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KNS 2020 Spring 온라인 춘계학술발표회

KOREAN NUCLEAR SOCIETY

2020. 7. 8.(수)~10.(금)
Virtual Spring Meeting

(<http://2020springmeeting.kns.org>)



사단
법인 한국원자력학회
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[한국원자력학회 특별회원 광고]

학회장 인사말



민병주 학회장

존경하는 한국원자력학회 회원 여러분 안녕하십니까?
제32대 학회장 민병주입니다.

최근 코로나19가 전국적으로 재확산하고 있어 매우 걱정스럽습니다. 힘들고 답답한 시기에 먼저 학회 회원 여러분과 가족분들 모두의 건강을 기원합니다.

코로나19는 비대면(Untact)이라는 새로운 문화를 만들었고, 원자력학회는 50년 역사상 처음으로 2020년 춘계학술발표회를 기존의 현장 발표가 아닌 비대면 온라인 발표로 변경하여 진행하게 됨을 알려드립니다. 애초에는 금년 춘계학술발표회를 제주 국제컨벤션센터에서 5월에 개최할 계획으로 각 연구부회 및 사무국이 성실하게 준비하고 있었습니다. 그러나 6월 하순에 이른 지금까지도 코로나19가 여전히 수그러들지 않아서 부득이하게도 올해에는 온라인 발표로 변경하게 되었습니다.

온라인 학술발표회는 발표하시는 분이 발표할 자료를 직접 작성하여 웹에 올린 이후에 학회 회원님들 간에 자유롭게 질의와 답변을 하는 「웹 기반 디지털 학술발표회」로 진행됩니다. 코로나19의 영향으로 불가피하게 시행되는 새로운 형태의 비대면 학술발표회를 성공적으로 마무리하기 위해서는 무엇보다도 회원님들의 적극적인 참여가 중요하다고 생각합니다. 기존의 현장 학술발표회보다도 더 활발한 학술교류가 될 수 있도록 적극적으로 동참하여 주시기를 부탁드립니다. 처음으로 시도하는 온라인 학술발표회이므로 준비하고 진행하는 과정에서 다소 불편한 점이 있더라도 넓은 마음으로 이해해주시기를 바라며, 학회는 「모두가 함께하는 학술발표회」가 될 수 있도록 최선의 노력을 다하겠습니다.

2019 춘계학술발표회 우수논문상, 제2회 한국원자력학회 학생 학술대회 우수논문상을 수상하는 수상자 여러분들과 올해 우리 학회의 장학생으로 선발된 장학생 여러분들께도 축하의 말씀을 전합니다. 비록 이번은 현장에서 시상식은 못하게 되었지만 ‘온라인 학술발표회 시스템’을 통해 수상자와 장학생 여러분의 명단과 사진을 게시하였으니 조금이나마 위안이 되시길 바라며 주변에서도 많이 축하해주시길 바랍니다.

첫 시도하는 온라인학술발표회에도 흔쾌히 축하메세지를 보내주신 정병선 과학기술정보통신부 제1차관님, 정승일 산업통상자원부 차관님, 장보현 원자력안전위원회 사무처장님과 요즘 같이 불확실하고 민감한 시기에 적절한 주제로 특별강연을 해주시는 유명순 한국헬스커뮤니케이션 학회장님(제목 : 코로나19 사태 장기화와 사회적 건강), 유승철 이화여자대학교 커뮤니케이션학부 교수님(제목 : 불확실성 시대의 ‘리스크 커뮤니케이션’ 그리고 원전)께 감사를 표합니다.

마지막으로, 어려운 환경에도 불구하고 춘계학술발표회 준비를 위해 애써 주시는 모든 분께 감사의 마음을 전합니다. 또 원자력 발전을 위해 노력하시는 학회 회원 여러분께도 깊은 감사의 말씀을 올립니다.

감사합니다.

2020년 7월

한국원자력학회장 민 병 주

한국원자력학회 2020 온라인 춘계학술발표회 종합일정

일시 2020년 7월 8일(수) ~ 7월 10일(금)

구 분	행사내용
개회내용	<ul style="list-style-type: none"> • 학회장 인사말 : 민병주 학회장
	<ul style="list-style-type: none"> • 축사 <ul style="list-style-type: none"> - 정병선 과학기술정보통신부 제1차관 - 정승일 산업통상자원부 차관 - 장보현 원자력안전위원회 사무처장
	<ul style="list-style-type: none"> • 수상자 : <ul style="list-style-type: none"> - 2019춘계학술발표회 우수논문상 - 제2회 한국원자력학회 학생 학술대회 우수논문상
	<ul style="list-style-type: none"> • 장학생 : <ul style="list-style-type: none"> - 2020년도 한국원자력학회 장학생 - NUCHI 장학생
특별강연	<ul style="list-style-type: none"> • 유명순 한국헬스커뮤니케이션학회장 <ul style="list-style-type: none"> - 코로나19 사태 장기화와 사회적 건강
	<ul style="list-style-type: none"> • 유승철 이화여자대학교 커뮤니케이션학부 교수 <ul style="list-style-type: none"> - 불확실성시대의 '리스크커뮤니케이션' 그리고 원전
워크숍	<p>〈온라인 개최〉</p> <p>온라인학술발표회의 등록비를 납부한 등록자는 별도의 참가비 없이 참여 가능함</p> <ul style="list-style-type: none"> • Thorium Energy and Accelerator Driven Systems (양자공학 및 핵융합기술 연구부회) • 4차 산업혁명시대 - 원자력의 미래 전망 (여성지부)
	<p>〈현장개최〉</p> <p>현장개최 예정이며, 참가비는 현장에서 결제가능함</p> <ul style="list-style-type: none"> • 안전등급 소프트웨어 확인 및 검증 표준화 (원자력계측제어, 인간공학 및 자동원격 연구부회) <ul style="list-style-type: none"> - 7월 8일(수) 12:00 ~ 18:00 한국원자력연구원 INTEC (참가비 : 50,000원)
논문발표	구두 논문 발표 (발표자의 음성포함 발표자료)
	포스터 논문 발표 (발표자료)
미래특별위원회	미래특별위원회 발표회

※ 논문발표는 종전 대면개최와 같이 각 세션별 좌장이 있으며, 학술발표회 기간 중 업로드된 발표자료 등을 평가하며 심사과정을 거쳐 '학술발표회 우수논문'을 선정할 예정임 (우수논문은 각 연구부회별 1편 내외를 선정함)

축사



과학기술정보통신부
정병선 제1차관

안녕하십니까? 과학기술정보통신부 제1차관 정병선입니다.

한국원자력학회 온라인 춘계 학술발표회 개최를 축하드립니다. 코로나19로 인해 어려운 상황에서도 이번 학술대회를 차질 없이 준비해 주신 민병주 학회장님과 관계자분들, 발표·토론을 통해 참여해주신 학회 회원님들 모두에게 감사드립니다.

한국원자력학회는 1969년 창립 이후 학술발표회, 간행물 발간 등을 통하여 원자력 기술 발전에 이바지하여 왔으며, 원자력계 전문가들간의 교류의 장을 제공하여 왔습니다. 또한 학생 학술대회 및 장학사업을 통한 원자력 인력양성과 국민과의 다양한 소통 활동에도 역할을 다하여 왔습니다.

후쿠시마 사고 이후 안전·해체에 대한 지속적인 기술발전이 요구되고 있으며, 세계 원전시장은 중소형원자로(SMR), 우주·해양, 융복합 등의 분야로 빠르게 변화하고 있습니다. 이와 더불어 소형화, 계통단순화 등 혁신적 특성을 지닌 새로운 원자로 개발을 위한 세계 각국의 기술경쟁이 심화되고 있습니다. 또한 원자력 기술을 기반으로 소재, 의료 등 다양한 분야에 적용이 가능한 방사선의 기술 발전과 신산업 창출의 필요성도 대두되고 있습니다.

정부는 이러한 변화에 대응하여 우리나라의 원자력 기술역량을 계속 발전시켜 나갈 수 있도록 적극적으로 지원할 예정입니다. 우주·해양 등에 활용할 수 있는 다목적 소형 원자로 기술개발, 원전의 안정성을 보다 강화하는 안전분야 연구개발, 사용후핵연료 처리·처분 기술개발 등을 중단 없이 지원할 계획이며, 이를 수행하기 위한 인프라로서 혁신원자력연구단지 등의 구축을 추진하고 있습니다. 또한 방사선 미래신산업 창출을 위해 방사선 원천기술 R&D지원을 강화하고 산·학·연 연계를 통한 기술사업화에도 노력하고 있습니다.

원자력 학계에서도 정부와 함께 원자력 기술혁신과 산업 발전을 위해 계속 도전하고 노력해주시길 부탁드립니다. 특히 우리나라 원자력발전에 기여해온 한국원자력학회가 아이디어와 기술을 공유하고 소통하는 혁신의 장으로서, 그리고 국민과 소통하며 원자력의 청사진을 제시할 수 있는 주체로서 중추적 역할을 해주실 것으로 기대합니다.

다시 한번 한국원자력학회 온라인 학술발표회 개최를 축하드립니다. 국민의 신뢰와 원자력기술 발전을 기반으로 원자력학회가 더욱 발전하길 바라며, 한국원자력학회의 앞날에 무궁한 발전이 있기를 기원합니다. 감사합니다.

2020년 7월

과학기술정보통신부 제1차관 **정 병 선**

축사



산업통상자원부
정승일 차관

한국원자력학회 회원 여러분,

2020년 온라인 춘계학술발표회 개최를 진심으로 축하드립니다.

먼저 뜻깊은 자리를 마련하시는 민병주 한국원자력학회장과 관계자 여러분, 감사합니다. 우수 논문상 수상자와 장학생 선발자 여러분께도 축하와 격려의 마음을 전합니다.

그간 국내 원자력산업과 역사를 함께 한 한국원자력학회의 학술적, 기술적 성취를 바탕으로, 최초 APR1400 원전인 신고리 3·4호기가 작년 준공되어 안전하게 운영되고 있고 UAE 바라카 1호기는 올해 초 연료 장전을 완료하고 순조롭게 시운전을 진행 중에 있는 등 의미 있는 성과를 이루었습니다.

정부는 그간 축적해온 원자력 기술이 경쟁력을 유지할 수 있도록 최선의 노력을 다할 것입니다.

우선, 안전·해체·방폐 예타 추진, 가동원전에 대한 안전투자 확대, 인증비용 지원, 핵심 퇴직자 DB 구축 등 원전산업 핵심 생태계와 인력에 대한 지원을 지속하겠습니다. 또한, 에너지전환펀드를 결성하여 중소형 원자력, 방사선 등 새로운 시장 창출을 위한 지원기반도 마련하겠습니다. 원전해체산업 육성의 허브인 원전해체연구소 설립도 차질없이 진행하여 내년 착공을 추진하겠습니다. 무엇보다 정부는 한국원자력학회 등 원자력계 전문가가 참여하는 원자력미래포럼을 통해 원자력의 미래 유망 분야를 발굴하고 육성하기 위한 노력에 최선을 다하겠습니다.

한국원자력학회 춘계학술발표회 참가자 여러분,

미래를 준비하는 과정은 언제나 예측이 어렵고 위험이 따르지만 변화를 통해 새로운 기회를 모색할 수 있다고 믿습니다. 이번 학술발표회에서 새로운 원자력의 미래를 밝힐 뜻깊은 논의가 진행되기를 바랍니다.

감사합니다.

2020년 7월

산업통상자원부 차관 정 승 일

축사



원자력안전위원회
장보현 사무처장

반갑습니다. 원자력안전위원회 사무처장 장보현입니다.

한국원자력학회의 “2020 온라인 춘계학술발표회” 개최를 진심으로 축하드립니다.

아시다시피 원자력안전위원회에서도 코로나19 상황을 고려하여 매년 현장에서 개최하던 원자력안전규제정보회의를 온라인으로 개최하였습니다. 그 과정의 어려움을 알기 때문에 그동안 온라인 행사를 준비하시느라 고생하신 민병주 학회장님과 관계자 여러분의 노고에 깊은 감사의 말씀을 드립니다.

1969년 창립된 한국원자력학회는 그동안 원자력관련 연구와 교육을 선도하여, 우리나라의 원자력 기술 자립 및 원자력안전 기반 강화에 큰 공헌을 해왔습니다.

원자력 이용의 기본 전제가 ‘안전’이라면 원자력 ‘안전’의 기반은 ‘과학’입니다. 여러분들의 원자력안전에 대한 기여와 헌신에 대해 이 자리를 빌어 감사 드립니다.

최고의 전문성을 갖춘 연구자 교수님들이 참여하신 이번 학술발표회에서 원자력안전을 위한 풍성하고 깊은 논의가 진행되기를 기대합니다.

다시 한번 “2020 온라인 춘계학술발표회” 개최를 축하드립니다. 감사합니다.

