력 실험 – I (Thermal–Hydraulic Experiments – I)

| 좌장 양진화(Jin–Hwa Yang), 이연건(Yeon–Gun Lee) | 발표장소 400호

09:00 Forced Convection Heat Transfer of the Heating Packed Bed Varying the Sphere Diameter and Bed Height
Je–Young Moon(KAERI), Bum–Jin Chung(KHU)

09:20 Flow Characteristics of Foamed Surfactant Solution in the Vertical Pipe for Decommissioning Nuclear Power Plant
Hyoin Lee, Eunsik Sung, and Ji Hwan Jeong(PNU)

09:40 Experimental Investigation of CHF on Helical Finned Heater under the Static Inclination and Rolling Conditions
Chang Won Lee, Jin –Seong Yoo, Hee Pyo Hong, Goon–Cherl Park, and Hyoung Kyu Cho(SNU),
Geon Woo Kim(KINS)

10:00 Resemblance of Critical Current Density to Critical Heat Flux
Hae–Kyun Park and Bum–Jin Chung(KHU)

10:20 Heat Transfer Performances of Printed Circuit Heat Exchangers with Airfoil and Straight Channels for Helium Brayton Cycle Recuperator Designs
Sungkun Chung, Seong Min Shin, Namhyeong Kim, Su Won Lee, Moo Hwan Kim, and HangJin Jo(POSTECH)

10:40 Coffee Break

11:00 Influence of Bed Diameter (D) on the Natural Convection of a Packed Bed
Sang Soo Yoon, Hyun Ha Ahn, and Bum Jin Chung(KHU)

11:20 Experimental Thermal Evaluation of Sodium Heat Pipe with Different Inclination Angle
Dong Hun Lee and In Cheol Bang(UNIST)

11:40 Modified Hydrodynamic Instability Model in Consideration of Heater Configuration during Pool Boiling
SeockYong Lee, Sehyeon Park, and HangJin Jo(POSTECH)

12:00 Feasibility Study of Hybrid Heat Pipe Control Rod Application on Nuclear Power Plant using UNIST Reactor Innovation LOop(URI-LO)
Hyeon Ji Kim, Do Yeong Lim, and In Cheol Bang(UNIST)

5B
5. 19 (목)

열수력 해석 – I (Thermal Hydraulics Analysis – I)

| 좌장 권혁(Hyouk Kwon), 홍순준(Soon–Jun Hong) | 발표장소 401호

09:00 Numerical Comparison of Hydraulic Characteristics in KAERI 61-PIN Wire-Wrapped Fuel Assembly using STAR-CCM+ and ANSYS CFX
Gi Uk Choi and Jae Ho Jeong(Gachon Univ.), Jonggan Hong and Yo Han Jung(KAERI)

09:20 Investigation of the Heat Removal Capability of the Hybrid Control Rod in Natural Circulation-type SMR under Station Black Out Accident with MARS-KS code
Ji Yong Kim, Ye Yeong Park, and In Cheol Bang(UNIST)

09:40 Developing Correlation of Bubble Departure Diameter in Upward Subcooled Flow Boiling Based on Force Balance Model
Long Doan Manh, Jeongmin Moon, Jinyeong Bak, Jae Jun Jeong, and Byong-Jo Yun(PNU)

10:00 SPACE Validation on a Steam Generator Tube Rapture Experiment with SMART-ITL Facility
Eslam Bali and Sulatn Al-Faifi(KACARE), Kyung Doo Kim(KAERI)

10:20 Analysis of SBLOCA for CRDM Nozzle Rupture with LSI at the ATLAS Experimental Facility using the MARS-KS 1.5
Hyunjoon Jeong and Taewan Kim(INU)

10:40 Coffee Break

11:00 Thermal Hydraulic Behavior Analysis of VANAM-M3(ISP-37) Experiment using CINEMA Code
Yo Han Kim, Woonho Jeong, and Yong Hoon Jeong(KAIST), Soon Ho Park(FNC Tech.)

11:20 Improvement of Crossflow Model of MARS-KS by Introducing Inter-channel Turbulent Mixing Model
Yunseok Lee and Taewan Kim(INU)

11:40 Deformation of Zircaloy-4 Tube with High Internal Pressure under Film Boiling of Water at Atmospheric Pressure
Van Toan Nguyen and Byoung Jae Kim(CNU)

5C
5. 19 (목)

원자력 열수력 현안 (Thermal-Hydraulic Issues)

| 좌장 김대헌(Dae-Hun Kim), 유선오(Seon-Oh Yu) **| 발표장소** 402호

초청발표

13:30 On the Scalability of Validation Data for LWR Safety Evaluation
Chul-Hwa Song(KAERI)

14:00 Analysis of Core Cooldown Performance According to the High Burnup Fuel Deformation Modeling
Youn-Shil Kim, Young Kyun Kwack, Ji Hwan Kim, and Nhan Hien Hoang(EN2T), Young Seok Bang and Il Suk Lee (KINS)

14:20 Example Analysis of Performance Issues in Passive Safety System using System Code
Jehee Lee, Seong-Su Jeon, and Su Hyun Hwang(FNC Tech.), Ju-Yeop Park(KINS)

14:40 System Analysis of Flow Blockage Phenomena in a Liquid Metal-cooled Small Marine Reactor
JooHyung Seo and InCheon Bang(UNIST)

15:00 Major Results from Validation Tests for SMART Passive Safety Injection System with the SMART-ITL Facility
Hyun-Sik Park, Hwang Bae, Sung-Uk Ryu, Jin-Hwa Yang, Byong-Guk Jeon, Yun-Gon Bang, and Sung-Jae Yi(KAERI)

5D
5. 19 (목)

열수력 신기술 (Advanced Thermal Hydraulics)

| 좌장 임상규(Sang-Gyu Lim), 김형대(Hyung-Dae Kim) **| 발표장소** 401호

초청발표

13:30 Flow Pattern-Based Modeling of Shell-and-Tube Heat Exchangers with Phase Change for MARS-KS Calculation
Young Seok Bang, Jungjin Bang, Seong-Su Jeon, Bub Dong Chung, and Youngsuk Bang(FNC Tech.)

14:00 Feasibility Study of Deep Learning and Acoustic Vibration-based Two-phase Monitoring Technology on Nuclear Reactor
Do Yeong Lim and In Cheol Bang(UNIST)

14:20 Development of Model for Steam Condensation in the Presence of Non-Condensable Gas on the Outer Wall of the Plate and Tube
Jinhoon Kang, Sang-Gyun Nam, Taeho Kim, and Byongjo Yun(PNU)

14:40 Dissolution Behavior of Magnetite Deposits Accumulated in a Printed Circuit Steam Generator during an EDTA-Based Chemical Cleaning Process
Jeoh Han, Sang-Ji Kim, and Do Haeng Hur(KAERI), Young-Kook Lee(Yonsei Univ.)

15:00 Integrated Experiments for RVACS using Combination of Two Different Similarity Law
Min Ho Lee and In Cheol Bang(UNIST), Dong Wook Jerng(CAU)

5E
5. 20 (금)

열수력해석 – II (Thermal Hydraulics Analysis – II)

| 좌장 이재룡(Jae-Ryong Lee), 최치웅(Chi-Woong Choi) **| 발표장소** 202호

09:00 Modeling of Secondary System of SMART100 for Nuclear-Renewable Hybrid Energy System Analysis using MARS-KS Code
Jungjin Bang, Dong-Young Lee, Bub Dong Chung, Young Seok Bang, Youngsuk Bang, and Seong-Su Jeon(FNC Tech.)

09:20 Analysis of Single- and Two-phase Natural Circulation using SPACE
Youngjae Park, Jehee Lee, Jae-Ho Bae, SeongSu Jeon, and SoonJoon Hong(FNC Tech.),
Do-Hyun Hwang(KHNP)

09:40 Validation of RANS based CFD Methodology with STAR-CMM+ Code in a JNC Experiment of 169-pin Fuel Bundle
Han-Seop Song, Gi-Uk CHoi, and Jae-Ho Jeong(Gachon Univ.), Jonggan Hong and Yo-Han Jung(KAERI)

10:00 The Modification of Two-Fluid Momentum Equations for Two-Dimensional Bubbly Flows.
Ali Sadeghi Chehelgaz, Sang Hee Yoon, and Byoung Jae Kim(CNU)

10:20 SPACE Analysis for Safety Injection Line Break Concurrent with TLOSHR in SMART-ITL Facility
Sultan Alfaifi and Islam Bali(KACARE), Kyung Doo Kim(KAERI)

10:40 Coffee Break

11:00 SPACE Analysis for Pressurizer Safety Valve Break in SMART-ITL Facility
Sultan Alfaifi and Islam Bali(KACARE), Kyung Doo Kim(KAERI)

11:20 Analyses of Transient Scenarios of Prototype Gen-IV Sodium Cooled Fast Reactor
Gi Hyeon Choi and Dong-Wook Jerng(CAU)

11:40 Physics-Informed Machine Learning to Accelerate Unsteady Computational Fluid Dynamics
Joongoo Jeon(SNU), Juhyeong Lee(HYU), Ricardo Vinuesa(KTH)

5F
5. 20 (금)

열수력 실험 – II (Thermal-Hydraulic Experiments – II)

| 좌장 배병언(Byoung-Uhn Bae), 조항진(HangJin Jo) **| 발표장소** 삼다홀A

09:00 Effect of Metallic Wire-mesh on Flow Boiling CHF From the Downward-facing Heated Wall
In Yeop Kang, Soonil Kwon, Junha Kang, and Hyungdae Kim(KHU)

09:20 Parametric Study for Suppressing the Flow Instability Phenomenon under Two-phase Natural Circulation Flow
Sun Taek Lim, Koung Moon Kim, and Ho Seon Ahn(INU), Dong-Wook Jerng(CAU)

09:40 Modified Modeling of Rivulet Flow during Dropwise Condensation Heat Transfer on a Long Vertical Tube under Atmospheric Condition
Taeseok Kim and Sung Joong Kim(HYU)

10:00 Influence of the Cathode Size on the CCD
DongHyuk Park, HaeKyun Park, and BumJin Chung(KHU)

10:20 Pool Boiling Experiments with Various Sizes of Plate-type Heaters and the Detrimental Effects of a Heater Surface Process on the Critical Heat Flux
Min Suk Lee, Jun Yeong Jung, and Yong Hoon Jeong(KAIST), Dong Hoon Kam(ANL)

10:40 Coffee Break

11:00 Experimental Investigation on Natural Convective Heat Transfer of a Helical Coil
DongHo SHIN, HaeKyun PARK, and BumJin CHUNG(KHU)

11:20 Experimental Investigation on the Condensation Heat Transfer in Low Wall Subcooling
Ji-Hwan Hwang and Dong-Wook Jerng(CAU), Hyun-Jae Kim(TSNE), Jung Jin Bang(FNC Tech.)