2020년 7월

원자력안전위원회 사무처장 **장 보 현**



[논문발표자] 참가요령

1. 모든 발표자는 본인 발표논문에 대한 질의가 등록된 경우 이에 대한 답변을 진행 하여 주시면 됩니다.
 ※ 행사 기간 중 본인 발표논문에 대한 질의가 등록된 경우, 매일 알림 발송
2. 구두 발표는 음성이 포함된 발표자료 10분 이내 / 포스터 발표는 발표자료(PPT 또는 PDF)를 통해 발표가 진행되며, 사전에 발표자료를 제출한 경우만 발표(게재)로 인정됩니다.
3. 발표자료는 시스템 설계상 다운로드가 불가능하며, 불법촬영을 금합니다.
 행사 종료 이후 발표자료는 서비스 되지 않습니다.
4. 학술발표회 발표 논문 중 우수한 논문을 각 연구부회에서 추천 받아 학회 포상 및 장학위원회의 심사를 통해 학술발표회 우수논문상을 선정합니다.
5. 학술발표회 종료 후 발표자료를 업로드한 논문에 한해 논문 게재 증명서를 발급합니다.
6. 채택된 논문은 필히 등록비를 납부하여야 합니다.
 ※ 등록비를 납부하셔야 행사 기간중에 '온라인학술발표회 전용페이지'에 로그인 및 참여가 가능합니다.
7. 학술발표회 등록비

구 분	기 준	on-line 등록비	비 고
학 생	학부생 및 대학원생	40,000원	온라인 학술발표회로 전환됨에 따라 종전 대면개최 사전등록비의 50% 할인 적용
평생회원	연회비 10년분을 일시납 한 회원	70,000원	
정회원A	2020년도 연회비 납부회원 2020년에 가입한 신규회원		
정회원B	2020년도 연회비 미납회원	95,000원	
비 회 원	-	95,000원	

[일반참가자] 참가요령

1. 온라인학술발표회는 등록비를 납부한 분에 한해 참여가 가능하며, 워크숍은 별도의 추가 참가비 없이 등록비를 납부하시면 모두 참여 가능합니다.
2. 모든 참가자는 1인 1계정 사용을 원칙으로 하고 있습니다.
3. 모든 발표내용은 학술발표회 기간 중 자유롭게 참여 가능합니다.
4. 발표 내용에 대한 질의는 발표논문 댓글로 참여 가능합니다.
 - 남겨주신 질의는 발표자에게 알림 메일이 발송되며 발표자가 확인 후 답변 드릴 예정입니다.
 - 질의는 일과 시간 중(09:00 ~ 18:00) 이용할 것을 권장합니다.
5. 발표자료는 시스템 설계상 다운로드가 불가능하며, 불법촬영을 금합니다.
행사 종료 이후 발표자료는 서비스 되지 않습니다.
6. 학술발표회 참가증명서는 등록비를 납부한 분에 한해 홈페이지를 통해 발급 가능합니다.
 - ※ 등록비를 납부하셔야 행사 기간중에 '온라인학술발표회 전용페이지'에 로그인 및 참여가 가능합니다.
7. 학술발표회 등록비

구 분	기 준	on-line 등록비	비 고
학 생	학부생 및 대학원생	40,000원	온라인 학술발표회로 전환됨에 따라 종전 대면개최 사전등록비의 50% 할인 적용
평생회원	연회비 10년분을 일시납 한 회원	70,000원	
정회원A	2020년도 연회비 납부회원 2020년에 가입한 신규회원		
정회원B	2020년도 연회비 미납회원	95,000원	
비 회 원	-	95,000원	

※ 행사 기간 중에도 등록비 결제가 가능합니다.

한국원자력학회 제32대 임원진

회장



민병주

수석부회장



하재주

부회장



김만웅



김미숙



전휘수



최재봉



황용석

감사



나기용



진태은

총무이사



정재호



최성열

사업이사



권민지



이병진

재무이사



권정택



박석빈

국제협력이사



김신애



김용희

기획이사



이영욱



이윤실

고급정책연구소



김현준 소장



류호진 부소장

학술이사



김군태



정재학

편집이사



김지현



심형진

홍보이사



서민원



한은옥

대학·청년이사



김동익



윤봉요

특임이사



문주현



정승호

한국원자력학회 원자력이슈 및 소통위원회 위원

위원장



하재주

부위원장



정범진

임명직 위원



김교윤



김균태



김창락



노동석



배성만



백원필



송중순



유석현



이병철



정용훈



조건우



조병욱

당연직 위원



김경두



김용희



김윤호



김종원



서민원



양준언



유종성



이기복



이창희



정동욱



정연섭



정재호



정종태



최성열



한은옥



황원태

한국원자력학회 편집위원회 위원

위원장



나만균

국내 부위원장



구양현



김은희



최기용

국외 부위원장



Shinya Nagasaki



Hideo Nakamura



Won Sik Yang

국내 위원



김용균



김용희



김윤재



김원주



김지현



김인규



김창락



선광민



신형기



심형진



이동원



임호곤



정명조



정범진

국외 위원



Akio Gofuku



Didier Jacquemain



John C. Jin



Jean Noiro



Horst-Michael Prasser



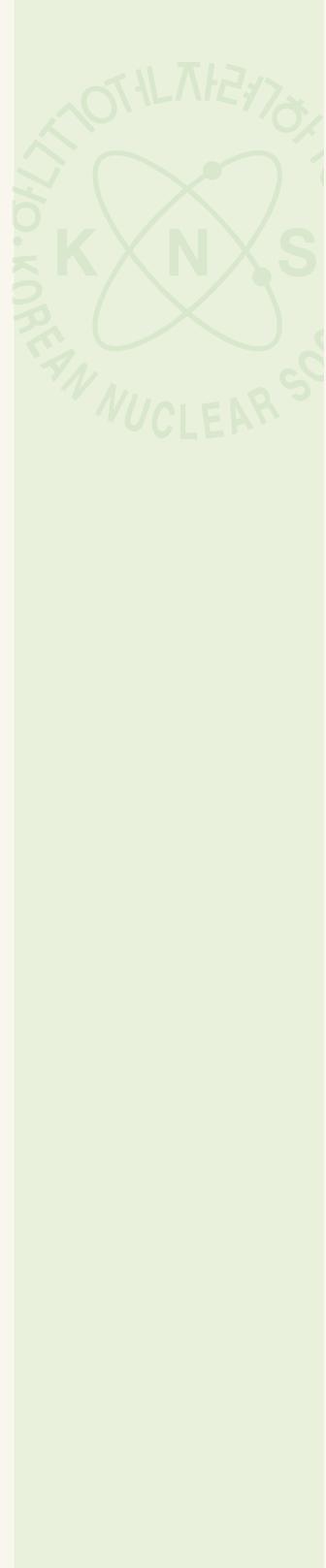
Shripad Revankar



Guanghui Su



Belle R. Upadhyaya



한국원자력학회 연구부회장/차기연구부회장 · 지부장

연구부회장/차기연구부회장

원자로시스템기술



정동욱



김민환

방사선 방호



황원태



이희석

원자물리 및 계산과학



김용희



이은기

방사선 이용 및 기기



이창희



김찬형

원자력시설해체 및 방사성폐기물관리



정종태



차완식

양자공학 및 핵융합기술



김종원



이동원

핵연료 및 원자력재료



유종성



장창희

원전건설 및 운영기술



김윤호



이도환

원자력열수력



김경두



권태순

원자력정책, 인력 및 협력



이기복



정범진

원자력 안전



양준연



김군태

원자력계측제어, 인간공학 및 자동원격



정연섭



김창희

국내외 지부장



김승평
광주/전남/전북 지부



김규태
대구/경북 지부



김희령
부산/울산/경남 지부



이창호
미국 지부



UAE 지부



IAEA/Europe 지부

청년지부



이기만 지부장

여성지부



김영미 지부장

학생지부



양성민 지부장



박재영 지도교수

한국원자력학회 포상 및 장학위원회 위원/사무국

위원장



전희수

사무총장



남장수

위원



김교윤



김군태



김응수



김태룡

실장



민현정



박범서



백민



어근선



윤종일

팀장



송지현



이나영



이승준



이은기

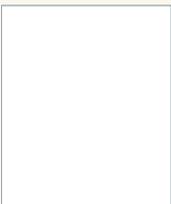


이정표

대리



이연화



이희범



전경락



정재학



채수열

직원



유진원

특별강연 I

| 일시 2020년 7월 8일(수) ~ 7월 10일(금)



유명순

서울대학교
보건대학교 부교수

한국헬스커뮤니케이션
학회 학회장

공공보건의료계획
시행결과 평가위원

서울대학교 병원
의료발전위원회 위원

서울대학교
국가전략위원회 위원

코로나19 사태 장기화와 사회적 건강

신종감염병은 대표적인 국제적 공중보건 비상사태 (public health emergency of international concern)의 사례다. 2019년 12월 중국에서 첫 발생이 보고된 후 신종 코로나 바이러스에 의한 감염병, 즉 코로나19는 지난 3월 세계보건기구(WHO)의 팬데믹 선언으로 인류 역사상 6번째로 세계적 대유행을 맞이했다.

지난 1월 20일 국내 코로나19 첫 확진 발생 후 한국 사회는 하루도 예외 없이 코로나19의 영향권 아래 놓여 있었다. 대개 감염병의 확진자 규모가 줄면 사회적 관심을 가늠하는 지표의 하나인 언론 보도 (news coverage)가 급격히 줄기 마련인데, 코로나19의 경우는 계속해서 높은 사회적 의제를 유지 중이다.

위기는 대부분 예고 없이 닥치며 그 점에서 무례한 습격이란 이름이 붙는다. 마찬가지로 대부분의 위기는 그 사회의 민낯을 드러내고 이를 불편한 진실(inconvenient truth)로 비유하기도 한다. 동시에 위기는 어떤 사회에 새로운 동력과 성장 발판이 되기도 한다. 위기 기회론이 이런 맥락에 있다.

발생 반 년, 코로나19는 한국 사회의 어떤 불편한 진실들을 드러냈을까. 동시에 어떤 기회의 동력을 마련했을까. 본 강연에서는 '위험 인식'과 '재난 심리' 그리고 사람들의 다양한 '위기 경험'을 통해 이 내용을 짚어본다. 백신과 치료제의 일정표가 여전히 불확실한 현 시점에서 사태 장기화는 나와 서로의 경각심과 그에 뒤따르는 예방행위의 실천과 상호 신뢰에 기댈 수밖에 없다는 점에서, 사태 장기화에 대비하는 연대와 신뢰의 교훈 또한 다뤄본다.



특별강연II

| 일시 2020년 7월 8일(수) ~ 7월 10일(금)



유승철

이화여자대학교
'커뮤니케이션·
미디어학부' 교수

'융합 미디어 트랙' 및
'미디어 공학 &
창업 트랙' 담당

한국PR학회,
한국광고학회,
한국헬스커뮤니케이션
학회 이사

불확실성 시대의 '리스크 커뮤니케이션' 그리고 원전

현대를 '불확실성(uncertainty)의 시대'라고 합니다. 불확실성이 우리에게 피해를 가져올 가능성이 현저할 때 불확실성은 곧 '위험(risk)'이 됩니다. 신종 코로나바이러스를 포함한 예측하기 어려웠던 요소들이 이제는 확실한 위협으로 우리의 일상과 공존하고 있는 요즘입니다. 불확실과 위험이 일으킨 시민사회의 불안감은 그 어느 때보다도 대단합니다. 이러한 현상 가운데서 원전과 관련된 불안감은 상대적으로 작게 느껴질 정도입니다.

대한민국의 에너지 공급원 가운데 원자력이 가지는 영향력은 막강합니다. 탈원전을 논하는 현재이지만 탈원전 시점은 요원한 미래로 느껴집니다. 또, 원전기술의 수출을 통해 국부를 창출할 한국의 기술적 역량과 원전이 우리 삶의 질에 미치는 효용도 무시할 수 없습니다. 우리는 항공기 사고가 걱정된다고 하더라도 일상의 다양한 목적을 위해 항공을 편리하게 활용합니다. 많은 영화가 항공 사고를 소재로 다루고 있지만, 실제 사고확률은 다른 운송수단에 비해 낮습니다. 같은 맥락에서, 영화와 언론을 통해 또 정치적인 이유로 가공되어 확대 재생산된 원전의 위험성은 실제보다는 과장되고 왜곡된 것이 아닐지 의문입니다.

인간은 생존을 위해 부정적 정보에 본능적으로 더 민감하도록 설계되어 있습니다. 유튜브로 대표되는 소셜 미디어가 점령해버린 현대 콘텐츠 환경에서 원전 관련 정보에 대한 왜곡은 더 커질 것이고 부정적 정보의 확산도 더욱 빨라질 것입니다. 왜곡된 정보를 바로잡고 타당한 정보를 전달하기 위해서는 전사적 차원에서 전략적인 커뮤니케이션 노력이 필요합니다.

위험이 현실로 나타날 때 이를 '재난(disaster)'이라고 부릅니다. 재난 이후에는 어떤 커뮤니케이션도 의미가 없습니다. 재난을 막기 위한 인적 그리고 기술적 노력은 단연 제1의 과제입니다. 다행히, 4차 산업혁명 기술의 빠른 혁신 가운데 원자력이 재난으로 변화할 가능성은 희박하며 그 가능성은 더욱 줄어든 것입니다. 원전과 관련한 과거의 재난들은 이제 역사의 한 장면이자 교훈으로 남을 것입니다.

우려되는 점은 가짜정보의 범람과 시민들의 지각된 불안입니다. 따라서, 원자력 관련 조직은 대중에게 사실 기반의 과학정보를 그들의 언어로 전달하는 '과학 커뮤니케이션(science communication)' 그리고 대중의 위기감을 경감시키고 합리적 사고를 끌어내는 '리스크 커뮤니케이션(risk communication)' 역량을 갖춰야 합니다. 특히, 전염병 발발 이후 급변하고 있는 시민들의 정보 소비 심리와 행동 그리고 미디어 기술의 혁신을 이해하고 원자력 관련 소통을 보다 고도화해야 합니다.

불안은 저항하면 나타나고 주시하면 사라집니다. 시민들이 불안과 잘 지내기 위해서는 시민들이 현상을 주시해 통제감을 높일 수 있도록 원전에 대한 정확한 정보를 효과적으로 소통해야 합니다. 탈원전이 현실화될 먼 미래 시점까지 원자력이 안전하고 또 경제적으로 소명을 다할 수 있도록 과학자의 엄밀한 판단과 함께 시민들에 대한 적극적인 소통이 병행되어야 할 것입니다.