11:40 Stable and Enhanced Jumping Condensation on Monolayer Superhydrophobic Surface with Heterogeneous Wettability
Younghyun Choi, Taeyang Han, Jaeyoung Jeong, and HangJin Jo(POSTECH)

5G
5. 19 (목) – 20 (금)

열수력 실험 – III (Thermal-Hydraulic Experiments – III) – POSTER

| 좌장 김종록(Jong-Rok Kim), 박일웅(Il-Woong Park) **| 발표장소** 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

PO5G01 Critical Heat Flux and Post-CHF Heat Transfer in Fast-Transient Flow Boiling
S. K. Moon, Y. S. Choi, J. K. Park, and B. G. Jeon(KAERI), D. H. Kam(ANL)

PO5G02 Calculation for Top and Bottom Break of RPV with PECCS in ATLAS
Seok CHO, Byoung-Uhn Bae, Yusun Park, Jae Bong Lee, Jongrok Kim, Nam Hyun Choi, and Kyoung-Ho Kang(KAERI)

PO5G03 Overview of Commissioning Test of LAPLACE Test Facility
Seok Kim, Yong Seok Choi, Byoung-Uhn Bae, Yusun Park, Seok Cho, Young-Jung Youn, Jong-Kuk Park, Hae-Seob Choi, and Sang-Ki Moon(KAERI)

PO5G04 Passive Cooling Test using a Full-Height Test Facility for SMART CPRSS
Jin-Hwa Yang, Jin Su Kwon, Hong-Hyun Son, Hwang Bae, and Hyun-Sik Park(KAERI)

PO5G05 Commissioning Test of NEOUL-H Facility Designed for Flow Boiling CHF Measurement under Heaving Motion
Jin-Seong Yoo, Chang Won Lee, Heepyo Hong, Goon-Cherl Park, and Hyoung Kyu Cho(SNU)

PO5G06 Subcooled Flow Boiling Visualization in Mini Channel using Synchrotron X-ray : A Preliminary Test
Minjae Kim, Hyunwoong Lee, and Hyungdae Kim(KHU), Dong In Yu(PKNU), Ho Jae Kwak(PAL)

PO5G07 Two-phase Flow Regime Transition Criteria of Staggered Mini Channel Printed Circuit Heat Exchanger
Bowon Hwang, Haeun Noh, and Jaeyoung Lee(HGU)

PO5G08 Intergraded and Coupled Analysis of Reflood Using Fuel Simulator(ICARUS) Thermal Loss Analysis
HAESEOB CHOI, JONGROK KIM, JAEBONG LEE, JONGKUK PARK, and SEOK KIM(KAERI)

PO5G09 Heat Exchanger Design Study for Micro Molten Salt Reactor
In Woo Son, Sungwook Choi, and Jeong Ik Lee(KAIST), Sang Ji Kim(KAERI)

5H
5. 19 (목) – 20 (금)

열수력 해석 – III (Thermal Hydraulics Analysis – III) – POSTER

| 좌장 이승준(Seung–Jun Lee), 조윤제(Yun–Je Cho) **| 발표장소** 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

PO5H01 General Heat Exchanger Modeling for Quasi-Steady Small Modular Reactor Heat Source Simulation
Seong Woo Kang and Man Sung Yim(KAIST)

PO5H02 Assessment of MULTID Component of MARS-KS using RBHT Tests
Kyung–Won Lee, Andong Shin, Jae Soon Kim, and Il Suk Lee(KINS)

PO5H03 A Simulation of the Flow Distribution Change in the Conceptual Heat Exchanging System due to the Line Pressure Drop Variation
Dongjin Euh, Taesoon Kwon, and Jungwoon Choi(KAERI)

PO5H04 Numerical Study on the Effect of an Inlet Orifice Hole Diameter on the Flow Characteristics Inside the Multi-stage Orifice
Gong–hee Lee and June–ho Bae(KINS)

PO5H05 Validation Calculation of Reflooding Tests Using TRACE Code
Seon Oh YU and Kyung Won LEE(KINS)

PO5H06 Study on the Wall Heat Transfer of Condensation in the Presence of NC Gases
Jong Hyuk Lee and Kwi Seok Ha(KAERI)

PO5H07 Validation of the Motion Model in MARS-KS for Gravity Driven Injection
Moonhee Choi, Hyungjoo Seo, and Hyoung Kyu Cho(SNU)

PO5H08 Improvement of Well-Posedness of SPACE Code Using Artificial Phase Change and Viscosity
Byoung Jae Kim(CNU), Seung Wook Lee(KAERI)

PO5H09 CFD Simulation of Subcooled Boiling Flow
Sung Gil Shin, Soyoung Lee, and Jeong Ik Lee(KAIST)

PO5H10 Changes in Hydraulic Characteristics of APR Type Core Simulators in Different Simulation Conditions
Won Man Park, Sung Man Son, Dae Kyung Choi, and Choengryul Choi(Elsoltec), Sang–Gyu Lim(KHNP)

PO5H11 Analysis of the Small Steam Leaks by Upstream Pressure Conditions
Dae Kyung Choi, Won Man Park , Sung Man Son, and Choengryul Choi(Elsoltec),
Woo–Shik Kim, Tae–Soon Kwon, and Dong–Jin Euh(KAERI)

PO5H12 Analysis of Single- and Two-phase Pressure Drop using SPACE
Youngjae Park, Kum Ho Han, Jehee Lee, Jae–Ho Bae, SeongSu Jeon, and SoonJoon Hong(FNC Tech.),
Do–Hyun Hwang(KHNP)

PO5H13 Numerical Simulation of Hydraulic Performance in a Channel with Staggered Square Pin-fins
Armanto Pardamean Simanjuntak, Benrico Simamora, and Jae–Young Lee(HGU)

PO5H14 Validation of MARS-KS Code for Critical Heat Flux on a Single Heater Rod under Inclined Condition
Yujeong Ko and Hyoung Kyu Cho(SNU)

PO5H15 Implementation of Enthalpy-Porosity Methodology in OpenFOAM for Validation of LIVE L7V and L7W Tests
Seokwon Whang and Hyun Sun Park(SNU), Kukhee Lim(KINS)

PO5H16 Modeling of Steam Power Conversion System for APR1400 using MARS-KS
Seongsu Jeon, Jungjin Bang, Dongyoung Lee, Youngseok Bang, Bubdong Chung, and Youngsuk Bang(FNC Tech.)

PO5H17 Investigation of Natural Circulation Instability for Inclined One-loop with Single-phase in MARS-KS
Ju Hun Jeong, Ji Yong Kim, and In Cheol Bang(UNIST)

PO5H18 Influence of Rolling Motion on the Subchannel Analysis of Two-Phase Flows
Dae-Hyun Hwang and Seong-Jin Kim(KAERI)

PO5H19 Investigation of Natural Convection Thermal Characteristics of BALI Experiment through Eulerian Computational Fluid Dynamics code and Comparison with Lagrangian code
Hyeongi Moon and Jaeho Jeong(Gachon Univ.), Sohyun Park(Kim See Darl), Eungsoo Kim(SNU)

PO5H20 Recent Improvements of MARS-KS Code
Kyung-Won Lee, Andong Shin, Aeju Cheong, Min Ki Cho, Jae Soon Kim, and Kwang Won Seul(KINS), Bub Dong Chung(FNC Tech.), Seung Wook Lee and Sung Won Bae(KAERI), Jae Seung Suh(SENTECH), Jae Jun Jeong(PNU)

PO5H21 Establishment of Evaluation Method for Integrity of Fuel Assembly in PGSFR, and Preliminary Analysis
SeoYoon Choi and Jaeho Jeong(Gachon Univ.), HyungKyu Kim(KAERI)

5I

5. 19 (목) – 20 (금)

열수력 이슈 및 신기술 (Advanced Thermal-Hydraulic & Issues) – POSTER

| 좌장 이경원(Kyung Won Lee), 전병국(Byong-Guk Jeon) **| 발표장소** 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

PO5I01 Estimation of Conditional Exceedance Probability for LBLOCA using Monte-Carlo and Alternative Method
Dong Gu Kang, Do Kyun Lim, Il Suk Lee, Deog Yeon Oh, and Yong Seok Choi(KINS)

PO5I02 Distribution Estimation for the Critical Size of Dispersed Fuel Particle Result from LBLOCA
MIN KI CHO and JOOSUK LEE(KINS)

PO5I03 Effect of CRUD Layer on the Heat Transfer in the Reflood Situation using the SPACE
Donggyun Seo and Hyungdae Kim(KHU), Youngjae Park(FNC Tech.), Boungjae Kim(CNU)

PO5I04 Improvement Methodology of Constitutive Equations in Safety Analysis Code using Integral Effect Test Data
ChoHwan Oh, Doh Hyeon Kim, and Jeong Ik Lee(KAIST)

PO5I05 Feasibility Estimation of Development of Real-time Interactive Nuclear Accident Simulation Using Supervised Learning
Seok Ho Song, Yeon Ha Lee, and Jeong Ik Lee(KAIST)

PO5I06 Simulation of Dispersal of Fuel Particles with STAR-CCM+
Haeyong Jeong and Jaegon Ryu(Sejong Univ.)

PO5I07 Preliminary Development of Alkali Metal Heat Pipe Code for Microreactor Transient Analysis
Yeong Hun Lee and Hyoung Kyu Cho(SNU)

PO5I08 Proposal on Operating Modes of TES Test Facility using Sodium
Hyeonil Kim, Jung Yoon, Yong-Hoon Shin, and Jewhan Lee(KAERI)

PO5I09 Investigation of Computational Modeling of Helical Once-Through Steam Generator for Integrated System Analysis
Youngsuk Bang, KeonYeop Kim, So Eun Shin, Yeon Jun Choo, and Sung Kyun Zee(FNC Tech.)

PO5I10 A Conceptual Design of Supercritical CO_2 Brayton Cycle for a Small Modular Molten Salt Reactor
Sunghyun Yoo, Wonkoo Lee, and Kwon-Yeong Lee(HGU)

PO5I11 Preliminary Study for Reactor Kinetics Modeling
Seung Chan LEE(KHNP)

PO5I12 Wall-modelled LES of the Turbulent Flow in a Nuclear Fuel Rod Bundle
Ye Jun Lee and Jungwoo Kim(SEOULTEC)

PO5I13 CFD Modeling for Reactor Coolant System Natural Circulation Applied with a Tube Simplification Technique
Dae Kyung Choi and Choengryul Choi(Elsoltec), Kukhee Lim and Yong Jin Cho(KINS)

PO5I14 Preliminary CFD Study of Pressure Drop in Helical Tube Steam Generator for SMR Application
Doh Hyeon Kim and Jeong Ik Lee(KAIST)

PO5I15 Implementation of New Condensation Model into the CAP Code
Kum Ho Han, Jehee Lee, Yeon Jun Choo, and Soon Joon Hong(FNC Tech.)