2020 춘계학술발표회 수상자 명단

학술발표회 우수논문상 (2019 춘계학술발표회 발표논문)



강정성
(울산과학기술원)



김신엽
(서울대학교)



김휘용
(부산대학교)



안진모
(POSTECH)



이윤희
(한국원자력안전기술원)



정승호
(한국원자력통제기술원)



조태원
(한국원자력연구원)



최남재
(서울대학교)



하준목
(한국원자력연구원)



허성렬
(한국원자력연구원)



L. Mokhtari Oranj
(PAL, POSTECH)



Robert M. Field
(한국전력
국제원자력대학원대학교)

제2회 한국원자력학회 원자력 학생 학술대회 우수논문상

최우수논문상



신도영
(한양대학교)

구분	성명	소속
우수논문상	부지환	제주대학교
	전기현	경희대학교



2020 춘계학술발표회 장학생 명단

2020년도 한국원자력학회 장학생

경북대학교

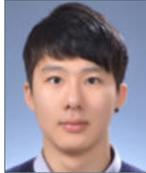


하창우

경희대학교



김민성



이태강



서동균

단국대학교



서일규

동국대학교



장나경

부산대학교



홍석우



나규호

서울대학교



이학민



천동현



김승운



김영희

세종대학교



이윤주

울산과학기술원



김지용

제주대학교



문현진



천승욱

조선대학교



노재현



이수봉



김진홍



황지환

중앙대학교



강재혁

포항공과대학교



Ng, Woei, Jer

한국과학기술원



이수정



김진환

한양대학교



정윤호



한선규



김남국



Amy Nkirote Gichuru

한국전력국제원자력대학원대학교

NUCHI 장학생



강성근
(한국과학기술원)

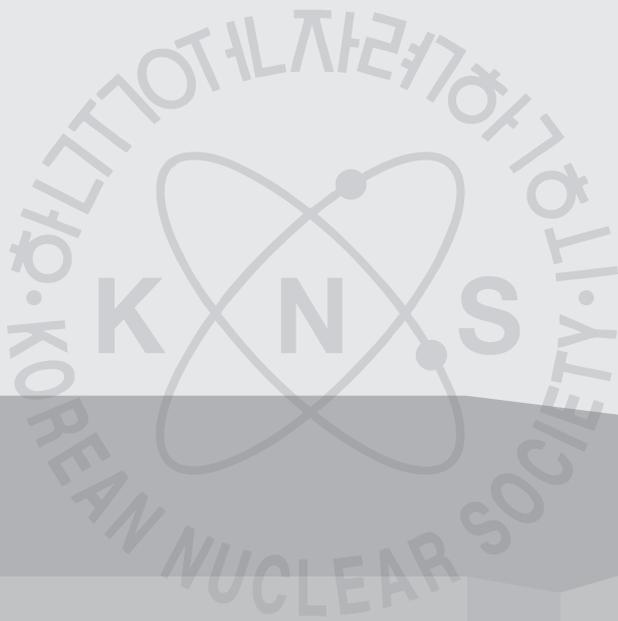
KOREAN NUCLEAR SOCIETY

KNS 2020 Spring

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Workshop



Workshop

Thorium Energy and Accelerator Driven System

Organizer Division of Quantum Engineering and Nuclear Fusion Technology (KNS)

Title	Speaker
Introduction to Workshop	Division chair
Status of TMSR in China	Prof. Hongjie Xu (SINAP)
Overview of Thorium ADS	Prof. Seungwoo Hong (SKKU), Il-Soon Hwang (UNIST)
Reactor Physics in ADS	Prof. Hyungjin Shim (SNU)
Research of Thorium Uranium Fuel Cycle in TMSR	Dr. Xiang-Zhou Cai (SINAP)
Fusion Driven System for Radwaste Transmutation	Prof. Bong-Guen Hong (JBNU)
Feasibility of Photon-Neutron Hybrid Transmutation of Toxic Radioactive Fission Products	Prof. Yonghee Kim (KAIST)
ADS overview	Dr. Tae-Yeon Lee (POSTECH)
ADS accelerator: Linac option	Prof. Moses Chung (UNIST)
ADS accelerator: Cyclotron option	Dr. Seunghwan Shin (POSTECH)
Operation Status and Near Future Plan of KOMAC Proton Linac	Dr. Hyeok-Jung Kwon (KAERI)

Workshop

4차 산업혁명시대 – 원자력의 미래 전망

| 주최 한국원자력학회 여성지부

내 용

원자력 분야의 딥러닝 기술 응용 탐색, 유용균 (한국원자력연구원)

4차 산업혁명 요소기술을 적용한 원전 스마트 플랜트 구축현황, 김대웅 (한수원)

4차 산업기술을 적용한 원자력 분야의 미래 발전 방향, 성승환 (한국원자력연구원)

인공지능기술의 의료분야 활용, 이지민 (서울대학교 박사과정)

| 기타사항

– 문의처 : 한지윤 / 한국원자력안전기술원 / 042-603-3031 / hanji@kins.re.kr

Workshop

안전등급 소프트웨어 확인 및 검증 표준화

- | 일시 2020년 7월 8일(수) 12:00~18:00
- | 장소 대전, 한국원자력연구원 INTEC (현장개최)
- | 주최 한국원자력학회 원자력계측제어, 인간공학 및 자동원격 연구부회

일 정	내 용
12:00 ~ 13:00	점 심 (장소 미정)
13:00 ~ 13:30	INTEC 등록
13:30 ~ 13:35	참석자 소개 및 환영인사(정연섭, 연구부회장)
	세션 1 좌장 (양재현, 한수원 CRI)
13:35 ~ 13:40	주제 소개 및 현황 (양재현, 한수원 CRI)
13:40 ~ 14:05	가동중 원전 소프트웨어 V&V 현황 및 표준안 계획 (이동일, 한수원 CRI)
14:05 ~ 14:30	건설/가동중 원전 안전등급 소프트웨어 V&V 경험 공유 (김태효, 포털웍스)
14:30 ~ 14:50	휴 식
14:50 ~ 15:15	터빈제어 시스템 설계변경 및 소프트웨어 V&V 경험 (허태영, 엔텍코어)
15:15 ~ 15:40	신한울1,2호기 안전등급소프트웨어 확인 및 검증사례 (김성태, 두산중공업)
15:40 ~ 16:00	휴 식
	세션 2 좌장 (이승준, UNIST)
16:00 ~ 16:25	인공지능 소프트웨어 V&V 방법 및 방향 제시 (이승준, UNIST)
16:25 ~ 16:50	상용도구를 이용한 소프트웨어 개발 및 검증 (김창호, KEPCO E&C)
16:50 ~ 17:10	휴 식
17:10 ~ 17:35	IEEE 1012 및 IEC 62566기반의 FPGA V&V Framework (김장열, KAERI)
17:35 ~ 18:00	질의답변 (발표자), 공지 사항, 마무리

| 기타사항

- 등록비 : 등록비 50,000원(프로시딩 및 점심제공), 현장 신용카드 등록 가능
- 문의처 : (운영) 이찬영(과학기술원, 010-3011-5228, lcy5228@kaist.ac.kr)
(주제) 이동일(KHNP CRI, 010-7432-2714, diturtle@khnp.co.kr)

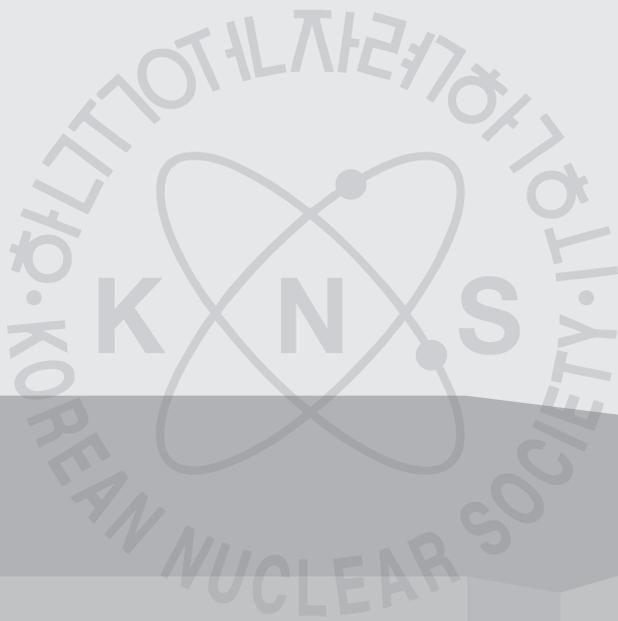
KOREAN NUCLEAR SOCIETY

KNS 2020 Spring

2020 온라인 춘계학술발표회

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분과별 논제 및 발표자



1A 원자로시스템기술 A
(Reactor System Technology A) – ORAL

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

The Effect of Turbomachinery Performance Degradation on the Load-following Performance of S-CO₂ Direct-cycle Micro Modular Reactor (KAIST-MMR)
Seongmin Son and Jeong Ik Lee(KAIST)

Gap Assessment on the Moderator Temperature Distribution in a Space Reactor
Sung Nam Lee, Nam-il Tak and Sung Hoon Choi(KAERI)

Design of an Experimental Apparatus to Test the Alkali-Metal Heat Pipes for Space Fission Power
Sung Deok Hong and Chan Soo Kim(KAERI)

Changes of Mechanical Properties after 3-Years Thermal Ageing at 900°C of Alloy 617
Woo-Gon Kim, Injin Sah, Eung-Seon Kim, and Min-Hwan Kim(KAERI), I.N.C. Kusuma and Seon-Jin Kim(PKNU)

Turbulence Model Assessment for a Heated Rectangular Riser of Air-cooled RCCS in Turbulent Forced and Mixed Convection Heat Transfer
Sin-Yeob Kim and Hyoung Kyu Cho(SNU), Chan-Soo Kim(KAERI)

Preliminary Thermal Analysis of Heat Pipe Cooled Reactor Core using Stress Analysis Solver in OpenFOAM
Myung Jin Jeong, San Lee and Hyoung Kyu Cho(SNU)

Characteristics of Braided Wire Wick Heat Pipe for Heat Pipe Cooled Reactor
Byung Ha Park and Chan Soo Kim(KAERI)

Study of Diameter Variation Affecting the Thermal Performance of Heat Pipe for Space Nuclear Reactor Applications
Ye Yeong Park and In Cheol Bang(UNIST)

Experiment Status of Supercritical CO₂ Turbo Alternator Compressor (TAC) Supported with Ceramic Ball Bearing
Seong Kuk Cho, Seongmin Son, Yongju Jeong and Jeong Ik Lee(KAIST)

1B 원자로시스템기술 B (Reactor System Technology B) – ORAL

| 좌장 배준호(Jun Ho Bae), 김성균(Sung Kyun Kim)

Preliminary Thermodynamic Analysis of LAES Integrated Nuclear Power Plant
Junghwan Park, Seunghwan Oh, Youngjae Choi, Jinyoung Heo and Jeongik Lee(KAIST)

Effect of Short Range Ordering on Lattice Variation in Garter Spring (X-750) in CANDU
Sung Soo Kim and Jong Yeop Jung(KAERI), Young Suk Kim(MacTec)

Diameter Evaluation Methodology for Un-measured Pressure Tubes of CANDU Reactor
Jong Yeob Jung and Eun Hyun Ryu(KAERI)

FACAPT - Failure Assessment Program for CANDU Pressure Tube
Jong Yeob Jung(KAERI), Ji Hoon Kang(FNC Tech.), Yoon Suk Chang(KHU)

Preliminary Analysis about SBO-induced Severe Accident at CANDU-6 using M-CAISER Code
Jun-young Kang, Dong Gun Son, Yong Mann Song, Sang Ho Kim, Ki Hyun Kim, Jong Yeob Jung and Jun Ho Bae(KAERI), Jae Ho Bae and Jae Seung Suh(SENTECH)

Preliminary Evaluation of Small LOCA under Severe Accident Conditions Using ISAAC and M-CAISER in Wolsong Plants
Y.M. Song, J.Y. Jung, J.Y. Kang, D.G. Son and J.H. Bae(KAERI), Jae Ho Bae(SENTECH)

Estimation of Gain Factors for the Cold Neutron Source in European Research Reactor
Han Jong YOO, Kyung-O KIM, Byungchul LEE and Gyuhong ROH(KAERI)

Application of Computational Fluid Dynamics for Generation of Hydraulic Forcing Functions on Reactor Internals
Dong Hwa Jeong, Kyong In Ju and Seong Chan Park(KEPCO E&C)

1C 원자로시스템기술 C (Reactor System Technology C) – ORAL

| 좌장 임재용(Jae Yong Lim), 배규환(Kyoo Hwan Bae)

Transient Analyses of the S-CO₂ Cycle Coupled to PWR for Nuclear Marine Propulsion

Jeong Yeol Baek, Jae Jun Lee and Jeong Ik Lee(KAIST)

SBLOCA Analysis of SMART with Trans-Critical CO₂ Power Conversion System for Maritime Propulsion

Bong Seong Oh and Jeong Ik Lee(KAIST)

Preliminary Analysis of Passive Residual Heat Removal System for a Nuclear-powered Ship

Wooseong Park and Yong Hoon Jeong(KAIST)

Preliminary Safety Analysis of Design Basis Events for TRU Burner Reactor

Jae-Ho Jeong(Gachon Univ.), Jonggan Hong(KAERI)

Proof of Concept Test of FBG (Fiber Bragg Grating)-based Pressure Transmitter

Byeong-Yeon Kim, Hyungmo Kim, Youngil Cho and Jewhan Lee(KAERI)

Effect of Wedge Ratios on the Characteristics of Wedge Flowmeter

Byungho Kim, Chungcho Cho, Jung Yoon, Minwhan Jung and Jewhan Lee(KAERI)

Sensitivity Analysis of Key Parameters of Stirling Converter for Small Reactor

Jewhan Lee(KAERI)

Calculation and Analysis of Redan Insulation Effect of STELLA-2 Test Facility using MARS-LMR

Ki-Ean Nam, Yong-Bum Lee, Jung Yoon and Jewhan Lee(KAERI)

Design and Analysis of Safety System using Heat Pipe of Hybrid Micro Modular Reactor (H-MMR)

Young Jae Choi, Seongmin Lee and Yong Hoon Jeong(KAIST)

1D 원자로시스템기술 D (Reactor System Technology D) – POSTER

| 좌장 허균영(Gyunyoung Heo), 김응수(Eung Soo Kim)

Preliminary Study of APR1400 Steam Cycle Suited for ESS Integration

Jin Young Heo, Jung Hwan Park, Seung Hwan Oh, Yong Jae Chae and Jeong Ik Lee(KAIST)

Comparison of Heat Transfer Fluids for Thermal Energy Storage System Integrated Nuclear Power Plant

Seunghwan Oh, Junghwan Park, Yongjae Chae and Jeong Ik Lee(KAIST)

Thermodynamic Analysis of a Conventional PWR Integrated with Compressed CO₂ Energy Storage System

Yongjae Chae, Junghwan Park, Seunghwan Oh, Yongju Jeong and Jeong Ik Lee(KAIST)

Effect of High Pressure Vessel Size on Compressed CO₂ Energy Storage for Nuclear Power Plant to Complement Renewable Energy

Yongju Jeong, Yongjae Chae, Soyoung Lee and Jeong Ik Lee(KAIST)

Investigation of Thermal Oscillation Induced by Dryout in Printed Circuit Steam Generator

Jin Su Kwon, Sung Gil Shin and Jeong Ik Lee(KAIST), Sang Ji Kim(KAERI)

Thermal Sizing of Printed Circuit Steam Generators with Straight Semicircular Micro Channels Connected by Cross Bridges