PO5I16 Study on the Size of Printed Circuit Heat Exchangers for a Pool-type Research Reactor
Seongmin Lee, In Guk Kim, Hong Beom Park, and Kyoung Woo Seo(KAERI)

PO5I17 Effect of Virtual Mass Coefficient on Critical Flow Model for S-CO_2 System
Jae Jun Lee and Jeong Ik Lee(KAIST)

PO5I18 Numerical Analysis of Vortical Flow Structure for 61-pin Wire-Wrapped Fuel Assembly
Seong Bin Hong and Jae Ho Jeong(Gachon Univ.)

PO5I19 Evaluation on Effect of Heat Transfer Change by Cr-coated Cladding for Large Break-Loss of Coolant Accident
Jae–Ho Bae, Soon–Joon Hong, Beop–Dong Jeong, and Tae–Sun Ro(FNC Tech.)

PO5I20 Assessment of SLTHEN Code Estimation Capability for the Coolant Temperature Distribution using the RANS Based CFD Analysis
Junkyu Han and Jonggan Hong(KAERI), Jaehyoung Jun(JH solution)

PO5I21 Status of Optimal Evaluation System for Safety Analysis OPR1000 and Westinghouse Nuclear Power Plants
Bum–Soo Youn and Yo–Han Kim(KHNP)

제6분과

원자력 안전 (Nuclear Safety)

6A 확률론적 안전성평가 I (Probabilistic Safety Assessment I)

5. 19 (목)

| 좌장 허균영(Gyunyoung Heo), 이승준(Seung Jun Lee) | 발표장소 202호

09:00 A Study on Intensive QA Inspection using Information from Risk-Informed Classification of SSCs
Ju Sang Cho and Hak Kyu Lim(KINGS)

09:20 The Sensitivity Analysis Without Credit to Operator Action for 30 Minutes in the APR1000 PSA
Jaegab Kim, Ho Seok, Jeongguk Song, Inchul Ryu, and Jinkyoo Yoon(KEPCO E&C),
Jiyong Oh(KHNP)

09:40 Probability Subtraction Method Implementation into SAREX
Dong Kyu Kim, Sang Hyun Kim, and Ho Seok(KEPCO E&C), Seong Kyu Park(NESS)

10:00 A Framework for the Applications of a Reduced Order Model to Enhance the Safety of Nuclear Power Plants in Terms of PSA
Kyungho Jin, Hyeonmin Kim, and Jinkyun Park(KAERI)

10:20 Practical Application of PSA Model for the Evaluation of Defense in Depth
Ho Gon Lim, Jin Hee Park, and Dong San Kim(KAERI)

10:40 Coffee Break

11:00 An Independent Review of PSAs for Accident Management Plan
JIN HEE PARK(KAERI)

11:20 Probabilistic Wave Height Hazard Assessment at the NPP Site Ocean by Storm Surge
Beomjin Kim, Minkyu Kim, and Daegi Hahm(KAERI)

6B 확률론적 안전성평가 II (Probabilistic Safety Assessment II)

5. 19 (목)

| 좌장 김동산(Dong-San Kim), 김만철(Man Cheol Kim) | 발표장소 202호

13:30 An Approach to Machine Learning-based Categorization of Source Term Behaviors of Level 2 PSA Scenarios
Kyungho Jin and Jaehyun Cho(KAERI)

13:50 Introduction of Updated CET/DET in the Level 2 PSA for APR1400 NPPs
Baehyeuk Kwon, Inchul Ryu, Changhwan Lim, and Namcheol Kim(KEPCO E&C)

14:10 Sensitivity Analysis of Multiple Release Locations in Multi-unit Level 3 PSA
Dohyun Lim, Chanwoo Park, Sunghyun Park, Dongha Kim, Youngho Jin, and Moosung Jae(HYU)

14:30 Probability of Military Aircraft Crash Considering Human Efforts
HyungTaek YOO and Moosung JAE(HYU)

6C
5. 19 (목)

중대사고 I (Severe Accident I)

| 좌장 김동억(Dong Eok Kim), 안상모(Sang Mo An) **| 발표장소** 201호

09:00 Accident Analysis of Micro-Nuclear Reactor by Non-Injection Systems as Portable Submergence Reactor (PSR): Approaching to Concept of Perfect Safety
Tae Ho Woo and Chan Young Cho (CUK)

09:20 Procedure Development of Drone Risk Analysis
YongTae Kim, YunSeon Chung, GeumYong Lee, and WooSik Jung(Sejong Univ.)

09:40 Numerical Investigation of Nonlinear Concrete Fracture Behavior using Cohesive Zone Modeling
Habeun Choi(KAERI), Kyoungsoo Park(Yonsei Univ.)

10:00 The Hydrogen Recombination Characteristics of a Grid-Type PAR during a Spray Operation
Jongtae Kim, Seongho Hong, Ki–Han Park, Jin–Hyuk Kim, and Jeong–Yoon Oh(KAERI)

10:20 CFD Simulation of Boiling Two-Phase Flows with Different Thermophysical Properties for Core-Catcher Cooling System
Sangmin Kim, Keunsang Choi, and Jeahoon Jung(KAERI)

10:40 Coffee Break

11:00 Integral Test of Ex-vessel Debris Bed Formation in a Pre-flooded Reactor Cavity
Sang Mo An, Seokgyu Jeong, Ki Han Park, Keun Sang Choi, and Chang Wan Kang(KAERI)

11:20 Preliminary Modelling of Ex-vessel Debris Bed Formation in a Pre-flooded Reactor Cavity
Seokgyu Jeong, Sang Mo An, Ki Han Park, Chang Wan Kang, and Keun Sang Choi(KAERI)

11:40 Characteristics of Single and Two-phase Flows through Porous Particle Beds
Jong Seok Oh, Min Gu Kang, and Dong Eok Kim(CAU), Sang Mo An and Hwan Yeol Kim(KAERI)

12:00 Coolability Analysis of Ex-vessel Corium in OPR1000 Pre-flooded Reactor Cavity
Jaehoon Jung, Donggun Son, and Sang Ho Kim(KAERI)

12:20 COCCI for a Simulation of Molten Core and Concrete Interaction During a Severe Accident
Sang Ho Kim, Jaehyun Ham, Hwan–Yeol Kim, Rae–Joon Park, and Jaehoon Jung(KAERI)

6D
5. 20 (금)

중대사고 II (Severe Accident II)

| 좌장 이두용(Doo Yong Lee), 이병희(Byeonghee Lee) **| 발표장소** 201호

09:00 Study on Degradation of NBR under Simulated Post-Accident Environment of Severe Accident
Inyoung Song and Ji Hyun Kim(UNIST), Deahwan Kim, Daewon Cho, Taehyun Lee, and Kyungha Ryu(KIMM)

09:20 Measurement of the Heat Load Imposed on the Reactor Vessel Depending on the Debris Bed Under an IVR Condition
Joonsoo Park, Haekyun Park, Seongil Baek, and Bumjin Chung(KHU)

09:40 Numerical Analysis on IVR-ERVC using Lagrangian CFD – Modeling & Preliminary Results
Tae Hoon Lee, So Hyun Park, Hoon Chae, and Eung Soo Kim(SNU), Yeon–Gun Lee(JNU)

10:00 Elemental Analysis of Metallic and Non-metallic Aerosols Formed by Reaction of Molten Iron with Concrete
Jei–Won Yeon, Minsik Kim, and Jae Hoon Kim(KAERI)

10:20 Aerosol Deposition Characteristics inside Horizontal Piping
Woo Young Jung, Ji Hun Kang, Dong Young Lee, Min Beom Hur, Jong Chan Lee, Hyun Chul Lee, Dong Hyun Lee, and Doo Yong Lee(FNC Tech.), Byonghee Lee and Kwang Soon Ha(KAERI)

10:40 Coffee Break

11:00 Pool Scrubbing Characteristics under Horizontal Gas Injection
Woo Young Jung, Dong Young Lee, Ji Hun Kang, Min Suk Ko, Beum Kyu Kim, Jong Chan Lee, and Doo Yong Lee(FNC Tech.), Byonghee Lee and Kwang Soon Ha(KAERI)

11:20 Analyses on the Important Fission Products for Source Term Estimation during a Severe Accident
Yoonhee Lee, Yong Jin Cho, and Kukhee Lim(KINS)

11:40 Preliminary Analyses on Importance of Iodine Chemistry Models in Aqueous Phase during a Severe Accident
Yoonhee Lee and Yong Jin Cho(KINS)

12:00 Aerosol Retention Test in Water-Filled Tank for Bypass Accident Mitigation System
Byeonghee Lee and Kwang Soon Ha(KAERI)

6E
5. 19 (목)

안전현안 및 화재방호 (Safety Issues and Fire Protection)

| 좌장 오계민(Kyemin Oh), 김주성(Joosung Kim) **| 발표장소** 201호

13:30 Formalism Study in Nuclear Emergency Response: Path-Finding Problem
Geon Kim, Gibeom Kim, and Gyunyoung Heo(KHU)

13:50 Effect Assessment of Safety Culture-related Contributors to the Events Occurred using Social Network Analysis Method
Manwoong KIM(KINS), Byung Joo MIN and Wooseok JO(UNIST)

14:10 Establishment of Sampling Scenarios for Nuclear Activity Verification
Suhui Park, Jiyoung Han, and Yongmin Kim(DCU)

14:30 Development of the ProFire-PSA_Model for a Fire Probabilistic Safety Assessment
Dae Il Kang and Yong Hun Jung(KAERI)

14:50 Coffee Break

15:10 A Review of Representative Fire Incidents in Nuclear Power Plants
Ik Hyeon Jang and Yong Hun Jung(KAERI)

15:30 Integrity Assessment of Cables in Zero-power Reactor Room under Postulated Design-based Electrical Fire
Jae-Min Jyung and Yoon-Suk Chang(KHU)

6F
5. 19 (목) – 20 (금)

리스크 및 중대사고와 현안 (Risk, Severe Accident, and Issues) – POSTER

| 좌장 김종현(Jong Hyun Kim), 홍성완(Seong-Wan Hong) **| 발표장소** 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

PO6F01 Use of the SAM-L2HRA Method for Evaluation and Improvement of SAMG Strategy
Jaewhan Kim and Soo-Yong Park(KAERI)

PO6F02 A Study on the Effect of MACCS Plume Rise Models on the Off-Site Consequence
Sora Kim and Seung-Cheol Jang(KAERI)

PO6F03 A Study on a Korean SMR EPZ Determination with NEI and NRC Approaches
Kilyoo Kim, Sangbaik Kim, and Seokjung Han(KAERI), Omar Natto(KACARE)

PO6F04 The Preliminary Seismic Probabilistic Safety Assessment for Fuel Examination Facility
Seung–Cheol Jang and Jeong–Gon Ha(KAERI)

PO6F05 Analysis of Hydrogen Generation during TMI-2 Severe Accident using CINEMA
Rae–Joon Park, Dong Gun Son, Jun Ho Bae , Sung Won Bae, and Kwang Soon Ha(KAERI),
Bub–Dong Chung (FNC Tech.)

PO6F06 Preliminary Calculation on the Conceptual Design of PCSG System for the i-SMART Plant using MELCOR1.8.6
Jong Hwa Park and Sang Ho Kim(KAERI)

PO6F07 Improvement of a CFD Model for Hydrogen Recombination by Passive Auto-Catalytic Recombiners
Jongtae Kim, Hyoung Tae Kim, and Dehee Kim(KAERI), Jin Sung Park, Yongjin Cho, and Kuk Hee Lim(KINS)

PO6F08 Simulation of Containment Behavior during a Station Blackout Accident in APR1400 Using MELCOR Code with Spray and PAR Models
Hyoung Tae Kim, Sang–Baik Kim, and Jongtae Kim(KAERI)

PO6F09 Jet Pool Scrubbing Model Development for Evaluating Radioactive Aerosol Retention in FK2
Sung Il Kim, Byeong Hee Lee, and Kwang Soon Ha(KAERI)

PO6F10 Comparative Analysis of CCI-4 Test Simulation using COCCI and CORQUENCH
Jaehyun Ham, Sang Ho Kim, and Jaehoon Jung(KAERI)

PO6F11 Estimation of Radioactivity Release during LOCA using Machine Learning
Keon Yeop Kim, Youngsuk Bang, and So Eun Shin(FNC Tech.), Jaehyun Cho and Jin Hee Park(KAERI)

PO6F12 Applications of Neural Network to Predict Reactor Vessel Failure Time for Various Component Failures during Severe Accident
Yeonha Lee and Jeongik Lee(KAIST), Yujung Choi(KHNP)

PO6F13 Effect of Frequency Contents of Ground Motion on Hysteretic Behavior of Steam Generator Blowdown Tank
Na–Hyun Kim and Tae–Hyun Kwon(KAERI)

PO6F14 Sensitivity Analysis of Mitigation Action Time on Extended SBLOCA and TLOFW for APR1400
Kyu–Byung Lee, Dong–Ho Shin, and Ji–Hun Kim(KINS)

PO6F15 Developed Modeling of Spray Removal Rates for Design Basic Accidents
Seung Chan LEE(KHNP)

제7분과

방사선 방호 (Radiation Protection)

7A
5. 19 (목)

방사선 방호 (Radiation Protection)

| 좌장 신창호(Chang-ho Shin), 최승진(Seung Jin Choi) | 발표장소 301호

09:00 From Lab to Pilot-scale System for Filter Performance Test to Remove Radioactive Aerosol from Decommissioning of Nuclear Power Plant
Min-Ho Lee, Hee Kwon Ku, Hyun Chul Lee, Woo Young Jung, and Doo Yong Lee(FNC Tech.), Hyunjin Boo and Byung Gi Park(SCHU), Deok Hee Lee(SOLTI), Kap Hyun Yoo(CENTURY)

09:20 Dose Estimation due to Increasing Nuclear Power Plants in Korea and China Under Normal Operation
Han Jin Kim, Ji Seok Kim, Jeen Hyeng Kwon, and Young Jin Park(KAERI), Yong Kyun Kim(HYU)

09:40 A Study for Quantitative Analysis of I-129 in Radioactive Waste using a High-temperature Combustion Furnace
chae yeon Lee, ji young Park, hyun cheol Kim, and jong myoung Lim(KAERI)

10:00 Photo-neutron Emission Mechanism at Low-energy Photon Interaction
Mahdi Bakhtiari(POSTECH), Nam-Suk Jung and Hee-Secok Lee(PAL)

10:20 Coffee Break

초청발표

10:40 Potential Application of Adverse Outcome Pathways (AOPs) in the Risk Assessment of Low Dose Radiation (LDR)
You Yeon Choi and Ki Moon Seong (KIRAMS)

11:20 ICRP Pregnant-female Mesh-type Reference Computational Phantoms – Development of Maternal Phantoms
Bangho Shin, Chansoo Choi, Suhyeon Kim, Haegin Han, Sungho Moon, Gahee Son, Hyeonil Kim, and Chan Hyeong Kim(HYU), Thang Tat Nguyen(HUST), Yeon Soo Yeom and Beom Sun Chung(Yonsei Univ.)

11:40 Study on the Low Dose Hyper-Radiosensitivity through γ-H2AX Foci Analysis
Tae-Kyu Kim and Eun-Hee Kim(SNU)

7B
5. 19 (목) – 20 (금)

방사선 방호 (Radiation Protection) – POSTER

| 좌장 김희령(Hee Reyoung Kim), 박병건(Byung-Gun Park) | 발표장소 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

P07B01 Radiological Consequence Analysis of a TMI-2 Type Accident at Barakah Nuclear Power Plant Unit 1
Mohannad Almteiri and Juyoul Kim(KINGS)

P07B02 Activation Characteristics for Concrete Shielding Wall of KRR-2 ; Verification of Technology using In-situ Measurement
ihyun Yu, Byungchae Lee, Seunggi Jeong, Jonghoa Kim, and Jangsoo Suh(SAETEC), Sangbum Hong(KAERI)

P07B03 A Study on the Safety of Radiation Exposure Dose Through Local Products Around Fukushima Nuclear Accident
Sangbok Lee, Jeongsoo Park, Seokhwan Lee,and Kwanggyun Choi(Sunkwang T&S),
Hyunchae Lim, Kangmun Shin, and Doeun Kim(Gachon Univ.)

P07B04 Preliminary Evaluation of Radiation Shielding for Fluid System Equipment Design of Small Modular Reactor
Kim Woo yong, Ko Jaehun, and Kim Moon oh(KONES)

P07B05 Comparison Analysis of Wind Distribution using Different Average Wind Data Measured Around The Hanul Nuclear Power Plant
Jin Sik Choi, Jae Wook Kim, Han Young Joo, and Joo Hyun Moon(Dankook Univ.), So Yun Jeong(ORBITECH)

P07B06 Domestic Model and Code Development for the Cost-estimation of Area Decontamination After Nuclear Power Plant Accident
GeeMan Lee, HyunSeok Noh, GeumYoung Lee, and WooSik Jung(Sejong Univ.)

P07B07 Determination of Emergency Planning Zone Distance for SMART Reactor in Saudi Arabia
Omar Natto and Sultan AlFafi(KACARE), Seok Jung Han, Kil yoo Kim, and Sang Baik Kim(KAERI)

P07B08 Study on the Contamination Monitoring System of Large Groups through the Fukushima Daiichi Nuclear Power Plant Accident
Young–Min Lee and Hyun–Ha Lee(KINS)

P07B09 Preliminary Estimation of Ar Gas Activation at Electron Beam Dump of PAL-XFEL
UkJae Lee, Nam–Suk Jung, Oryun Bae, and Hee–Seock Lee(PAL)

P07B10 Development of Virtual Gamma-ray Energy Spectrum Database under Various Conditions using MCNP Simulation
Yoomi Choi, Young–Yong Ji, and Sungyeop Joung(KAERI)

P07B11 Novel Podophyllotoxin Derivative Exerts Effects of an Anti-cancer Drug and a Radiosensitizer
Jin–Hee Kwon, A–Ram Kang, Youngha Kim, and Jong Kuk Park(KIRAMS)

P07B12 Adverse Outcome Pathway Application to Radiation Risk Assessment on Leukemia
You Yeon Choi, Younghyun Lee, and Ki Moon Seong(KIRAMS)

P07B13 Impact of Risk Factors and Components of Metabolic Syndrome for Sleep Disorder of Korean Workers: Preliminary Study
Sook Hee Sung, Nam Hee Kim, So Ra Ahn, Yong Hwan Lee, Sun Pyo Hong, and Seung Jin Choi(KHNP)

P07B14 A Study of Drone-based Aerial Radiation Monitoring System Operation
Beom–Kyu Kim, Hee–Kwon Ku, Min–Bum Heo, Ji–Hoon Kang, and Sang–Hun Shin(FNC Tech.),
Hwa–Jeong Han and Byung–Gi Park(SCHU)

P07B15 Study on 3-Dimensional Image Reconstruction Algorithm based on the Radiation Monitoring Data
Hwa Jeong Han, Hyunjin Boo, Jonghyeon Kim, and Byung Gi Park(SCHU),
Sang Hun Shin and Beom Kyu Kim(FNC Tech.)

P07B16 Comparison of Scintillation Light Output Ratios between Simulation and Experiment
Seunghyeon Kim, Siwon Song, Jae Hyung Park, Jinhong Kim, Taeseob Lim, and Bongsoo Lee(CAU)

P07B17 Calibration for the Liquid Monitoring System of NaI(Tl) Scintillator
Yi–Sub Min and Jeong–Min Park(KAERI)

P07B18 Background Spectrum Simulation for In-situ Measurement Technology
Byungchae Lee, Seunggi Jeong, Jihyun Yu, Jonghoa Kim, and Jangsoo Suh(SAETEC), Sangbum Hong(KAERI)

P07B19 Inhalation Dose Assessment of Workers in Welding Electrode Manufacturing Industry
Seong Yeon Lee, Byung Min Lee, Jong Hyeok Park, and Kwang Pyo Kim(KHU)

P07B20 Derivation of Public Dose Distribution Around the Radioactive Waste Disposal Facility
Ji Woo Kim, Hyun Su Seo, Yong Ho Jin, Ki Hoon Kim, and Kwang Pyo Kim(KHU)

P07B21 Development of a Portable Direction Finding Device of Radioactive Source using Quadrupole NaI(Tl) Detectors
Hyunae Park and Changsu Park(KINS)

제8분과 방사선 이용 및 기기 (Radiation Utilization and Instrumentation)

8A 5. 19 (목) 방사선 이용 및 기기 1 (Radiation Utilization and Instrumentation 1)

| 좌장 문명국(Myungkook Moon), 김한수(Han Soo Kim) | 발표장소 302호

09:00 Multi-Radioisotope Identification Using Convolutional Neural Networks Trained with Two-Dimensionally Transformed Gamma Spectrum Data Measured Using CsI(Tl) Spectrometer
Yong Hyun Kim, Sangmin Lee, Han Cheol Yang, and Yong Kyun Kim(HYU)

09:20 Calibration Measurements of Short-lived Nuclide of Particulate using Comparative Measurements Between HPGe and Radon Detectors
Young Jin Park, Ji Seok Kim, Young Soo Kim, Jong Woo Kim, Han Jin Kim, Jin Hyung Kwon, and Hyung Gon Kim(KAERI)

09:40 The Adhesive Effect of the Positron Source Investigated by Positron Annihilation Lifetime Spectroscopy (PALS)
Youngsu Jeong, Youngrang Uhm, Gwangmin Sun, Jaegi Lee, Boyoung Han, and Sungho Ahn(KAERI),
Yougmin Kim(DCU)

10:00 Wireless Underwater SiPM-based Gamma Spectroscopy for Real-time Marine Radioactivity Monitoring
Min Sun Lee, Mee Jang, Hyemi Cha, and Jong-Myoung Lim(KAERI),
SooMee Kim, Jeong-Min Seo, and Seung-Jae Baek(KIOST)