Seok Kim and Sang Ji Kim(KAERI)

Computational Evaluation of Natural Circulation Behavior Developed in a Small Modular Reactor using MARS Code

Gwang Hyeok Seo and Dongkyung Sohn(KINS)

Thermal Analysis using CFD for Control Rod Position Indicator

Tae-Won Na, Younghwan Joo, Jaeho Jung and Je-Yong Yu(KAERI)

Comparison of the Cooling Performance Between Coil-type and Water-jacket type Cooling System for the Main Coolant Pump

Younghwan Joo, Jaeho Jung and Je-Yong Yu(KAERI)

Preliminary Thermal Analysis for the Steam Generator Tubes in the Small Modular Reactor

Joonho Jeong and Je-Yong Yu(KAERI)

Stress Analysis of an IHX-Combined Steam Generator with Serpentine Tube Bundles

Hyungmo Kim, Jung Yoon, Jaehyuk Eoh, and HangJin Jo(KAERI), Yongsun Ju and Eunmi Ko(KOASIS Inc.), Namhyeong Kim(POSTECH)

A Minimization of Sodium Fire Risk using Drain Line in SFR

KAG SU JANG and YOUNG SIK JANG(KEPCO E&C)

Interim Safety Analysis on TRU Burner Sodium-cooled Fast Reactor

Jonggan Hong and Seok Hun Kang(KAERI)

Structural Integrity Evaluation of Copper Bonded Steam Generator

Seok Hoon Kim, Jong Bum Kim and Sung Kyun Kim(KAERI)

Design of the Perforated Plate Improving Flow Uniformity in the SFR Steam Generator

Van Toan Nguyen and ByoungJae Kim(CNU), Sunghyuk Im and Sun Rock Choi(KAERI)

Structural Damping Effects in Seismic Responses of PGSFR Reactor Structure

Jae-Han Lee, Sung-Hyun Lee and Sung-Kyun Kim(KAERI)

Frequency Analysis of Magnetic Journal Bearing Instability for MMR Condition

Dokyu Kim and Jeong Ik Lee(KAIST), Seung Joon Baik(KAERI)

Transient Lumped Parameter Analysis of Heat Pipe for a Space Nuclear Reactor

Nam-il Tak and Sung Nam Lee(KAERI)

Parametric Study for Interfacial Drag on Siphon Break Phenomena in a Research Reactor

Jong-Pil Park and Ik Kyu Park(KAERI)

Prediction of Low Pressure Subcooled Burnout Test using General Prediction Methods

Hyung Min Son and Jonghark Park(KAERI)

A Numerical Study on Air Ingression Phenomenon inside the Decay Tank for Research Reactor

Minkyu Jung and Ki-jung Park(KAERI)

Effects of Pool Dimension on Sloshing Height Caused by Earthquake

Kwangsub Jung and Jinho Oh(KAERI)

Parametric Study for Piping Thermal Expansion Stress under Limited Circumstances

Hwanho Lee and Jinho Oh(KAERI)

CFD Simulation of Narrow Channel Pressure Drop Test including Transition Region

Hyung Min Son and Jonghark Park(KAERI)

Comparison of Pump Performance Predicted by MARS-KS and Analytical Model

Dongkyung Sohn and Gwang Hyeok Seo(KINS)

Computational Methodology for the Sodium-Water Reaction in the Printed Circuit Steam Generator for the Sodium-Cooled Fast Reactor

Taewoo Kim(CNU), Sang Ji Kim(KAERI)

2A 원자로 해석 방법론 I
(Reactor Analysis Method I) – ORAL

| 좌장 이현철(Hyun Chul Lee), 조유권(Yu Gwon Jo)

nTRACER Solutions of the Two-Dimensional VVER Benchmark Problems
Seongchan Kim and Han Gyu Joo(SNU)

Skewness and Kurtosis Estimation Method for Fission Source Convergence Diagnosis in Monte Carlo Eigenvalue Calculations
Ho Jin Park and Jin Young Cho(KAERI)

Application of Quasi-Static Method to Whole Core Transient Calculation in nTRACER
Junsu Kang and Han Gyu Joo(SNU)

Source Expansion Nodal Kernel for Multi-Group Pin-by-Pin SP3 Core Calculation
Hyunsik Hong and Han Gyu Joo(SNU)

Validation of the Multi-Group Pin Homogenized SP3 Code SPHINCS through BEAVRS Benchmark Analyses
Jorge Gonzalez-Amoros, Hyunsik Hong, Hyun Ho Cho, and Han Gyu Joo(SNU)

Development and Assessment of ESCOT Pin-Wise Thermal-Hydraulics Coupling in a Direct Whole Core Calculation Code nTER
Alberto Facchini and Han Gyu Joo(SNU), Jaejin Lee(GRS), JinYong Cho(KAERI)

Performance Assessment of GPU-Based nTRACER/ESCOT Coupled Simulations
Kyung Min Kim, Namjae Choi, and Han Gyu Joo(SNU), Jaejin Lee(GRS)

A Spectral Optimization Study of Fuel Assembly for Soluble-Boron-Free SMR
Xuan Ha Nguyen, Seongdong Jang, and Yonghee Kim(KAIST)

2B 원자로물리 및 일반 (Reactor Physics General-I) – ORAL

| 좌장 홍서기(Ser Gi Hong), 윤주일(Joo Il Yoon)

Modeling of Removable Burnable Poison Rods in STREAM/RAST-K Two-step PWR Analysis Code
Anisur Rahman, Jiwon Choe, and Deokjung Lee(UNIST)

Preliminary Evaluation of Centrally Shielded Disk-Type Burnable Absorber in Three-Batch Soluble-Boron-Free APR1400 Reactor
Husam Khalefih, Xuan Ha Nguyen, and Yonghee Kim (KAIST)

Modelling and Preliminary Analysis of the SPERT III E-core with nTRACER
Junsu Kang, Seungug Jae, and Han Gyu Joo(SNU)

Fuel Loading Pattern Optimization for OPR-1000 Equilibrium Cycle by Simulated Annealing Algorithm
Dongmin Yun, Hanjoo Kim, Chidong Kong, and Deokjung Lee(UNIST), Doyeon Kim(KHNP CRI)

A Monte Carlo Based Response Matrix Method for Pin-wise Transport Calculations
Sori Jeon, Namjae Choi, and Han Gyu Joo(SNU)

Flexible Geometry Treatment in PRAGMA Using NVIDIA(R) Ray Tracing Engine OptiX™
Jaeuk Im, Namjae Choi, and Han Gyu Joo(SNU)

Verification of New Mesh-based Rigorous 2 Step Computational Approach for the Shutdown Dose Rate Distributions in the Fusion Facilities
Jae Hyun KIM, Myeong Hyeon WOO, Chang Ho SHIN, and Ser Gi HONG(HYU)

Implementation and Verification of Adjoint Neutron Transport Calculation in MUST Code
Duy Long Ta and Ser Gi Hong(HYU)

2C 원자로해석 방법론 II (Reactor Analysis Method II) – ORAL

| 좌장 이덕중(Deokjung Lee), 박호진(Ho Jin Park)

The Streaming Effect Coming from Gap Like Property in the Multi-group Diffusion Calculation
Eun Hyun Ryu and Jong Yub Jung(KAERI), Han Gyu Joo(SNU)

Implementation of Cross Section Random Sampling Code System for Direct Sampling Method in Continuous Energy Monte Carlo Calculations
Ho Jin Park, Tae Young Han, and Jin Young Cho(KAERI)

Pin Power Reconstruction with Leakage-corrected Embedded Calculation in PWRs
Hwanyeal Yu, Seongdong Jang, and Yonghee Kim(KAIST)

Progress of GPU Acceleration Module in nTRACER for Cycle Depletion
Han Gyu Lee, Seung Ug Jae, Namjae Choi, Junsu Kang, and Han Gyu Joo(SNU)

Evaluation of Deterministic Truncation of Monte Carlo (DTMC) Solutions with Partial Currents Fine-Mesh Finite Difference Formulations
Inhyung Kim and Yonghee Kim(KAIST)

Transient Capability of a Multi-group Pin Homogenized SP3 Code SPHINCS
Hyun Ho Cho, Junsu Kang, and Han Gyu Joo(SNU), Joo Il Yoon(KEPCO NF)

Polynomial Interpolation in the Predictor Corrector Quasi-Static Method for Transient Calculation
Taesuk Oh and Yonghee Kim(KAIST)

A Study on the Optimal Use of Ramp-up Technique Under Massive Particle Condition with CMFD Acceleration
Jaeuk Im, Namjae Choi, and Han Gyu Joo(SNU)

nTRACER/ESCOT Initial Coupling and Assessment
Alberto Facchini and Han Gyu Joo(SNU), Jaejin Lee(GRS)

2D 원자로물리 일반 (Reactor Physics General-II) – ORAL

| 좌장 김종운(Jong Woon Kim), 김우송(Woosong Kim)

Evaluation of a New Group Structure for nTRACER Based on HELIOS 47 Group Structure and Extended Resonance Range for 20w% Uranium and MOX Fuels
Seungug Jae and Han Gyu Joo(SNU)

KERMA and DPA Tallies in the Monte Carlo Code MCS
Matthieu Lemaire, Hyunsuk Lee, and Deokjung Lee(UNIST)

Analysis of Errors from Various Origins in Pin-Homogenized Multi-Group Calculation
Hyunsik Hong and Han Gyu Joo(SNU)

Sorted Compressive Sensing for Reconstruction of Failed In-Core Detector Signals
Gyu-Ri Bae and Moon-Ghu Park(Sejong Univ.)

Applicability of GPU Acceleration for RAST-K Fast Reactor Depletion Solver
Siarhei Dzianisau and Deokjung Lee(UNIST)

Application of FeCrAl Alloy Fuel Cladding to a YGN3 Reactor Neutronics Design for Cycle 3 and Equilibrium Cycle
HuynWook Kang and Hyun chul Lee(PNU)

Enhancement of Cross-section Feedback Module for Temperature Coefficient in STREAM/RAST-K
Jiwon Choe, Peng Zhang, Kyeongwon Kim, Deokjung Lee(UNIST), Sooyoung Choi(UM)

Optimization Design of a Micro Modular Water-cooled Reactor with a Solid Core
Hochul Lee and Hyun Chul Lee(PNU), Hong Sik Lim and Tae Young Han(KAERI)

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

| 좌장 심형진(Hyung Jin Shim), 한태영(Tae Young Han)

Analysis of Beryllium Poisoning Effect on the H-LPRR Core Reactivity
Kyung-O KIM, Gyuhong ROH, and Byungchul LEE(KAERI)

Low Power Transient Analysis for Subcritical PWR Core with Fixed Neutron Source Via 3-D Nodal Diffusion Code RAST-K
YuGwon Jo and Ho Cheol Shin(KHNP CRI)

Generation of a Multigroup Gamma Production and Photon Transport Library for STREAM
Kyeongwon Kim, Matthieu Lemaire, Nhan Nguyen Trong Mai, Wonkyeong Kim, and Deokjung Lee(UNIST)

Comparison of ENDF/B-VIII.0 and ENDF/B-VII.1 in Criticality and Depletion Using PWR Pin Cell by STREAM
Kyeongwon Kim, Wonkyeong Kim, Sooyoung Choi, and Deokjung Lee(UNIST), Kiho Kim(KINS)

Feasibility Study on Machine Learning Algorithm in Nuclear Reactor Core Diagnosis
Hanjo Kim, Dongmin Yun, and Deokjung Lee(UNIST), HoCheol Shin and SangRae Moon(KHNP CRI)

Uncertainty Quantification of Decay Heat in Spent Nuclear Fuel by STREAM/RAST-K with Stochastic Sampling
Jaerim Jang, Bamidele Ebiwonjumi, Chidong Kong, Yunki Jo, Wonkyeong Kim, Jinsu Park, and Deokjung Lee(UNIST)

Extension of Pin-based Point-wise Energy Slowing-down Method into Double Heterogeneity Fuel
Tae Young Han and Chang Keun Jo(KAERI)

In-Core Power Distribution Monitoring of PWR by STREAM/RAST-K
Jaerim Jang, Jinsu Park, and Deokjung Lee(UNIST)

3A 원자력시설해체 및 방사성폐기물관리 I (Nuclear Facility Decommissioning and Radioactive Waste Management I) – ORAL

| 좌장 연제원(Jei-Won Yeon), 임상호(Sang Ho Lim)

Radioactivity Analysis of Tritium Contaminated Wood Sample by Electrolysis of Tritiated Water and Extraction by Combustion Method

Ki Joon Kang, Jun Woo Bae, and Hee Reyoung Kim(UNIST)

Adsorption and Immobilization of Cs by Aluminosilicate and Cold Sintering

Muhmood ul Hassan, Sujeong Lee, and Ho Jin Ryu(KAIST)

Feasibility Study of Bismuth based Metal-Organic Framework as an Adsorbent for Radioiodine Capture

Young-Eun Jung, Seong-Woo Kang, and Man-Sung Yim(KAIST)

Design of Prototype (Part 1) that Treats Radioactive Waste Containing C-14

Bong-Ki Ko, Hyeon-Oh Park, Ga-Yeong Kim, and Seung-Geon An(Sunkwang T&S)

New Approach over Permanent Disposal of All Nuclear Wastes in the ROK

Yongsoo Hwang and Hyowon Nam(KAERI)

Draft of Regulatory Requirements for Site Characterization using Site-specific Underground Research Facility

Seung Gyu Hyun, Hyeon Dong Woo, Hoseon Choi, Seon Jong Park, and Kang Ryong Choi(KINS)

Development Strategy for Tritium(^3H) Extraction · Removal from Liquid Radioactive waste of Nuclear Power Plants

JeongHee Lee, Yongmin Park, Gibeom Park, Sangwoo Noh, Seungil Kim, and Duk-won Kang(eLIM Global)

Analysis of ^{137}Cs Concentration in Marine Sediments Near Fukushima Nuclear Power Plants

Jei-Won Yeon, Ji Hyeon Song, and TaeJun Kim(KAERI)

3B 원자력시설해체 및 방사성폐기물관리 II (Nuclear Facility Decommissioning and Radioactive Waste Management II) – ORAL

| 좌장 최우석(Woo-Seok Choi), 차완식(Wansik Cha)

Illustration of Nagra's AMAC Approach to the PWR Kori-1 Based on Experience from its Detailed Application to Swiss NPPs

Ben Volmert, Valentyn Bykov, and Dorde Petrovic(NAGRA) , John Kickhofel and Natalia Amosova(Apollo+), Jong Hyun Kim and Cheon Whee Cho(ACT Co.,)

Evaluation of Dissolution Behavior of Magnetite in an Inorganic Acidic Solution for the PHWR System Decontamination

Ayantika Banerjee(KAERI-UST), Wangkyu Choi, Byung-Seon Choi, and Seon-Byeong Kim(KAERI)

Development of Survey Procedures and Measurement System for the Detecting Concentration of Residual Radioactivity in Decommissioning of NPP

Ga-Yeong Kim, Ki-Hyun Kwon, Yun-seo Go, and Seung-Geon An(Sunkwang T&S)

Current Status of Korean Multi-modal Transportation Test(MMTT)

Woo-seok Choi, Jaehoon Lim, Jongmin Lim, Yun-young Yang, Gileon Jeong, and Sang soon Cho(KAERI)

Comparison for Spent Fuel Behavior of PWR and SMRs

Gyujae Nam and Youho Lee(SNU), Jongdae Hong(KAERI)

Preliminary Criticality Analysis on the OASIS-32K Canister With 32 Spent Nuclear Fuel Assemblies of Kori-1
Young Tae Han, Joon Gi Ahn, and Yong IL Kim(KEPCO E&C)

3C 원자력시설해체 및 방사성폐기물관리 (Nuclear Facility Decommissioning and Radioactive Waste Management) – POSTER

| 좌장 최병선(Byung-Seon Choi), 정종태(Jongtae Jeong)

Performance Test of 3D Printed Ceramic Filters for Capturing of Radioisotopes From a Nuclear Reactor Coolant
Sujeong Lee, Taeryoun Kim, and Hojin Ryu(KAIST), Omar Sharief Ibrahim Al-Yahia and Ho Joon Yoon(KUSTAR)

A Study on the Mechanism for PWR Spent Fuel Rod Extraction
Young-Hwan Kim, Yung-Zun Cho, and Seok-Min Hong(KAERI)

Mechanism Design for PWR 16x16 Spent Fuel Disassembling
Young-Hwan Kim, Yung-Zun Cho, and Ju-Ho Lee(KAERI)

Risks on UF6 Sampling Operation
Jeong-Guk Kim, Jongjin Kim, Yujeong Choi, San Chae, and Jin-Woo Lee(KAERI)

A Study on Treatment of Concentrated Radwaste Water in NPPs
Yu-Sun Yeom, Doo Hee Lee, Jung Gi Kang, Jung Keun Kim, Jin-Wook Kang(LC gen Co.), and Jun-Gi Yeom(KHNP)

Possibility of Disposal for Spent Nuclear Fuel Reprocessing in the Aspect of the Radiological Risk of Human Intrusion
Hye Won Shin, Hyeong Jin Byeon, Ki Won Kang, Yu Lim Lee, Jae Yeong Park, and Il Soon Hwang(UNIST)

Induction Melting of Radioactive Stainless Steel Waste for Decommissioning of NPPs
Ji-Hoon Lee(KHNP CRI)

Recognition and Classification of Radioactive Waste Using Computer Vision-based Deep Learning Technology
Sung-Chan Jang, Dong-Ju Lee, IL-Sik Kang, and Hee-Seoung Park(KAERI)

Removal of Radioactive Iodine with Graphene Fiber-based Adsorbents
MD. Mobashar Ahmed, Minsoek Lee, and Hojin Ryu(KAIST)

Classification for Transportation Cask of Radioactive Materials
Gil-Eon Jeong, Sang Soon Cho, and Ki-Seog Seo(KAERI)

Sensitivity Analysis for Input Parameters of RADTRAN Code
Dong-Sik Jin, Heekyung Kim, Jea-Soo Noh, and Bong-Jin Ko (ACT Co.)

A Status on Development of Information Management System for Radioactive Waste Generated in KAERI
Yunjeong Hong, Jeong-Guk Kim, JongJin Kim, and JinWoo Lee(KAERI)

Impacts of Major Input Parameters on the Safety of Landfill Disposal of Decommissioning Wastes
Jongtae Jeong, Min Hoon Baik, Jae Kwang Lee, and Ji-Hun Ryu(KAERI)

A Study on Health Effects of Uranium Mining Waste in Tanzania
Mujuni Rweyemamu and Juyoul Kim(KINGS)

Sensitivity Analysis to Evaluate Misalignment Effect of Drop Angle in the Drop Test of IP-2 type Metallic Container
Jongmin Lim, Yun Young Yang, and Ju-chan Lee(KAERI)

Preliminary Study on the Assessment of Radiological Effect for Radionuclides Released Through the Groundwater Pathway After the Closure of Near-surface Disposal Facility
Ki Nam Kwon, Min Su Ju, Jin Young Chung, and Jung Ho Song(BRNC Inc), Tae Hoon Jeon(Orbitech), and Jae Hak Cheong(KHU)

Radiological Accident Assessment of Naturally Occurring Radioactive Material Waste
Joung-Hyuk Hyun and Juyoul Kim(KINGS)

KAERI Nuclear Material Management: Uranium Residue Storage Facility
YuJeong Choi, Jeong Guk Kim, and Jong Jin Kim(KAERI)

Prediction of Long Term Creep Behavior of Concrete for Decommissioning Waste Disposal Container
Jong-Bum Kim, S.K. Kim, K.S. Seo, and J.C. Lee(KAERI)

Performance Evaluation of Mobile Gamma Monitoring System for Direct Measurement and Scanning of Decommissioning Site
Chanki Lee, Se-Won Park, and Hee Reyoung Kim(UNIST)

Development Status of Full System Decontamination Technology by Reactor Types
Hak Soo Kim and Cho Rong Kim(KHNP CRI)

Analysis of Decommissioning Recommendations of the IAEA and Comparison of Implementation Status Between Korea and the United States
Sunwoo Park and Kwangheon Park(KHU)

Reclassification by ISDC Structure to Management and D&D Costs in NPP Decommissioning
Jae Yong Oh and Hyung-woo Seo(KHNP CRI)

Review on Comparison of Exposure Pathway in RESRAD and DandD Code
Won-Tak Lee, Jae-Yong Lee, and Yong-Soo Kim(HYU)

Establishment of the Basic Concept of Decommissioning Project Management System
HyoJin An and JinHo Park(NUDECOMM), SeungKook Park(KAERI)

Decontamination Process Proposal for Used Steam Generator Tubes by Using Molten Salt Technologies
Younghwan Jeon, Jungho Hur, Seungmin Ohk, and Jaeyeong Park(UNIST)

A Study on Assumption of Accident Scenarios during Decommissioning of Nuclear Power Plant
Kwang-Ho Jo, Hyung-Woo Seo, and Jin-Won Son(KHNP CRI)

A Study on the Review of Concrete Waste Generated by Decommissioning of Nuclear Power Plant
Hyo Jeon Kim, Jaeyong Lee, Kyungmin Kim, and Yong soo Kim(HYU)

Comparative Study on Application Method and Timing of Decommissioning Quality Assurance Program for Nuclear Power Plant

Chan-Gyu HAN and Sang-Jin KIM(KINS)

Performance of Foam Decontamination for Fixed Radioactive Contamination

Wangkyu Choi, Mansoo Choi, and Seonbyeong Kim(KAERI)

The Interface Optimization of Radioactive Waste Management Life Cycle Processes using Big (Meta) Data Profiling and Mining

kwangyoung Sohn, changhwan Cho, and sungjong Kim(Miraeen)

Technical Requirements of the Chemical Decontamination for the PHWRs System

Byung-Seon Choi, Wang-Kyu Choi, Seon-Byeong Kim, and Bum-Kyung Seo(KAERI), Banerjee Ayantika(UST)

Configuration Management for Decommissioning Nuclear Power Plants

Jungsup Oh, Moon Joo Gil, Sung Jin Joo, Hyong Chol Kim, and Dai Il Kim(NSE)

The Operation Methods of the Electric Power System for Kori Units 3&4 after Permanent Shutdown

Jin Wook Han(KHNP), Hyun Chul Lee(PNU)

Fire Test Plan for Spent Nuclear Fuel Transportation Package Using a Scaled-Down Model

Ju-Chan Lee, Kyung-Sik Bang, Yun Young Yang, and Woo-Seok Choi(KAERI)

A Misload Analysis for PLUS7 Fuel Assemblies in the 32 Burnup Credit Cask

Seung Uk Yoo, Hyuk Han, Chang Je Park, Muth Boravy, Saed Alrawash, and Dong Hyuk Park(Sejong Univ.)

Development of Off-Gas Capturing System from Pyroprocessing

Seok-Min Hong, Yung-Zun Cho, and In Gyu Jeon(KAERI)

Initial Results of High Burnup Dry Storage Cask Research Project at U.S

Donghee Lee, Yongdeog Kim, and Taehyeon Kim(KHNP CRI)

Sensitivity Calculations for Shielding of KN-12 Spent Nuclear Fuel Transportation Cask using MAVRIC and SAMPLER

Kyoon-Ho CHA and Do-Yeon KIM(KHNP CRI)

Physicochemical Behavior of Ce-doped UO₂

Jeongmook Lee, Dong Woo Lee, Hwakyeung Jeong, Jong-Yun Kim, and Sang Ho Lim(KAERI)

The pH Change of Ketone and Iodide Solutions after Gamma Irradiation

Minsik Kim, JaeHoon Kim, and Jei-Won Yeon(KAERI)

4A 핵연료 모델링
(Fuel Modeling) – ORAL

| 좌장 류호진(Ho Jin Ryu), 신창환(ChangHwan Shin)

Investigation of Natural Frequencies of the Bottom Nozzle of APR1400 Fuel Assembly
Muhammad Subhan and Ihn Namgung(KINGS)

APR400 Spacer Grid Structural Modelling and Assessment of Deformation Behavior
Amy Nkirote Gichuru and Ihn Namgung(KINGS)

Steam Oxidation Behavior of Cr-coated U_3Si_2 Atomized Particle
Jae Ho Yang, Dong Seok Kim, Dong-Joo Kim, Ji-Hae Yoon, and Sung-Hwan Kim(KAERI)

Fuel Performance Uncertainty to Rod Burst Power in LBLOCA Analysis
Joosuk Lee and Young-Seok Bang(KINS)

Phase-field Modeling of Hydride Reorientation in Zirconium Cladding Materials under Applied Stress
Wooseob Shin and Kunok Chang(KHU)

Effect of Pore Size on Effective Conductivity of UO_2 : A Computational Approach
Bohyun Yoon and Kunok Chang(KHU)

Calculation of Grain Boundary Pore Size Distribution in Light Water Reactor UO_2 Fuel by FRAPCON 4.0
Jae joon Kim, Faris B. Sweidan, and Ho jin Ryu(KAIST)

Development and Validation of a Code for the Oxygen Distribution of Zircaloy Cladding in Non-Isothermal Transient Steam Oxidation
Dongju Kim, Kyunghwan Keum, Hyunwoo Yook, and Youho Lee(SNU)

Effect of the Difference in the Distribution of Crystallographic Orientation on the Irradiation-induced Deformation of Zr-2.5wt%Nb Material
Dong-Hyun Ahn and Gyeong-Geun Lee(KAERI)

Calculation of the Effect of Temperature and Xenon Gas on the Defect Formation in Irradiated UO_2 Using Molecular Dynamics Simulation
Hakjun Lee and Ho Jin Ryu(KAIST)

4B 원자로재료 시험 (Reactor Material Tests) – ORAL

| 좌장 김진원(Jin Weon Kim), 전순혁(Soon Hyeok Jeon)

Magnetite-Accelerated Stress Corrosion Cracking of Alloy 600 in 10% NaOH Solution

Geon Dong Song, Jeoh Han, Soon-Hyeok Jeon, and Do Haeng Hur(KAERI)

Cyclic Fracture Behaviors of TP304 Stainless Steel Base and Weld Metals Under Displacement-and Load-controlled Loads

Sang Eon Kim and Jin Weon Kim(CSU)

Effect of Zinc Injection Timing on the Characterization of Oxide Film of Alloy 690TT in Simulated PWR Primary Coolant

Dong-Seok Lim, Soon-Hyeok Jeon, and Do Haeng Hur(KAERI), JongHyeon Lee(CNU), Jinsoo Choi and Kyu Min Song(KHNP CRI)

Thermal Stability of Nitrile Butadiene Rubber in Simulated Severe Accident Environments

Inyoung Song and Ji Hyun Kim (UNIST), Daehwan Kim, Taehyun Lee, and Kyungha Ryu(KIMM)

An Experimental Study on the Effects of Thermal and Radiation Aging on Cable Fire

MinHo Kim, SeokHui Lee, and MinChul Lee(INU), SangKyu Lee and JuEun Lee(KINS)

Recent Advances in the Fracture Toughness Reference Curves of ASME Code-work Progress in Code Case N-830 Revision

Bong-Sang Lee(KAERI)

Effect of Hydrogen Concentration on the Surface Oxidation of Ni-base Alloys in Simulated PWR Primary Water

Yun Soo Lim, Dong Jin Kim, Sung Woo Kim, Seong Sik Hwang, Hong Pyo Kim, and Min Jae Choi(KAERI)

Materials Harvesting of Reactor Internals From a Decommissioned Plant

Seong Sik Hwang, Sung Woo Kim, Min Jae Choi, Sung Hwan Cho, Jong Yeon Lee, Hong Pyo Kim, Yun Soo Lim, and Dong Jin Kim(KAERI)

Nanoscale Characterization of Oxide Dispersion Strengthened CoCrFeMnNi High-Entropy Alloy by Small Angle Neutron Scattering

SeungHyeok Chung and Ho Jin Ryu(KAIST)

4C 핵연료 제조 및 시험 (Fuel Manufacturing and Tests) – ORAL

| 좌장 박정용(Jeong-Yong Park), 김동주(Dong-Joo Kim)

Development of Mo Microplate Aligned UO₂ Pellets for Accident Tolerant Fuel

Dong Seok Kim, Dong-Joo Kim, Jae Ho Yang, Ji-Hae Yoon, Heung Soo Lee, and Hyun-Gil Kim(KAERI)

Fabrication of Metallic Particulate Fuel by Frequency-variable Electrodynamic Vibration

Ki-Hwan Kim, Yoon-Myeng Woo, Seok-Jin Oh, Sang-Gyu Park, and Jeong-Yong Park(KAERI)