10:20 Coffee Break

10:40 Preparation of Gamma Spectrum Dataset by Monte Carlo Simulation for AI-based Radiological Characterization
Jeenhyeng Kwon, Youngsu Kim, Jiseok Kim, and Hanjin Kim(KAERI), Yongkyun Kim(HYU)

11:00 Feasibility of Fast Neutron Source in Versatile Thorium Target System
Kwangho Ju and Yonghee Kim(KAIST)

8B 5. 20 (금) 방사선 이용 및 기기 2 (Radiation Utilization and Instrumentation 2)

| 좌장 김종열(Jongyul Kim), 김종범(Jong Bum Kim) | 발표장소 302호

09:00 Real-time Contextual Data-Updated 3-D Radiation Image Reconstruction for Large-Area Hybrid Gamma Imager
Sehoon Choi, Junyoung Lee, Goeun Lee, Doyeob Kim, and Chan Hyeong Kim(HYU)

09:20 Effective Slice Thickness in Limited-angle Tomography
Seungjun Yoo, Minsu Ryoo, Jinwoo Kim, and Ho Kyung Kim(PNU)

09:40 Deblurring Low-Resolution X-ray Images Using CNN
Seokwon Oh, Jinwoo Kim, and Ho Kyung Kim(PNU)

10:00 Assessment of Geometric Misalignments in Cone-beam CT using Ball Phantom Trajectories
Minsu Ryoo, Seungjun Yoo, Jinwoo Kim, and Ho Kyung Kim(PNU)

10:20 Demonstration Plan of 99Mo Manufacturing System Development for New Research Reactor
Seung-Kon Lee, Suseung Lee, Kyungseok Woo, and Mal-Go-Bal-Gae-Bit-Na-La Yoo(KAERI)

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5. 19 (목) – 20 (금)

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

| 좌장 김기현(Geehyun Kim), 정만희(Manhee Jeong) **| 발표장소** 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

PO8C01 Single Crystal Growth Technology of Room-temperature Compound Semiconductors for Radiation Detection and a Role of the Radiation Equipment Fab. Center
Han Soo KIM, Chang Goo KANG, Jang Ho HA, Jeong Min PARK, Young Soo KIM, and Soo Jin KIM(KAERI)

PO8C02 Test of Neutron Transmutation Doping of SiC by Implantation of Phosphorous
Byung–Gun Park, Gi–Doo Kang, and Junesic Park(KAERI)

PO8C03 Effect of Focal Spot Size on Dose Calculation of a $ZnWO_4$ Thin-Film Scintillator for High-Resolution X-ray Imaging
Jaewoo Lee, Ju Hyuk Lee, Heon Yong Jeong, and Sung Oh Cho(KAIST)

PO8C04 Development of GATE Simulation for X-ray Ghost Imaging
JUNHYEOK KIM, JISUNG HWANG, GYOHYEOK SONG, WONKU KIM, KILYOUNG KO, and GYUSEONG CHO(KAIST)

PO8C05 Simulation of Nuclear Material Weighing System using Multiplicity Measurement based on Fast Neutron Detection
Suyeon Hyeon, Minki Chae, Seohyun Cho, and Manhee Jeong(JNU)

PO8C06 Status of Irradiation Testing of ARAA Material in HANARO
Kee–Nam Choo, Sung–Woo Yang, Sung–Jae Park, and Yoon–Taek Shin(KAERI)

PO8C07 In-reactor Experiment for Cobalt SPND at HANARO IP Irradiation Hole
Seongwoo Yang, Sung–Jae Park, and Yoon–Taeg Shin(KAERI)

PO8C08 Improving the Operation of the Radiation Monitoring System (RMS) in KOMAC
Jeong–Min Park and Yi–Sub Min(KAERI)

PO8C09 Low Operating Voltage and Small Size SPAD Design for Radiation Monitoring System in Nuclear Power Plants
Jinseok Oh and Jungyeol Yeom(Korea Univ.), Inyong Kwon(KAERI)

PO8C10 Image Stitching System for High-Resolution X-ray Imaging
Heon Yong Jeong, Ju Hyuk Lee, Seung Uk Cheon, and Sung Oh Cho(KAIST)

PO8C11 Maximum-Likelihood Weight Parameters for Reconstructing Dual-Energy Radiography
Hubeom Shin, Jinwoo Kim, Seungjun Yoo, and Ho Kyung Kim(PNU)

PO8C12 Thermal Stability Evaluation of Graphite Target through Induction Heating
Jae Young Jeong, Jae Chang Kim, Dong–geon Kim, and Yong Kyun Kim(HYU), Taek Jin Jang(CAU), Wonjun Lee and Ju Hahn Lee(IBS)

PO8C13 Performance Evaluation of CZT Radiation Detector Mounted on Unmanned Aerial Vehicle for Aerial Radiation Measurement
MinBeom Heo, HeeKwon Ku, BeomKyu Kim, and SangHun Shin(FNC Tech.), HwaJeong Han and ByungGi Park(SCHU)

PO8C14 Reconstruction of Raster-scanned Backscatter X-ray Radiography using Radial Basis Functions
Junho Lee, Jinwoo Kim, Seungjun Yoo, and Ho Kyung Kim(PNU)

PO8C15 A Comparison of Performance between Stilbene and 3He Detectors for Neutron Sonde
Ill–hyuk Han and Geehyun Kim(SNU)

PO8C16 A Study of Isotope Target Capsule Crushing Device for Exposure Reduction
Euntae Kim and kanghyuk Choi(KAERI)

PO8C17 Introduction of Beam Profile Monitoring System Using Phosphor Screen and TE-cooled CMOS Camera
Gwang–il Jung, Eunjoo Oh, YoungJun Yoon, DongSeok Kim, and YongSeok Hwang(KAERI)

PO8C18 Radiation Shielding Simulation and Test Method for Sr-82/Rb-82 Generator Development
Kye–Ryung Kim, Dong–Hwan Kim, and Yong–Sub Cho(KAERI)

PO8C19 Dry Patterning Process of Luminescent Graphene Quantum Dots by Ion-beam Assisted Chemical Vapor Deposition
Jun Mok Ha, Young Jun Yoon, Jae Kwon Suk, Young Seok Hwang, Chan Young Lee, and Sun Mog Yeo(KAERI)

PO8C20 Graphene-tin Oxide Hydrid Supercapacitor Electrode by Electron Beam Irradiation
Na Eun Lee, Seung Uk Cheon, and Sung Oh Cho(KAIST)

PO8C21 Preliminary Study of Identification/Rejection of Pile-ups and Baseline Correction in High Radiation Fields Induced by Accelerators using an EJ276G Plastic Scintillator
Sangho Lee, Gyohyeok Song, Hyunwoong Choi, Jaehyun Park, Hojik Kim, and Gyuseong Cho(KAIST)
Wonku Kim(RNMERC)

PO8C22 Preliminary Study to Disperse Carbon Nanotubes in Organic Solvents using Electron-beam Irradiation
Cheolhyeon Lee, Junhyuk Jeong, Jun ha Park, and Seung Hwa Yoo(JBNU)

PO8C23 Thermally and Mechanically Enhanced Boehmite/HDPE Hybrid Nanocomposite Film Prepared by Electron Irradiation
Ju Hyuk Lee, Sang Yoon Lee, Heon Yong Jeong, and Sung Oh Cho(KAIST)

PO8C24 Boehmite/Polyethylene Hybrid Nanocomposite Separator Crosslinked by Electron Irradiation for Lithium-Ion Batteries
Sang Yoon Lee, Ju Hyuk Lee, Sung Woo Kim, and Sung Oh Cho(KAIST)

제9분과

양자공학 및 핵융합기술 (Quantum Engineering and Nuclear Fusion)

9A
5. 19 (목)

양자공학 및 핵융합기술(Quantum Engineering and Nuclear Fusion)

| 좌장 김석권(Suk-Kwon Kim), 이동원(Dong Won Lee) | 발표장소 302호

13:30 Multipacting Simulation of 350 MHz HWR Cavity at KOMAC
Jeong-Jeung Dang, Han-Sung Kim, Seung-Hyun Lee, and Hyoek-Jung Kwon(KAERI(KOMAC))

13:50 KAERI Divertor Plasma Simulator for Studying Material Damage by Deuterium Ions and Divertor Cooling Technique
Kil-Byoung Chai and Duck-Hee Kwon(KAERI), Soohyun Son(KFE)

14:10 Deep Learning-based Fokker-Planck-Landau Collision Operator for Fusion Plasma Simulation: A Preliminary Study
Hyungjun Noh, Jimin Lee and Eisung Yoon(UNIST)

14:30 Gyrokinetic Validation Study Using KSTAR Plasma
Donguk Kim, Myeongwon Lee, and Choongki Sung(KAIST), Jisung Kang, Sumin Yi, and Jaemin Kwon(KFE), Jeff Candy(GA), Eisung Yoon(UNIST)

14:50 Design and Construction of Pulsed Magnetic Mirror Device
Dong Geun O, Su Cheol Hwang, and Choong Ki Sung(KAIST), Bong Ki Jung(KAERI)

9B
5. 19 (목) – 20 (금)

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

| 좌장 이동원(Dong Won Lee), 권혁중(Hyeok-Jung Kwon) | 발표장소 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

PO9B01 Comparison of the Temperature Control System for the Space Simulation Chamber
Hyeok-Jung Kwon, Han-Sung Kim, Jeong-Jeung Dang, Sang-Pil Yun, Seunghyun Lee, Young-Gi Song, Won-Hyeok Jung, Kui-Young Kim, and Kye-Ryung Kim(KAERI(KOMAC))

PO9B02 Test for New ACCT Electronics and Plan for ACCT System at KOMAC Space Radation Testing Beamline
Sang-Pil Yoon, Young-Gi Song, Han-Sung Kim, and Hyeok-Jung Kwon(KAERI(KOMAC))

PO9B03 Thermal, Vacuum and Beam Window Design of the Space Radiation Simulation Chamber Based on Proton Beam for Testing Space Parts
Han-Sung Kim, Hyeok-Jung Kwon, Jeong-Jeung Dang, Sang-Pil Yoon, Seunghyun Lee, and Dong-Hwan Kim(KAERI(KOMAC))

PO9B04 Embedded Based Control System for Irradiation Tests of Space Simulation Environment
Young-Gi Song, Sang-Pil Yoon, Han-Sung Kim, and Hyeok-Jung Kwon(KAERI(KOMAC))

PO9B05 Design and Implementation of the Graphical User Interface based on CSS for the KOMAC LINAC and Beamlines
Sung-yun Cho, Jae-Ha Kim, and Young-Gi Song(KAERI(KOMAC))

PO9B06 Fabrication of a Plasma Chamber with Water Cooling for a Microwave Ion Source at KOMAC
Dae–Il Kim, Mun–Ho Jo, and Sang–Hun Lee(KAERI(KOMAC)), Yu–Seok Kim(DU)

PO9B07 Measurement of Metal Ion Beam Charge Distribution Depending on the Arc Power using MEVVA Ion Source
Seung–Ho Lee and Hyeok–Jung Kwon(KAERI(KOMAC))

PO9B08 Estimation of Linac Alignment Error using Singular Value Decomposition of the Response Matrix
Seunghyun Lee, Hyeok–Jung Kwon, Han–Sung Kim, Jeong–Jeung Dang, Sang–Pil Yoon, and Dong–Hwan Kim(KAERI(KOMAC))

PO9B09 Improvement of the Automated Operating Parameter Setting System for the Beam Service
Jae–Ha Kim, Young–GI Song, and Sung–yun Cho(KAERI(KOMAC))

PO9B10 Beam Commissioning Results of Proton Injector Test Stand for the KOMAC
DongHwan Kim, Hyeok–Jung Kwon, Jeong–Jeung Dang, Seung–Hyun Lee, Sang–Pil Yoon, and Han–Sung Kim(KAERI(KOMAC))

PO9B11 Simplified Alignment in Replacement of Drift Tube for 20 MeV Proton Linac at KOMAC
Mun–Ho JO, Won–Hyeok JUNG, and Dae–Il KIM(KAERI)

PO9B12 Test Results of the RF Reference System for the RAON SCL3
Kyungtae Seol, Doyoon Lee, Hyojae Jang, Ohryong Choi, Kitaek Son, and Hyunik Kim(IBS)

PO9B13 Self-consistent Calculation of the Neutron Emission in KSTAR Power Upgrade
Jong–Gu Kwak, S.C. Hong, and Y.S. Lee(KFE)

PO9B14 Neutron Diagnostics for D-D Fusion Neutron on KSTAR
Youngseok Lee, Yong–Un Nam, Jong–Gu Kwak, and Heesoo Kim(KFE)

PO9B15 Particle Motions in Magnetic Island
Sungpil Yum, Eisung Yoon, Wonjun Tae, Dongkyu Kim, and Min Sup Hur(UNIST)

PO9B16 Radioactive Waste Management Plan According to the Replacement of the KSTAR Device's Divertor
Heesoo Kim, Young Seok Lee, and Kaprai Park(KFE)

PO9B17 Comparison of Mechanical Analysis Results by ARAA Properties on the Different Development Stage
Seong Dae Park, Jae–Sung Yoon, and Suk–Kwon Kim(KAERI), Mu–Young Ahn(KFE)

PO9B18 Status of the Experimental Research for Vapor Adsorption in Gas Flow Using Molecular Sieve
Chang Wook Shin, Suk–Kwon Kim, Hyung Gon Jin, Dong Won Lee(KAERI), Seok–Kwon Son, Youngmin Lee, and Mu–Young Ahn(KFE)

제10분과 원전 건설 및 운영 기술 (Nuclear Power Plant Construction and Operation Technology)

10A 5. 19 (목) 원전건설 및 운영기술 1 (Plant Construction & Operation 1)

| 좌장 함대기(Daegi Hahm), 구경회(Gyeong-Hoi Koo) | 발표장소 301호

13:30 Influence of Film Forming Amine on Fouling Behavior of Steam Generator Tube in PWR at 270 ℃
Soon-Hyeok Jeon, Yong-Beom Lee, and Do Haeng Hur(KAERI)

13:50 Effect of Corrosion Product Concentration on Thermal Conductivity of Crud
Yunju Lee, Junhyuk Ham, Seung Chang Yoo, Dae Hyeon Park, and Ji Hyun Kim(UNIST)

14:10 Characteristics of Reduced-Scale High Damping, Lead, and 3D Laminated Rubber Bearings for Seismic Isolation for Nuclear Facilities
BONG YOO, Jae-Han LEE, Gyeong-Hoi KOO, and Jeong-Soo RYU(KAERI)

14:30 Auto-Generation Technique of Numerical Elements for Near-Far Field Soil in Three Dimensional Soil-Structure Interactive Analysis System
Choon-Gyo Seo, Byung-Chul Park, Gyu-Seong Woo, and Yong-sun Lee(KEPCO E&C), Jin-Seob Kwon(KHNP)

14:50 Coffee Break

15:10 Seismic Fragility Assessment of Fuel Assembly for Probabilistic Safety Assessment Considering Potential Failure Modes
Jae-Wook Jung and InKil Choi(KAERI)

15:30 Evaluation of Vertical/Horizontal Ratio of Earthquake Ground Motion in Korea using Recorded Motions From Gyeongju and Pohang Earthquakes
Jeong-Gon Ha and In-Kil Choi(KAERI)

15:50 Dynamic Characteristics and Seismic Response Analysis by Mass Eccentricity of Isolated Components
Sangjin Ma and Taemyung Shin(KNUT)

10B 5. 20 (금) 원전건설 및 운영기술 2 (Plant Construction & Operation 2)

| 좌장 곽신영(Shinyoung Kwag), 박준희(Jun-hee Park) | 발표장소 301호

09:00 Calculations of an Effective Plant Area for An Aircraft Crash Into a Structure
IkJung Yun(KINS)

09:20 Finite Element Modeling of Control Element Drive Mechanism for Elastic-Plastic Analysis
Wonho Lee, Jinseok Park, and Jongmin Kim(KEPCO E&C)

09:40 Predicting the Pressures of Shock Waves Caused by A Steam Explosion in the Reactor Cavity using ALE and FSI Method
Seong-Kug Ha(KINS), Yeo-Hoon Yoon and Kyoung-Taek Lee(KOSTECH)

10:00 Performance-based Uncertainty Quantification of Recover Factors in Concrete Damage Plasticity Model for a Squat Shear Wall
Sangwoo Lee, Abhhinav Gupta, and Giorgio T. Proestos(NCSU), Ho-Young Son and Bu-Seok Ju(KHU)

10:20 Coffee Break

10:40 Numerical Analyses of 1400 MWe Power Plant under HELB-induced Blast Wave
Tae-Yong Kim and Yoon-Suk Chang(KHU)

11:00 Uncertainties Qualification of Prestressed Concrete Containment under Ultimate Pressure
hoyoung Son, sangwoo Lee, joon Sagong, and bu-seog Ju(KHU)

11:20 Recurrent Neural Networks for Voltage Control in the Case of Small Modular Reactor Integration in a High Renewable Energy Isolated Grid
HAROLD CHISANO OYANDO, TIMOTHY NGUMBI KANYOLO, and CHOONGKOO CHANG(KINGS)

11:40 Configuration Management System under Development in the SMR Project
Kook-Nam Park and Yongse Kwon(KAERI), Sung-Kyu Lee and Hyejin Yu(DBV), Kyu-Suk Ahn(DSME)

12:00 Investigation of the Performance of Packed Bed Thermal Energy Storage System Varying Design Parameters
Jeong-Won Han, Je-Young Moon, Ari Park, and Bum-Jin Chung(KHU)

10C
5. 19 (목) – 20 (금)

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

| 좌장 김종욱(Jong-Wook Kim), 김태순(Tae-Soon Kim) **| 발표장소** 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

PO10C01 Comparison of Application of ANSI/ANS3.2 Quality Assurance Inspection and Operational Technology Capability Inspection
ChanGyu HAN(KINS)

PO10C02 Simulative Study on Generator Overvoltage
Sungbaek Park, HoonKeun Lee, Kyungseok Lee, and Young-Mi Kim(KINS)

PO10C03 Radiological Methodology for Estimation of Crud Thickness in PWR Coolant System
Ji-Hoon Kang, Dong-Seok Lim, and Young-Jin Kim(FNC Tech.), Yong Soo An and Kyoung Doek Kim(DOLRAS), Wook Sohn and Kahee Jeong(KHNP CRI)

PO10C04 Methodology Study for Prediction of Crud Deposition in Primary Coolant Circuit of PWRs
Seungjin Seo and Sungyeol Choi(SNU), Beomkyu Kim and Dongseok Lee(FNC Tech.), Hwajeong Han and Byunggi Park(SCHU), Wook Sohn and Ga Hee Jeong(KHNP)

PO10C05 Seismic Fragility Evaluation for Main Steam Line of Seismically Isolated APR1400 NPP
Bub Gyu Jeon, Sung Wan Kim, and Da Woon Yun (PNU), Dae gi Hahm and Min Kyu Kim (KAERI)

PO10C06 Seismic Fragility Evaluation of NPP Components Based on the Shaking Table Test Data
In-Kil Choi and Jae-Wook Jung(KAERI), Dong-Uk Park(KOCED)

PO10C07 Development of Three Dimensional Seismic Isolator for Nuclear Facility Components
Jin-Young Jung and Gyeong-Hoi Koo(KAERI)

PO10C08 Seismic Sloshing Analysis for Research Reactor Pool
Taejin Kim, Kwangsub Jung, and Jinho Oh(KAERI)

PO10C09 Preliminary Seismic Safety Evaluation of Radioactive Waste Disposal Facility Site (Centering Around RWD Seismic Station) Considering 2016 Gyeongju Earthquake
Hoseon Choi and Seung Gyu Hyun(KINS)

PO10C10 Effect of Structure-Anchor-Component Interaction on the Safety-related Component for Nuclear Power Plants
Junhee PARK(KAERI)

PO10C11 Influence Analysis of Tuned Mass Damper on the Existing Piping Stress Analysis
Hwanho Lee, Jinsung Kwak, Jinho Oh, and Gyeong–Hoi Koo(KAERI), Shinyoung Kwag(HNU)

PO10C12 Methodology for Nonlinear Seismic Analysis in Assessment of Nuclear Power Plant Structures
Ilhwan Moon, Doyeon Kim, Youngsuk Lee, and Jaehee Kim(KEPCO E&C)

PO10C13 Assessment of Spatial Variation of Seismic Waves Through Analysis of Earthquake Records at Hamaoka Nuclear Power Plant
Hae–Yeon Ji, Jeong–Gon Ha, MinKyu Kim, and Dae–Gi Hahm(KAERI)

PO10C14 A Study on Seismicity Parameters with Gutenberg-Richter Law for Potential Nuclear Site in Kalimantan, Indonesia
Ausatha Rabbanny Yanto and Eric Yee(KINGS)

PO10C15 Failure Criteria for a Carbon Steel Pipe Tee under In-plane Cyclic Loading
Sung–Wan Kim, Da–Woon Yun, and Bub–Gyu Jeon(SESTEC), Dae–Gi Hahm and Min–Kyu Kim(KAERI)

PO10C16 Regulatory Issues Regarding the Ultimate Pressure Capacity Assessment of the Containment Buildings and Relevant Research Results
Seong–Kug Ha, Ik–Jung Yun, Sang–Yun Kim, and Dong–Hyun Kim(KINS)

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

11A 원자력정책, 인력 및 협력 1 (Nuclear Policy, Human Resources and Cooperation 1)

5. 19 (목)

| 좌장 이현철(Hyun Chul Lee), 정원표(Won Pyo Jeong) | 발표장소 삼다홀A

09:00 An Analysis of Media Reports on Nuclear Accidents and Nuclear Safety
SeongKyung Cho(Myongji Univ.), Hansoo CHANG(KFE)

09:20 A Study on Nuclear News Frames Through Sentiment Analysis: Focused on Synonyms
GaHee Sim, YeJi Kim, and MoonGhu Park(Sejong Univ.)