The Effect of Cooling Rates on the Post-LOCA Ductility of Zircaloy Cladding

Kyunghwan Keum, Hyunwoo Yook, Dongju Kim, and Youho Lee(SNU)

Effect of Non-Isothermal Transient Zircaloy Oxidation on Emergency Core Cooling System Criteria

Hyunwoo Yook, Kyunghwan Keum, Dongju Kim, and Youho Lee(SNU)

Study of Metal doped Uranium Oxide Using In-Situ High Temperature X-ray Diffraction

Dong Woo Lee, Jeongmook Lee, Jong-Yun Kim, Tae-Hyeong Kim, Junghwan Park, and Sang Ho Lim(KAERI)

Characterization of Nano-sized (Ti, Mo)C Forming FeCrAl Alloy

Sungyu Kim, Joonho Moon, and Chi Bum Bahn(PNU), Chang-Hoon Lee and Jae Hoon Jang(KIMS), Ji Hyun Kim (UNIST)

Experimental Evaluation of TiN Coating on Fouling Resistance of PWR Fuel Cladding

Junhyuk Ham, Yunju Lee, Seung Chang Yoo, and Ji Hyun Kim(UNIST)

4D 원자로재료 평가 (Reactor Material Evaluation) – ORAL

| 좌장 김지현(Ji Hyun Kim), 김민철(Min-Chul Kim)

X-ray CT Analysis on Stainless Steel - Aluminum Dispersion Plate

Hyeong-Jin Kim and Ho Jin Ryu(KAIST)

Thermodynamic Model for Predicting Hydrogen Segregation at Grain Boundaries for Bcc-iron

Sojeong Yang and Takuji Oda(SNU)

First-principles Calculation of Solution Enthalpy of Key Gaseous Impurities in Liquid Sodium: Correction Methods

Junhyoung Gil and Takuji Oda(SNU)

Evaluation of Irradiation Characteristics of ETU-10 Nuclear Graphite
Se-Hwan Chi(GINIS), Hiroshi Okuda and Jun Ohashi(IBIDEN)

Enhancement of LBB Characteristic of Main Steam Line Piping in Korean Nuclear Power Plants by Using the Improved SA508 Gr.1A Steels
Seokmin Hong, SeMi Hyun, Jongmin Kim, and Min-Chul Kim(KAERI), Maan-Won Kim and Hong-Deok Kim(KHNP CRI)

Effect of Oxygen Concentration on the Solution Enthalpy of Fe in Liquid Na: A First-principles Study
Jeong-Hwan Han and Takuji Oda(SNU)

Influence of the Nano Carbide Dispersed Advanced Radiation Resistant Austenitic Stainless Steels (NC-ARES) Microstructure on the Radiation Resistance Under Ion Irradiation
Ji Ho Shin, Byeong Seo Kong, and Changheui Jang(KAIST), Michael Philip Short(MIT)

Investigation of Neutron-Irradiated Microstructure of Fe-Cr System: A GPU Accelerated Phase-field Method
Jeonghwan Lee and Kunok Chang(KHU)

4E 핵연료 I (Nuclear Fuels I) – POSTER

| 좌장 김재용(Jae-Yong Kim), 장훈(Jang, Hun)

Multi-Metallic Layered Tubing Fabrication for ATF Cladding Application
Joonho Moon, Sungyu Kim, and Chi Bum Bahn(PNU), Ji Hyun Kim (UNIST), Michael P. Short (MIT)

Numerical Investigation of Thermal Conductivity in UO₂-5 vol% Mo Fuel Pellet with Mo Configuration of Radial Direction
Heung Soo Lee, Dong-Joo Kim, and Dong-Seok Kim(KAERI), Dong Rip Kim(HYU)

Development of Semi-empirical Thermal Conductivity Model of U-Mo/Al Dispersion Fuel
Tae Won Cho, Yong Jin Jeong, Kyu Hong Lee, Sung Hwan Kim, Ki Nam Kim, and Jong Man Park(KAERI)

Analysis about Effect of Power History on Fuel Performance under RIA Condition
Jinho Jeong and Yugwon Jo(KHNP CRI)

Study on the Failure Criteria of Cladding in MERCURY Code
Sung-Uk Lee and HyoChan Kim(KAERI), Jinsu Kim and Jeong Whan Yoon(KAIST)

Comparative Study of Massih's and Findlay's Models for Fission Gas Diffusion
Namho Lee and Kang Moon Lee(KEPCO NF)

Scoping Evaluation of CANDU Fuel Performance Using Non-Parametric Statistics
Kang-Moon Lee(KEPCO NF)

Fuel Fragmentation, Relocation, and Pulverization Models and Criteria for Fuel Behavior Evaluation of Halden IFA 650.4 LOCA Test using FRAPTRAN
Faris B. Sweidan, Qusai M. Mistarihi, Jae Joon Kim, and Ho Jin Ryu(KAIST)

Material Properties Evaluation of Multi-layered ATF Cladding Using Instrumented Micro-indentation Techniques
Jong-Dae Hong, Dong-Hyun Kim, Sung Geun Kim, Hongryul Oh, Jae-Yong Kim, and Hyun-Gil Kim(KAERI)

Full Scale Earthquake Accident Experiment of Simulated Spent Fuel Within Partial Cell of Storage Rack under Water
Kanghee Lee, Heungseok Kang, Dongsoek Oh, and Sooho Kim(KAERI), Wonman Park and Cheongryul Choi(EST)

Fluid-Structure Interaction Modeling Issues of the Fuel Assembly
Kanghee Lee, Heungseok Kang, Dongseok Oh, and Hyungil Kim(KAERI)

Microstructural Characterization of Oxides Formed on Cr-Al Alloy Coated Accident Tolerant Fuel Cladding After Oxidation at 1200°C in a Steam Environment
Dong Jun Park, Yang Il Jung, Jung Hwan Park, Byoung Kwon Choi, Young Ho Lee, and Hyun Gil Kim(KAERI)

Metallic Fuel Performance Evaluation for Micro Lead cooled Fast Reactor
Ji Won Mun, Hyung Jin Kim, Faris B. Sweidan, and Ho Jin Ryu(KAIST)

Fuel Performance Analysis of Advanced Ferritic Steel Cladding for Accident Tolerant Fuel
Jeong-Hyeon Kim, Chan Do Jung, Hun Jang, and Chae-ho Lim(KEPCO NF)

Corrosion Properties of Cr Coating Deposited on Nuclear Fuel Cladding
Jung-Hwan Park, Yang-Il Jung, Dong-Jun Park, Hyun-Gil Kim, Byoung-Kwon Choi, and Young-Ho Lee(KAERI)

4F 핵연료 II (Nuclear Fuels II) – POSTER

| 좌장 임광영(Kwang-Young Lim), 정용진(Yong Jin Jeong)

Optimization of High-density Dispersion Target Using Atomized Uranium-Aluminum Alloy- Powders
Tae Won Cho, Ki Nam Kim, Yong Jin Jeong, Kyu Hong Lee, Sung Hwan Kim, and Jong Man Park(KAERI)

Dry Electropolishing of an Additively Manufactured Spacer Grid
Han-Gil Woo, Jin-Seon Kim, Joo-Young Ryu, Jin-Seok Lee, and Seung-Jae Lee(KEPCO NF)

Lateral Crush Strength of Additively Manufactured Zirconium Alloy Spacer Grid

Joo-Young Ryu, Han-Gil Woo, Chae-Young Nam, Young-Ik Yoo, Jin-Seok Lee, and Seung-Jae Lee(KEPCO NF)

Interaction of U-10wt.%Zr Melt with Y₂O₃-Coated Graphite Crucible during Casting

Seong-Jun Ha and Young-Kook Lee(Yonsei U), Jeong-Yong Park, Seoung-Woo Kuk, Kyung-Chai Jeong, YoungMo Ko, and YoonMyeng Woo(KAERI)

Correlation Between Billet Microstructure & Anisotropy of Annular Fuel Fabricated by Hot Extrusion Method

Sang-Gyu Park and Jeong Yong Park(KAERI)

Design and Manufacture of Reusable Graphite Molds for Metal Fuel Rod Manufacturing Process

Kyungchai Jeong, Seokjin Oh, Kihwan Jim, Seoungwoo Kook, and Jeongyong Park(KAERI)

Fabrication of CeO₂ Pellet with Controlled Microstructure for the Application as a Spent Fuel Surrogate

Qusai Mistarihi and Ho Jin Ryu(KAIST)

Design of Optimal Coating Layer Thicknesses for an 800- μ m UO₂ TRISO of a Small Prismatic HTR

Young Min Kim, Chang Keun Jo, and Eung Seon Kim(KAERI)

Comparison of Measurement and Analysis of High Temperature Steady-state Creep Experiment for Equipment Verification

Gyeong-Ha Choi, Dong-Hyun Kim, JaeYong Kim, and ChangHwan Shin(KAERI), Byoung-Jae Kim(CNU)

Hydride Reorientation Under Load Condition in Zirconium-2.5Niobium

Sang-yeob Lim, SungSoo Kim, and Gyeong-Geun Lee(KAERI)

Dissolution and Precipitation Behavior of Hydrogen by Differential Scanning Calorimetry in Zr-2.5% Nb Pressure Tube Material

SungSoo Kim, Sang Yup Lim, and Gyeong-Geun Lee(KAERI)

Hydrothermal Corrosion Behavior of TiN and TiCrN as an Environmental Barrier Coating for ATF Claddings

Arang Do, Daejong Kim, Weon-ju Kim, Ji Yeon Park, and Hyeon-Geun Lee(KAERI), Heon-Jin Choi(Yonsei Univ.)

Optimized Manufacturing Process of Large TRISO Fuel Particle Using Surrogate Kernel

Doeun Kim and Soonlk Hong(CNU), Hyeon geun Lee and EungSun Kim(KAERI)

Joining Between SiC Composites Cladding and end Cap Using CrAl Intelayer

Hyeon-Geun Lee, Daejong Kim, and Weon-Ju Kim(KAERI)

4G 원자력재료 (Nuclear Materials) – POSTER

| 좌장 김동진(Dong-Jin Kim), 반치범(Chi Bum Bahn)

Development of Probabilistic Environmental Fatigue Lifetime Model for Ni-Base Alloys Using End-of-Life Data
Jae Phil Park and Chi Bum Bahn(PNU)

A Review on Stress Corrosion Cracking of Stainless Steel 316L in Oxygenated and Chlorinated Primary Water Chemistry
Dong-Jun Lee, You-Jin Kang, and Yong-Soo Kim(HYU)

Zero Failure Data Analysis for Alloy 690 PWSCC Initiation Time Prediction
Dayu Fajrul FALAAXH and Chi Bum BAHN(PNU)

Development of PWSCC Initiation Evaluation Method of High Corrosion Resistant Structural Materials Using Rupture Disk Type Corrosion Test
GeonWoo Jeon, JungMin Kim, DongJin Kim, and SungWoo Kim(KAERI), ChangYeol Jeong(DU)

Study on the Experimental Conditions for the Control of High DH Concentration in the Simulated Primary Water Loop
Ju-Eun Park, Dong-Jin Kim, and MinJae Choi(KAERI), Dongbok Lee(SKKU)

Evaluation of Mechanical Properties of Additive-Manufactured Stainless Steel for Nuclear Applications
Jung-Min Kim, Junhyun Kwon, and Hyung-Ha Jin(KAERI)

Feasibility of Cathodic Plasma Electrolytic Oxidation for Corrosion Resistant Stainless Steel Against Chloride-based Matter
Jaewoo Lee, Sangyoon Lee, Jun Heo, and Sung Oh Cho(KAIST)

Root Cause Analysis of Background Noise Signals in Full Length Inspection of Steam Generator U-Tubes by using an Eddy Current Bobbin Coil Probe
Deok Hyun LEE, Myung Sik CHOI, Se Beom OH, and Kyung Mo KIM(KAERI)

Additive Manufacturing of Co-base Alloy for Nuclear Application; Wear Property
Ji Hoon Kang, Jinsung Jang, Chang Hee Han, and Junhyun Kwon(KAERI), Min Ha Shin(KIST)

An Investigation into the Cause for the Hydrothermal Corrosion of $\text{Cr}_x\text{Al}_{1-x}$ Diffused CVD SiC
Hee Song, Dae-Jong Kim, Weon-Ju Kim, Ji-Yeon Park, and Hyeon-Geun Lee(KAERI), Soon-Gil Yoon(CNU)

Morse Parameters of α -Uranium by Ab-initio Calculation
Hyun Woo Seong and Ho Jin Ryu(KAIST)

In-reactor Testing Using Capsules at HANARO: Current Status and Future Plan
Seongwoo Yang, Seungjae Park, Yoontaeg Shin, Keenam Choo, Chulyong Lee, and Mansoon Cho(KAERI)

Development of Reusable Casting Parts for Metallic Fuel Fabrication Process
Seoungwoo Kuk, Kyungchai Jeong, Seokjin Oh, Kihwan Kim, Seong-Jun Ha, and Jeong-Yong Park(KAERI)

5A 원자력 열수력 실험 A
(Thermal Hydraulic Experiments A) – ORAL

| 좌장 어동진(Dong jin Euh), 김형대(Hyung Dae Kim)

Experimental Investigation of ONB Incipience Measurement and Bubble Behavior under the Natural Circulation in the Narrow Rectangular Channel
Ji-Hwan Park, Faraz Aziz, and Daeseong Jo(KNU)

Experimental Study of Conjugate Heat Transfer Associated with Single Bubble Boiling
Iljin Kim and Hyungdae Kim(KHU)

Observation of Departure from Nucleate Boiling under Flow Using Optical Visualization and IR Thermometry
Byong Guk Jeon and Sang-Ki Moon(KAERI), Moon Hee Choi(POSTECH)

Identifying Heat Transfer Regimes by Acoustic Analysis in Pool and Flow Boiling
Do Yeong Lim, Ji Yong Kim, Dong Hun Lee, Kyung Mo Kim, and In Cheol Bang(UNIST)

Profile of Void Fraction with Fine Radial Spacing in the Close Vicinity of the Heated Wall in Subcooled Flow Boiling
Il Woong Park, In Yeop Kang, Hyun Jin Yong, and Yeon-Gun Lee(JNU)