09:40 Understanding and Model Development of Gas Centrifuge Enrichment Process
Yonhong Jeong, Seung-hyo Yang, Hojung Do, and Yein Seo(KINAC)

10:00 Prediction of Plutonium-239 Production by using AnyLogic System Dynamics Platform
Jae Uk Seo, Byoungchan Han, Tongkyu Park, and Sung Kyun Zee(FNC Tech.)

10:20 Analysis of Co-authorship Network in the Field of Korean Nuclear Science and Technology
Seungmin LEE and Donghyuk LIM(KINAC)

10:40 Coffee Break

11:00 Simulating the Evolution of North Korea's First Nuclear Test
Junho Kwon and Man-Sung Yim(KAIST)

11:20 Nuclear Control Regulatory Issues for SMR Developments
SEONG YOUN JO(KINAC)

11:40 Improvement of Estimating Plutonium Production using Various Estimation Models for Graphite Isotope Ratio Method
Jinseok Han, Seongjin Jeong, Junkyung Jang, and Hyun Chul Lee(PNU), Kyeongwon Kim(UNIST)

11B 원자력정책, 인력 및 협력 2 (Nuclear Policy, Human Resources and Cooperation 2)

5. 19 (목)

| 좌장 이현철(Hyun Chul Lee), 정원표(Won Pyo Jeong) | 발표장소 삼다홀A

13:30 Implementations of Nuclear Climate Justice Reflecting the IPCC Sixth Assessment Report (AR6) Keeping 1.5 oC: Honorable Nobel Prize in Physics for Carbon Neutrality
TAE HO WOO(CUK)

13:50 Global Trend of Molten Salt Reactors
Tae Joon LEE(KAERI)

14:10 Cost Assessment of 2030 Electricity Generation Mixes Changing the Nuclear Energy Proportion under South Korean Nationally Determined Contribution Target
Ji Woong Park and Hyung Jin Shim(SNU)

14:30 Risk Management of Micro Nuclear Reactor Projects
Tae Joon LEE(KAERI)

14:50 Safety Principles Revisited to Identify AI Applications to Nuclear Industry
Hyeonil Kim, Seung Geun Kim, and Yong Gyun Yoo(KAERI)

11C
5. 19 (목) – 20 (금)

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

| **좌장** 이나영(Na Young Lee), 정범진(Bum–Jin Chung) | **발표장소** 3층 로비

| **게시시간** 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| **저자 발표시간** 5월 19일(목) 13:00 ~ 14:00

PO11C01 Estimating Time Lag Effect of Nuclear National R&D Programs using Almon Polynomial Distributed-Lag Model
Jihwan Lim(KAERI)

PO11C02 Effectiveness of Scientific and Cultural Programs on Perception Toward Nuclear Energy
Junpyo Hong(KAERI)

PO11C03 Evaluation of the Effect of Uncertainty Expression Method on Material Balance Evaluation for Nuclear Safeguards
Haneol Lee, Minyoung Jung, Yewon Kim, Hyun Ju Kim, and Jung Youn Choi(KINAC)

PO11C04 Analysis of IAEA Reports on North Korea's Nuclear Activities
Sunyoung Chang(KINAC)

PO11C05 Preliminary Sensitivity Analysis on Nuclear Proliferation of Trigger Items Using Bayesian Network
Byeong–hyeok Ha, Tongkyu Park, Sung–kyun Zee, and Suwon Lee(FNC Tech.)

PO11C06 A State-of-Art of Supply Chain Control Regulation to Digital Commercial Grade Item for Cyber Security of Nuclear Facility
Seunghoon Park, Chaechang Lee, Poeil Park, and Kookheui Kwon(KINAC)

PO11C07 Optimal Cycle Length of MAGNOX Reactor for Weapon-Grade Plutonium Production
Seongjin Jeong, Jinseok Han, Bamidele Ebiwonjumi, and Hyunchul Lee(PNU)

PO11C08 A Review of the Criteria for Evaluating the Nuclear Non-Proliferation System
Chansuh LEE and Seunghyo YANG(KINAC)

PO11C09 Conceptual Analysis of Integrated Database and Semantic Search Engine of Nuclear Non-proliferation Data
Byoungchan Han, Byeongmun Ahn, Tongkyu Park, and Sung–Kyun Zee(FNC Tech.)

PO11C10 A Study on Public Opinion for Possessing Nuclear Weapons: Using Semantic Network Analysis
Jisong Jeong and Seungkook Roh(KNPU), Hyunjin Kim(KINAC)

PO11C11 Understanding the PUREX Process with the Hanford Facility
Yonhong Jeong, Seung–hyo Yang, Hojung Do, and Yein Seo(KINAC), Jinho Park(NDC)

PO11C12 A Study on the Regulatory Policy for the Application of Safeguards by Design
Yujeong Hwang and Seungmin Lee(KINAC)

PO11C13 A Study on the D&IS Programme 2022–2023 for Effective Support of the IAEA Safeguards Implementation
Yejin Lee and Donghyuk Lim(KINAC)

PO11C14 Investigation on the Legal Framework of UAV Regulation for Nuclear Facilities
Hyeseung Kim and Wooseub Kim(KINAC)

PO11C15 Analysis of Cases of Foreign Obligated Nuclear Material and Management Practices
Mun–young Ryu, Seongmi Han, In–chul Kim, and Hyunjo Kim(KAERI)

PO11C16 A Study on Effective Implementation and Management of Strategic Material Export Controls at KAERI
Seongmi Han, MunYoung Ryu, In–Chul Kim, and Hyunjo Kim(KAERI)

PO11C17 Quantitative Risk Assessment Study for KAERI Accidentally Gained Nuclear Material
Ju–Ang JUNG, Hyunjo KIM, Jinha CHOI, and Sung Ho LEE(KAERI)

PO11C18 Counter UAS Testing and Evaluation Methodology and its Adaptation to Nuclear Facilities
Seokwoo Sohn, Wooseub Kim, and Hyeseung Kim(KINAC)

PO11C19 Requirements of Load Following Power Plants Operating in South Korea under Deep Penetration of Variable Renewable Energy Grid Environment
Jai Oan Cho and Jeong Ik Lee(KAIST)

PO11C20 Feasibility of Operator Manual Actions for Vital Area Identification in PHWR Plants
Ji–Hwan Cha(KINAC)

PO11C21 Considerations of Regulators and Developers for SMR Development: The Case of U.S. NRC
Young A Suh(KINS)

PO11C22 Policy Statements and Basic Principles Proposed for Effective Feedback of Human Errors and Related Events in Nuclear
Yong Hee Lee(KAERI)

PO11C23 Case Study of Masking Processing of Non-Disclosure of Nuclear Safety Information
Jihye Park(KoFONS)

PO11C24 Legislative Trends and Implications of the Nuclear Safety Information Disclosure and Communication Act
Yeoryeong Jeon(KoFONS)

PO11C25 A Study on Nuclear Power Plant Near Miss / Low Level Event Management System Analysis and Improvement Plan
Dae You Kwon(KHNP), Hyun Chul Lee(PNU)

PO11C26 PRPP Activities of Generation-IV International Forum (GIF)
Sunyoung Chang(KINAC)

PO11C27 Generic PRPP Issues for Gas Cooled Fast Reactor (GFR)
Youngjune Lee(KAERI), Sunyoung Chang(KINAC)

PO11C28 CO_2 Separation Technology Utilizing Uranium Centrifuge Enrichment Technique
Seokjun Oh and Jeongik Lee(KAIST)

PO11C29 Carbon Neutrality and the Role of Nuclear Power Generation in Korea
Seung–Su Kim and Man–Ki Lee(KAERI)

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

12A 5. 19 (목) 원자력계측제어, 인간공학 및 자동원격 1 (Nuclear I&C, Human Factors, and Automatic Remote Systems 1)

| 좌장 김종현(Jong Hyun Kim), 구서룡 (Seo Ryong Koo) | 발표장소 203호

09:00 Concept of Robust AI with Meta-Learning for Accident Diagnosis of Nuclear Power Plants
Daeil Lee and Jonghyun Kim(CSU)

09:20 Study on Virtual Thermometry used in Small Modular Reactor Using Dynamic Data Reconciliation
Sangjun Park(KAERI), Kyusik Oh and Gyunyoung Heo(KHU)

09:40 Automated PLC Software Testing for Reactor Core Protection System Interface and Test Processor using the Execution Control Method for Test Sequences
Hyeongseok Eun, Changjae Lee, and Yoonhee Lee(KEPCO E&C),
Lingjun Liu, Eunkyoung Jee, and Doo-Hwan Bae(KAIST)

10:00 Demonstration Test of Vanadium Fixed In-Core Detector Assembly
Kyung-Gun Kim, Do-yeon Kim, and Yu-Sun Choi(KHNP)

10:20 Coffee Break

10:40 Physics Informed Neural Network based NPP Simulation Method
Young Ho Chae and Poong Hyun Seong(KAIST), Hyeonmin Kim(KAERI), Jungjin Bang(FNC Tech.)

11:00 Bayesian Belief Network Approach for Human-Induced Unplanned Trips of Startup and Shutdown Operation
wooseok Jo and Seung Jun Lee(UNIST)

11:20 Anomalies Detection by Unsupervised Learning Using Explainable Artificial Intelligence in Nuclear Power Plants
Sang Won Oh, Hye Seon Jo, Ho Jun Lee, and Man Gyun Na(CSU)

11:40 Abnormal State Detection Model Using Deep One-Class Classification in Nuclear Power Plant
Seung Gyu Cho and Seung Jun Lee(UNIST)

12B 5. 19 (목) 원자력계측제어, 인간공학 및 자동원격 2 (Nuclear I&C, Human Factors, and Automatic Remote Systems 2)

| 좌장 허섭(Seob Hur), 최종균(Jong Gyun Choi) | 발표장소 203호

13:10 Performance Evaluation in Anomaly Detection using Unsupervised Learning at Nuclear Power Plants
Sanghyun Lee, JiHun Park, Jiwoo Hong, and Mangyun Na(CSU)

13:30 Development and Field Test of a Nuclear Disaster Response Robot, Armstrong
Jongwon Park, Jinyi Lee, and Ki Hong Im(KAERI)

13:50 Preliminary Study of IR Sensor Equipped Drone-based Nuclear Power Plant Diagnosis Method using Deep Learning
Ik Jae Jin and In Cheol Bang(UNIST)

14:10 Monitoring Methodology for Limiting Conditions for Operation of Technical Specification
Nokyu Seong, Jaehee Lee, and Jongbeom Lee(KHNP)

14:30 Coffee Break

14:50 Applicability of AR-based Maintenance and Test Support System in NPPs
Seungho Jo and Jonghyun Kim(CSU)

15:10 Autoencoder Optimization for the Signal Validation in Nuclear Power Plant Accident
Jeonghun Choi and Seung Jun Lee(UNIST)

15:30 Application of Vital Area Identification on Cyber Security at a Nuclear Power Plant
Jeong Ho Lee(KINAC)

12C
5. 19 (목) – 20 (금)

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

| 좌장 장통일(Tong il Jang), 손광섭(Kwang Sub Son) **| 발표장소** 3층 로비

| 게시시간 5월 19일(목) 13:00 ~ 18:00 / 5월 20일(금) 09:00 ~ 12:00

| 저자 발표시간 5월 19일(목) 13:00 ~ 14:00

PO12C01 A Study on the Application of the CPS in OPR1000
ChanHo Sung, KyungMin Kim, JungHo Kim, and JooYoul Lee(KHNP)

PO12C02 Final Functional Test (FFT) of Severe Accident Module in Full Scope Simulators
Kyeong–Min KIM, Jong–Beom LEE, Chan–Ho SUNG, and Joo–Youl LEE(KHNP)

PO12C03 Analysis of Safety Classes Classification Criteria for I&C Systems on NPP
Youngmi Kim, Hoonkeun Lee, Gyungseok Lee, and Sungbaek Park(KINS)

PO12C04 Current Status of European Supply Chain for Commercial Grade Dedication in Nuclear Power Plants
Hoon–Keun Lee, Kyungseok Lee, Sungbaek Park, and Youngmi Kim(KINS)

PO12C05 Software Development Method Using Cradle Considering the Software Development Life Cycle
DONGIL LEE and KYEONG WAN KIM(KHNP), MYUNG HYUK YIM(SNSENG.Co.Ltd.)