Experimental Investigation on the Droplet Parameters in the Core under the LBLOCA Reflood Phase of PWR
Taeho Kim, Jinhoon Kang, Jae Jun Jeong, and Byongjo Yun(PNU), Kyoungdoo Kim(KAERI)

Simulation of Flow Boiling Patterns using a Hydrogen Evolving System
Seong-Il Beak, Je-Young Moon, and Bum-Jin Chung(KHU)

Investigation of Analogy between Boiling and Hydrogen Evolving System in Nucleate Bubble Regime
Hae-Kyun Park and Bum-Jin Chung(KHU)

Natural Convection Flow Separation on the Inclined Plate Depending on Inclination and Pr
Seung-Ah Yang, Myeong-Seon Chae, and Bum-Jin Chung(KHU)

5B 원자력 열수력 실험 B (Thermal Hydraulic Experiments B) – ORAL

| 좌장 배병언(Byoung-Uhn Bae), 김응수(Eung Soo Kim)

Visualization of a Single-Phase Natural Circulation Loop Using Mass Transfer Experiment
Joon-soo Park, Hae-Kyun Park, and Bum-Jin Chung(KHU)

Visualization of Direct Contact Condensation of Steam-Air Mixtures at Chugging Mode
Jonwhwi Choi and Hyungdae Kim(KHU), Jinhwa Yang, Taehwan Ahn, and Hyunsik Park(KAERI)

A Preliminary Study on the Condensation in the Presence of Air with Various Subcooling Degrees
Dong-Wook Jerng, Hyun Jae Kim, Ji-Hwan Hwang, and Jung Jin Bang(CAU)

A Preliminary Study on Steam Condensation with Air-Helium Mixture on a Vertical Tube for Low Subcooling Condition
Ji-Hwan Hwang, Hyun-Jae Kim, Jung-Jin Bang, and Dong-Wook Jerng(CAU), Ho Seon Ahn(INU)

Experimental Study of Droplet Characteristics in Dropwise Condensation Along the Axial Length of a Long Vertical Tube
Taeseok Kim and Sung Joong Kim(HYU)

Micro-Integral Effect Test of URI-LO with Infrared Imaging Technique of Drone
Kyung Mo Kim and In Cheol Bang(UNIST)

Anode Influence on Natural Convection Heat Transfer of the Packed Bed in the Electroplating System
Hyun-Ha Ahn, Je-Young Moon, and Bum-Jin Chung(KHU)

Reconstruction of Unmeasured Data by Compressive Sensing for Correlation Development
Ga-Hee Sim and Moon-Ghu Park(Sejong Univ.)

5C 열수력해석 I (Thermal Hydraulics Analysis I) – ORAL

| 좌장 이승욱(Seung Wook Lee), 이동혁(Dong-Hyuk Lee)

Application of MARS-FRAPTRAN Integrated Code to LBLOCA Analysis and Understanding of Fuel Rod Behavior
YOUNG SEOK BANG, JOOSUK LEE, and IL SUK LEE(KINS)

Analysis for the Heat Pipes Failure in a Hybrid Micro Modular Reactor
Seongmin Lee, Young Jae Choi, and Yong Hoon Jeong(KAIST)

Open Calculation Result of DSP-05 Activity utilizing ATLAS Test Facility with Multiple Steam Generator Tube Rupture under PAFS Operation Scenario

Yusun Park, Jongrok Kim, Byoung Uhn Bae, Jae Bong Lee, Seok Cho, Nam Hyun Choi, and Kyoung Ho Kang(KAERI)

Integration of Fluid Dynamics and Solid Mechanics Models for FSI Simulation Using GPU-based SPH Framework

Tae Hoon Lee, So Hyun Park, and Eung Soo Kim(SNU)

Sensitivity Analysis of the Heat Loss on the Pressurizer for ATLAS Integral Effect Test Facility

KYUNGHO NAM and Tae-woo Kim(KHNP CRI)

Steam Line Break Accident Analysis with Multi-scale/Multi-physics Methodology

Jae Ryong Lee, Ik Kyu Park, and Han Young Yoon(KAERI)

Implementation of Fuel Relocation and Oxide Thermal Barrier Model into MARS-KS/FRAPTRAN Coupled Code System

Hyochan Kim, Sunguk Lee, Jangsoo Oh, and Yongsik Yang(KAERI), Joosuk Lee(KINS)

A Simulation of Main Steam Line Break Accidents Using Coupled MASTER/CUPID/MARS Code

Ik-Kyu Park, Jae Ryong Lee, and Han Young Yoon(KAERI)

5D 열수력해석 II (Thermal Hydraulics Analysis II) – ORAL

| 좌장 최재돈(Jae Don Choi), 이재룡(Jae Ryong Lee)

Assessment of Subcooled Boiling Model under High Pressure Condition using CUPID

Yun-je Cho, SeongJun Lee, and Han-young Yoon(KAERI)

An Empirical Correlation for the Onset of Flow Instability in Narrow Vertical Rectangular Channels

Tae-Wook Ha(KAERI), Myeong-Kwan Seo, Byong-Jo Yun, and Jae Jun Jeong(PNU)

A Study on Hydrogen Explosion Possibility in the Containment Filtered Venting System During Severe Accident

Gi Hyeon Choi, Ji-Hwan Hwang, and Dong-Wook Jerng(CAU), TaeWoon Kim(NESS,KAERI)

Modelling of the Droplet Entrainment Phenomena for the Simulation of Reflood Phase During a Large-break Loss-of-coolant Accident in a Pressurized Water Reactor

Jee Min Yoo, Byong Jo Yun, and Jae Jun Jeong(PNU)

Reactor Core Simulation During a SLB Accident by ASTRA and CUPID Coupling

Dae-gwang Hong, Jin-woo Park, Jae-don Choi, and Joo-il Yoon(KEPCO NF), Ik-kyu Park and Jae-ryong Lee(KAERI)

The Transient Thermal Analysis at a Nuclear Containment Wall during LOCA for an Analysis of a PCM Behavior
Yonadan Choi and Yong Hoon Jeong(KAIST)

Modeling of the Wake-induced Lift Force Acting on an Unbounded Bubble at Arbitrary Reynolds Number
Wooram Lee and Jae-Young Lee(HGU)

Analysis of Nodalization Uncertainty for Higher-order Numerical Scheme under RBHT Experimental Conditions
Wonwoong Lee and Jeong Ik Lee(KAIST)

5E 원자력 열수력 현안 I (Thermal Hydraulic Issues I) – ORAL

| 좌장 홍순준(Soon-Joon Hong), 류승훈(Seung Hun Yoo)

Subcooled CHF Model for Narrow Rectangular Channel under Downward Flow Condition
Huiyung Kim, Jinhoon Kang, Jae Jun Jeong, and Byongjo Yun(PNU)

Investigation of CHF for IVR-ERVC Condition using a Hydrogen Evolving System
Jeong-Won Han, Dong-Young Lee, Hae-Kyun Park, and Bum-Jin Chung(KHU)

Multiple Linear Regression Analysis for Evaluating the Impact of Uncertainty Variables on LBLOCA Consequence
Dong Gu Kang, Joo Suk Lee, Il Suk Lee, and Deog Yeon Oh(KINS)

Test Result for Evaluation of the Cooling Capability of Steam Generators During a Loss of Residual Heat Removal System at Mid-loop Operation in ATLAS Facility
Jae Bong Lee, Jongrok Kim, Byoung-Uhn Bae, Yusun Park, Seok Cho, Nam Hyun Choi, Kyoung-Ho Min, Yong Cheol Shin, Hyo-sung Seol, Yeon-Sik Kim, and Kyoung-Ho Kang(KAERI)

Improvement of the SPACE Subcooled Boiling Model for the High Pressure and Low Flow Conditions
Taebeom Lee, Jaehoon Jeong, and Sangik Lee(KEPCO NF), Yonghoon Jeong(KAIST)

Experimental Reactor Core Flow Mixing Characteristics according to Cold Leg Flow Balance Using a Pipe Core Simulator
D.J. EUH, K.H. KIM, W.M. PARK, W.S. KIM, H.S. CHOI, H.S. SEOL, Y.J. YOUN, and T.S. KWON(KAERI)

Development of Program for Generation of Thermodynamic Properties Tables in CUPID Code
Yazan Alatrash(UST), Han Young Yoon and Yun Je Cho(KAERI)

Thermal-Hydraulic Uncertainty Factors for Prediction of Fuel Rod Burst in LBLOCA Safety Analysis
Joosuk Lee, Deog-Yeon Oh, and Young-Seok Bang(KINS)

5F 원자력 열수력 현안 II (Thermal Hydraulic Issues II) – ORAL

| 좌장 김태완(Taewan Kim), 허병길(Byung Gil Huh)

Preliminary Tests for Fuel Clad Behavior under LOCA Using Multi Physics Coupled Experimental Facility ICARUS
Jongrok Kim, Jae Bong Lee, Hyeokjun Byeon, Kihwan Kim, Hae Seob Choi, Jong-Kuk Park, Young-Jung Youn, and Sang-Ki Moon(KAERI)

Comparative Performance Analysis of SMART Passive Residual Heat Removal System Using MARS-KS and MELCOR
Byoung-Seung Kim, Keon-Yeop Kim, Young-suk Bang, and Gun-Hyo Jung(FNC Tech.), Jin-Hee Park(KAERI)

Experimental Investigation for Loss of Flow Accident on Research Reactor
Youngchang Ko, Huiyung Kim, and Byongjo Yun(PNU), Jong-Pil Park and DongHyun Kim(KAERI)

Fast-transient Flow Boiling Heat Transfer due to Abrupt Power Excursion on a Tube Flow within 10-50 bar Pressure Ranges
Yong-Seok Choi, Jong-Kuk Park, and Sang-Ki Moon(KAERI)

Experiments of Aerosol Removal with Various Submergence in Steam Generator
Byeonghee Lee, Sung Il Kim, and Kwang Soon Ha(KAERI)

Design of a Hydrocyclone for Particle Separation in the Seawater Cooling System
Heung June Chung and Woo Shik Kim(KAERI)

Study About the Impact of Pr Effect on the Validity of Boussinesq Approximation in Molten Salt Natural Circulation
Dong Hun Lee and In Cheol Bang(UNIST)

5G 원자력 열수력 실험 (Thermal Hydraulic Experiments) – POSTER

| 좌장 김태완(Taewan Kim), 전성수(S.S. Jeon)

Void Fraction Measurement Using Low Energy X-rays

Gi wook Kwon and HyungDae Kim(KHU)

Experimental Study on Heat Transfer Characteristics of Dynamic Leidenfrost Droplets

Hyunwoong Lee and Hyungdae Kim(KHU)

Conceptual Validation Tests on Forced Convection Condensation Using SISTA

Taehwan Ahn, Jinhwa Yang, Youyeon Choi, Chanjong Seo, Bae Hwang, and Hyun-Sik Park(KAERI)

Conceptual Validation Tests on Condensation during Natural Circulation Using SISTA

Jin-Hwa Yang, Tae Hwan Ahn, Youyeon Choi, YunGon Bang, Hwang Bae, and Hyun-Sik Park(KAERI)

Forced Core Flow Mixing Tests

Tae-Soon Kwon, Dong-Jin Euh, and Ki-Hwan Kim(KAERI)

Reactor Flow and Structure Vibration Models

Tae-Soon Kwon(KAERI)

Long-term Stability of OTS Coating Inducing Dropwise Condensation Heat Transfer

Juhyeong Lee, HoJin Hwang, GoenHyeong Lee, Taeseok Kim, and Sung Joong Kim(HYU)

Particle Image Velocimetry Analysis using Deep Learning for Thermal-hydraulics Experiment

Jun Sung Choi and Eung Soo Kim(SNU)

The Effect of Sliding large Bubbles on Nucleate Boiling of Subcooled Water Flowing in a Slightly Inclined Channel Subjected to Upper Heated Surface

Uiju Jeong(KHNP CRI), Sung Joong Kim(HYU)

Evaluation on Prediction Capability of GOTHIC Code for KAERI Single Tube Condensation Experiment

Jae-Ho Bae, Yeon-Jun Choo, Hee-Dong Kim, and Soon-Joon Hong(FNC Tech.)

Design and Manufacture of Fouling Simulation Test Apparatus for a Printed Circuit Steam Generator

Jeoh Han, Sang-Ji Kim, and Do Haeng Hur(KAERI), Young-Kook Lee(Yonsei Univ.)

Experimental Study of Dropwise Condensation on Various S.A.M Condenser Tubes

Ha-Yeol Kim, Myeong-Chan Park, Su-Bin Jeong, and Kwon-Yeong Lee(HGU), Young-Hun Shin and Woonbong Hwang (POSTECH)

Development of Measurement System for Thermo-mechanical Behavior of Cladding in LOCA-Simulated Experiments

Hyeokjun Byeon, Jae Bong Lee, Jongrok Kim, Kihwan Kim, Hae Seop Choi, Jong-Kuk Park, Young-Jung Youn, and Sang-Ki Moon(KAERI)

5H 열수력 해석 (TH Analysis) – POSTER

| 좌장 박익규(Ik Kyu Park), 최치웅(Chiwoong Choi)

CFD Simulation of Cavitation Flow Inside a Cavitating Venturi Using ANSYS CFX

Gong Hee Lee and June Ho Bae(KINS)

OPR1000 ATWS Analysis Using the SPACE Code

Bum-Soo Youn and KYUNGHO NAM(KHNP CRI)

Simulation of OECD/ATLAS A4.1 Test with TRACE Code

Kyung Won Lee, Min Ki Cho, and Andong Shin(KINS)

Sensitivity Analysis of Heat Loss through Secondary System for MSGTR with PAFS Operation

Tae-woo Kim and KYUNGHO NAM(KHNP CRI)

The Prediction Method of Entrainment Rate by Breakup of Large Drop During Reflood in a TH Code

Seung Hyun Yoon, Kyung Doo Kim, Jaeseok Heo, and Kwiseok Ha(KAERI)

Application of Heat Transfer Enhancement Factors at Downstream of Quench Front Considering Collapsed Water Level

Seung Hyun Yoon, Jaeseok Heo, Kyung Doo Kim, Chiwoong Choi, and Kwiseok Ha(KAERI)

Discussion on Superheated Steam Condensation and Re-vaporization

Soon-Joon HONG and Je-Hee Lee(FNC Tech.)