PO12C06 Line Recognition Method in Control Logic Diagram
DONGIL LEE and KYEONG WAN KIM(KHNP), JUNG HAN LEE(HUPEC.Co.Ltd.)

PO12C07 Text Recognition using YOLO v3 of Control Logic Diagram
DONGIL LEE and MIN WOO KANG(KHNP), JUNG HAN LEE(HUPEC.Co.Ltd.)

PO12C08 Applicability Evaluation of Enhanced Functions of APR1400 Feedwater Control System to OPR1000
juyoung Kim, seechae Jeong, myunghoon Ahn, younghun Kim, and yoonhee Lee(KEPCO E&C)

PO12C09 Enhancement of Diverse Indication System
Sangeui Hong, Hyunjeong Kim, and Yoonhee Lee(KEPCO E&C)

PO12C10 Prioritization of Operation Range for Automation to Reduce Human Error by using a Descriptive Statistical Approach
Hyun–Chul Lee(KAERI)

PO12C11 Further Considerations Proposed for Safety Design Against to Human Error including Violations in Nuclear
YongHee Lee(KAERI)

PO12C12 A Brief Review of a Kernel Method in Machine Learning Programming
Yong Suk Suh and Seung Ki Shin(KAERI)

PO12C13 Preliminary Evaluation of BERT Embedding for Semantic Search in Nuclear Engineering Domain
Byoungchan Han, Byeong–hyeok Ha, Byeongmun Ahn, Tongkyu Park, and Sung–Kyun Zee(FNC Tech.)

PO12C14 Considerations for the Development of a Maintenance Support System using Digital Technology for Research Reactors
Yong Suk Suh and Seung Ki Shin(KAERI)

PO12C15 Estimation of Reactor Building Humidity Distribution due to RCS Leakage
Youngsuk Bang and Jeong Hoon Lee(FNC Tech.)

PO12C16 Development of Artificial Intelligence Monitoring & Diagnosis (AIMD) System
Songhae Ye, Wonhyu Lee, Yseul Jeon, Jusik Kim, and Minho Kim(KHNP)

PO12C17 Suggestion of a Cyber Security Incident Report Framework for Nuclear Facilities in ROK based on Foreign Cases
In-hyo Lee(KINAC)

PO12C18 EPRI Technical Assessment Methodology Analysis based on Risk Assessment Standards
Janghoon Kim, Aram Kim, and Kookheui Kwon(KINAC)

PO12C19 The Necessity of Exercise for Nuclear Facilities Considering a Blended Attack
Seungmin Kim(KINAC)

교통편

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공항리무진 버스 (600번 제주공항 ↔ 중문관광단지)

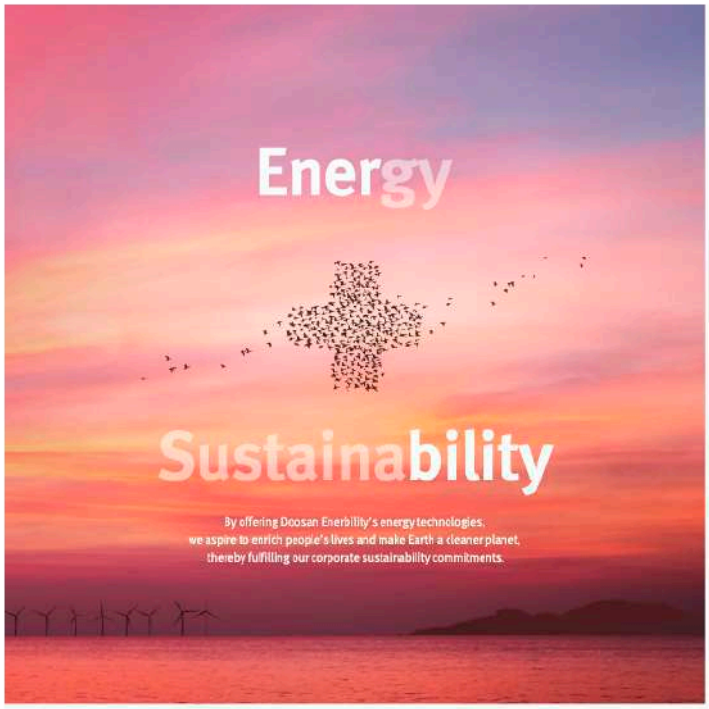
운행표	공항 → 제주더호텔 → 여미지식물원입구 → 하얏트호텔 → 신라호텔 → 롯데호텔 → 한국콘도 → ICC JEJU
제주국제공항 출발 (06:20 ~ 22:00)	1층 5번 게이트 왼쪽 리무진 버스 승차장 (삼영교통 600번)
ICC JEJU	정문 국기게양대 20m지나 로터리 정류장에 정차 (600번 제주공항 ↔ 서귀포)
이용요금	공항에서 ICC JEJU까지 편도(성인) 4,500원 매 18~20분 간격 ICC JEJU까지 소요시간 50분

택시안내 (제주공항 ↔ 중문)

승차지점	거 리	소요시간
장거리 택시 승차장에서 출발	약 40㎞	약 40~45분

렌터카 이용시 (제주공항 → ICC JEJU)

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



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- RELAP / RETRAN / MAAP / GOTHIC / LS-DYNA / CFD 등

원자력 신기술 및 제품 개발
- 환경 방사선 감시 체제 구축
- 발전소 운전 지원 설비 개선, 방사선계측 · 탐지기기 광섬유 신제품 개발

원전 운영 및 설계 기술지원
- 안전 해석, 열수력 해석, 중대 사고, PSA, RIR & RIA,안전 성능, 원자력 재료 및 수화학, 환경 방사선 및 방재 프로그램, 원자력 정책 등의 기술 분야에 대한 기술 지원

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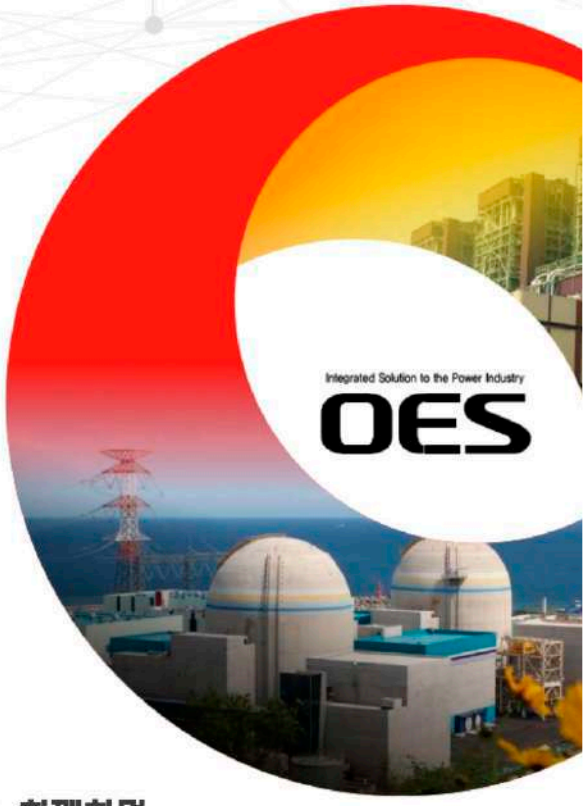
- Computer vision AI 솔루션 개발
- 분류 및 예측 AI 솔루션 개발
- 계측 제어 정보 빅데이터 플랫폼 구축



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핵물질 및 관련 기술을 통제하는 안전조치, 수출입통제와 원자력시설 및 핵물질을 보호하는 물리적방호, 사이버보안 업무를 하고 있습니다.

안전조치 Safeguards	수출입통제 Export/Import Control	물리적방호 Physical Protection	사이버보안 Cyber Security	연구 및 교육훈련 R&D, Education
핵물질이 핵무기 또는 기타 핵폭발장치 등의 군사적 목적으로 전용되는 것을 막기 위한 계량, 격납, 감시 및 사찰 등 일련의 활동	국제 거래되는 핵물질, 장비, 기술 등이 핵무기 개발에 전용되지 않도록 통제하는 일련의 활동	핵물질 및 원자력시설에 대한 위협을 사전에 방지하고 위협 발생시 저지하는 한편, 사고영향을 최소화하는 위협 분석·탐지·지연·대응 등 일련의 조치를 규제	핵물질 및 원자력시설에 방사선적 시보타주를 일으킬 수 있는 사이버위협을 예방·탐지·대응하는 일련의 조치를 규제	■ 4대 핵심 이행업무에 관한 정책연구 및 기술개발 ■ 4대 핵심 이행업무에 관한 법정교육, 이해증진교육, 국제교육 시행






내일을 위한 생각! 멈추지 않는 열정!

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안전하고 깨끗한 미래 에너지를 만들어가겠습니다.

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춘계학술발표회

| 발행인 | 정동욱
| 발행처 | 한국원자력학회
| 주 소 | 대전광역시 유성구 유성대로 794, 4층 (장대동, 뉴토피아빌딩)
| 연락처 | Tel:(042)826-2613~5 Fax:(042)826-2617
E-mail:kns@kns.org
| 인쇄처 | 신진기획인쇄사 Tel:(042)638-7887

www.kns.org

사단법인 한국원자력학회
KOREAN NUCLEAR SOCIETY
대전광역시 유성구 유성대로 794, 4층 (장대동, 뉴토피아빌딩)
Tel 042-826-2613~5 Fax 042-826-2617 E-mail kns@kns.org