Preliminary Study of Reconstructing MARS-KS Constitutive Relations with ANN

Jaehyung Sim, ChoHwan Oh, and Jeong Ik Lee(KAIST)

Analysis of ATLAS LORHR Pressurizer Opening Test During Mid-Loop Operation Using SPACE Code

Tae-woo Kim(KHNP CRI)

Study on the Primary Side Heat Loss Effect for ATLAS Integral Effect Test Facility

KYUNGHO NAM and Tae-woo Kim(KHNP CRI)

Multi-physics Simulation of BEAVRS Benchmark Using CUPID/nTER

Youyeon Choi, Jin Young Cho, and Hwang Bae(KAERI), Hyoung Kyu Cho(SNU)

Sensitivity Analysis at the Time of Macst Action in Severe Accidents Caused by Station Black Out(SBO)

Hyungho Lee, Wonjun Choi, and Sung Joong Kim(HYU)

Validation of Wall Film Condensation Model in the Presence of the Non-Condensable Gas for CAP

Jehee Lee, Yeon-Jun Choo, Seong-Su Jeon, and Soon-Joon Hong(FNC Tech.)

Development of Constitutive Equations in Reactor Safety Analysis Code with Data-based Modeling Using Artificial Neural Network

ChoHwan Oh, Doh Heyon Kim, Jaehyung Sim, Sung Gil Shin, and Jeong Ik Lee(KAIST)

Simulation of SBO in CANDU-6 Using MARS-KS Code

Seon Oh YU, Min Ki CHO, Kyung Lok BAEK, and Sung Chu SONG(KINS)

TASS/SMR-S Analysis on a Single-Phase Natural Circulation Phenomenon in SMART-ITL during 3-Different Operating Conditions

Hwang Bae, Ji Han Chun, Young-Jong Chung, and Hyun-Sik Park(KAERI)

Verification of DICE Physical Module Integrity by SBLOCA Calculation

Hyunjoon Jeong and Taewan Kim(INU), Jonghyun Kim(CSU), Gyunyoung Heo(KHU)

Analysis of IFA650.9 Using MARS-KS Coupled with SCDAP

Yunseok Lee and Taewan Kim(INU)

Preliminary Simulation on Jet Breakup Experiment Using High Accuracy Kernel Correction Scheme for Smoothed Particle Hydrodynamics

Hae Yoon Choi and Eung Soo Kim(SNU)

Validation of Integrated Code of MARS-KS and FRAPTRAN Using Halden IFA-650.5 LOCA Test

Chang-Yong Jin, Joosuk Lee, and Deog Yeon Oh(KINS)

Effect of Core Asymmetry for the Analysis of DNBR Using Multi-scale Codes

Il Suk Lee, Dong Hyeog Yoon, Young Seok Bang, and Kwang Won Seul(KINS), Yong Chan Kim(Korea Univ.)

CANDU 6 Small Break LOCA with High Power Channel of 5% or More Pressure Tube Creep

Dongwook Kho and Sungmin Kim(KHNP CRI)

Heat Loss Determination of ATLAS Facility and System Code Application

Seong-Su Jeon, Bicer Erol, Jae-Ho Bae, and Soon-Joon Hong(FNC Tech.), Byoung-Uhn Bae and Kyoung-Ho Kang(KAERI)

Computational Study of wall Condensation Phenomena in the Presence of Non-condensable Gases Containing a Light Gas by Using CUPID-MARS Coupled Code

Chang Won Lee, Jin-Seong Yoo, and Hyoung Kyu Cho(SNU)

Implementation of the Crud Layer Model into the SPACE Code

Jin Yoo(NESS), Seung Wook Lee(KAERI), Young Jae Park and Hyungdae Kim(KHU), Byoung Jae Kim(CNU)

CAP Code Validation of Two-Phase Flow Pressure Drop

Kum Ho Han, SeongSu Jeon, and SoonJoon Hong(FNC Tech.)

Enhancing CHF Prediction of AECL Look-Up Table Along with Machine Learning

TaeHyun Chun and YongGyun Yu(KAERI)

Preliminary Design of PCM-based PCCS by Using CAP Code

Sung Gil Shin and Jeong Ik Lee(KAIST)

Impacts of Thermal-hydraulic Uncertainty on Fuel Particles Mobility Analysis during LBLOCA

Min ki Cho, KyungWon Lee, Dogyun Lim, and Joosuk Lee(KINS), Jeong Ik Lee(KAIST)

Feasibility Assessment of Operator's Action Using HEMS during SBLOCA in APR1400

Sanghee Kang and Horim Moon(KHNP)

51 원자력 열수력 실험 및 현안 (Thermal Hydraulic Issue) – POSTER

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Comparison of the LES Subgrid-scale Models in Simulating the Turbulent Channel Flow
Seokwon Whang, Ralph Carlo Evidente, and Hyun Sun Park(POSTECH)

Experimental Facility for Supercritical CO₂ Leakage to High Pressure Water
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The Nuclear-Solar Hybrid System Concept Development
In Woo Son and Jeong Ik Lee(KAIST)

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Simulation Test of a 2 inch Cold Leg SBLOCA with Passive Emergency Core Cooling System in ATLAS
Seok Cho, Byoung-Uhn Bae, Yusun Park, Jae Bong Lee, Jongrok Kim, Nam Hyun Choi, and Kyoung-Ho Kang(KAERI)

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Dae Kyung Choi and Choengryul Choi(Elsoltec), Tae-Soon Kwon and Dong-Jin Euh(KAERI)

Numerical Analysis on Internal flow of Westinghouse Moisture Separator for the Development of Similarity Method
Kihwan Kim, Woo-shik Kim, Jae-bong Lee, Dong-Jin Euh, and Hae-Seob Choi(KAERI), Cheongryul Choi(Elsoltec)

Relationship Between Lifetime Average Neutron Flux and Pressure Tube Diametral Creep for Wolsong NPP
Donghwan Park and Hoon Choi(KHNP CRI)

Experimental Study on Liquid Film Behavior with Asymmetric Air Flow under Emergency Core Coolant Bypass Condition
Chi-Jin Choi and Hyoung Kyu Cho(SNU)

A Study of Compressed CO₂ Energy Storage System for Nuclear Power Plants Application
Soyoung Lee, Yongju Jeong, and Jeong Ik Lee(KAIST)

Optimization of Liquid Interfacial Heat Transfer Coefficient of MARS-KS Code to Match SUBO Data
Doh Hyeon Kim and Jeong Ik Lee(KAIST)

The Effect of Subcooling on Critical Heat Flux Along a Slightly Inclined Downward-facing Heater Plate
Uiju Jeong(KHNP CRI), Sung Joong Kim(HYU)

Scaling Effects of Turbulence-induced Forcing Function in the Core Support Barrel due to Impingement Flow from a Cold-leg Piping
Sang Gyu Lim, Jae Min Lee, Sun Hee Choi, Kyu Hyung Kim, Do Young Ko, and Do Hwan Lee(KHNP), Byong Jo Yun(PNU)

6A 외부사건 PSA의 최근 현안들 (Emerging issue in the external event PSA) – ORAL

| 좌장 최종수(Jongsoo Choi), 김민규(Minkyu Kim)

Accident Sequence Quantification in Multi-unit Seismic PSA using MCSs
Yongjin Kim, Seunghyun Jang, and Moosung Jae(HYU)

Using Plant-Level Fragility Curves for Seismic Safety Assessment
Jongsoo Choi and Dongwon Lee(KINS)

The Case Study of the Multiple Seismic Failure Modes for SPRA
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The Confirmation for the Assumption of Full Seismic Correlation in Multi-unit Seismic Probabilistic Safety Assessment
Geon Gyu Choi and Woo Sik Jung(Sejong Univ.)

Uncertainty Analysis for Multi-unit Seismic CCDP Model Using BBN
Yunyeong Heo and Seung Jun Lee(UNIST)

6B 리스크 평가의 새로운 방법론 1 (Advanced methods in Risk Analysis 1) – ORAL

| 좌장 박진균(Jinkyun Park), 박성규(Seong Kyu Park)

Comparison of Theoretical Approach and Monte Carlo Approach for Uncertainty Analysis in Probabilistic Safety Assessment
Gyun Seob Song and Man Cheol Kim(CAU)

An Approach to Human Reliability Analysis of SAMG Actions Based on a Time Uncertainty Analysis
Young A Suh and Jaewhan Kim(KAERI)

Application of Various Protective Actions for Multi-unit Accidents
Sunghyun Park, Mina Cho, Seokwoo Sohn, and Moosung Jae(HYU)

A New Process for Dependency Analysis of Human Reliability Analysis
Seong Kyu Park and Woo Sik Jung(Sejong Univ.)

Can We Directly Apply Existing Human Reliability Data to Estimate the Human Error Probability of a Digital MCR?
Jinkyun Park and Yochan Kim(KAERI)

Simulation Methods of Site Operating States Distribution for Multi-unit PSA
Heejong Yoo, Kyungho Jin, and Gyunyoung Heo(KHU)

6C **리스크 평가의 새로운 방법론 2** **(Advanced methods in Risk Analysis 2) – ORAL**

| 좌장 김길유(Kilyoo Kim), 김재갑(Jae Gab Kim)

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Sejin Baek and Gyunyoung Heo(KHU), Taewan Kim(INU), Jonghyun Kim(CSU)

Confirmation for Proper Quantitative Screening of Domestic Fire PSA
Chang-Ju Lee, Seungwoo Lee, and Dohyoung Kim(KINS)

A Review of Emergency Planning Zone (EPZ) for Establishment of SMART EPZ
Kilyoo Kim, Sangbaek Kim, Taewoon Kim, and Seokjung Han(KAERI)

Review of Integrated Risk-Informed Decision Making Methodology using Risk Insights—Current Status and Perspectives
Ho-Gon Lim and Jin-Hee Park(KAERI)

Development of Level 2 PSA Software AIMS-L2
Sang Hoon HAN and Jaehyun CHO(KAERI)

Development of A Consequence Analysis Computer Code, HYRISK
Seokwoo Sohn, Jihyun Kim, and Moosung Jae(HYU)

6D 노내중대사고현상 (Severe Accident Phenomena: In-Vessel) – ORAL

| 좌장 황석원(Seokwon Whang), 임국희(Kukhee Lim)

Sensitivity Analyses of Water Density in the Degraded Reactor Core on the Potential for Recriticality during Early Phase of Severe Accident

Yoonhee Lee, Yong Jin Cho, and Kukhee Lim(KINS)

Evaluation of Gap Size Formed by Interaction between Melt and Water in RPV Lower Head

Moon Won Song and Hee Cheon NO(KAIST), Dongyeol Yeo(UM)

Modeling of In-Vessel Gap Cooling and Validation Against LAVA, ALPHA, and LMP200 Experiments

Moon Won Song and Hee Cheon NO(KAIST), Dongyeol Yeo(UM)

Improvement of Contact Pressure Evaluation Method in Elastic Region Between ICI Tube and Penetration Hole of Reactor Lower Head under Severe Accidents

Kukhee Lim, Yong Jin Cho, Yoonhee Lee, and Jin-Seong Park(KINS)

Validation of LHF Experiment Using MELCOR and ANSYS Mechanical

Yeon Soo Kim, Kukhee Lim, Yong Jin Cho(KINS)

Coupling of Particle-based Simulation and MARS Code for Simulation of IVR-ERVC: Preliminary Study

So-Hyun Park, Hoon Chae, EungSoo Kim, ChangWon Lee, HyoungKyu Cho, YeonGun Lee, and MinSeop Song(SNU)

6E 노외중대사고 현상 I (Severe Accident Phenomena: Ex-Vessel I) – ORAL

| 좌장 안상모(Sangmo An), 박진호 (Jin Ho Park)

CFD Simulation of Liquid-Liquid Jet Breakup: Boundary Layer Stripping

Min-Soo Kim, Hyoung-Tak Kim, and Kwang-Hyun Bang(KMOU)

Ex-vessel Debris Bed Formation Experiments in the Pre-Flooded Reactor Cavity Using 3 mm Stainless Steel Particles

Sang Mo An, Keun Sang Choi, Ki Han Park, and Chang Wan Kang(KAERI)

Numerical Simulation of 3-Phase Debris Bed Hydrodynamic Behavior Using Multi-phase SPH-DEM Coupling

Young Beom Jo, So-Hyun Park, Juryong Park, and Eung Soo Kim(SNU)

Statistical Treatment of MELCOR Uncertainty Study of CCI2 Using DAKOTA/SNAP

Yong Jin CHO, Yoonhee LEE, Kukhee LIM, and Seong-kug Ha(KINS)

Development of Computer Code for Analysis of Molten Corium and Concrete Interaction

Sang Ho Kim, Sang Min Kim, Jae Hyun Ham, Hwan-Yeol Kim, Rae-Joon Park, and Jaehoon Jung(KAERI)

MELCOR Analysis on Effectiveness of Continuous Reactor Cavity Flooding during Molten Corium-Concrete Interaction in OPR1000

Chang Hyun Song, Hoichul Jung, and Sung Joong Kim(HYU)

6F 노외중대사고 현상 II (Severe Accident Phenomena: Ex-Vessel II) – ORAL

| 좌장 김종태(Jong Tae Kim), 김성중(Sung Joong Kim)

Experimental Study of Hydrogen Behaviors Affected by Pressure Control Systems in a Reactor Containment

Jongtae Kim, Hyoung Tae Kim, Seongho Hong, Ki-Han Park, Jin-Hyuk Kim, and Jeong-Yoon Oh(KAERI)

Blind-Benchmark Calculation of an Erosion of Helium Stratified Layer Test: H2P1_10_2 on the OECD/NEA HYMERES-2 Project

Hyoung Tae Kim and Jongtae Kim(KAERI), Se-Myong Chang(KNU)

MELCOR Analysis of a Spray Experiment in the SPARC Test Facility

Hyoung Tae Kim and Jongtae Kim(KAERI)

CFD Analysis for a Westinghouse Natural Circulation Experiment during Severe Accidents

Hyung Seok Kang, Sung Il Kim, Eun Hyun Ryu, and Kwang Soon Ha(KAERI)

Preliminary Aerosol Concentration Effect Modeling in Pool Scrubbing Code

Yo Han Kim and Yong Hoon Jeong(KAIST)

Monte-Carlo Strategy of Spray Droplet for LOCA Dose Estimation by Decontamination Factor

Seung-Chan LEE(KHNP CRI)

The Effects of LOCA Dose Estimation by Spray Droplet Surface Area

Seung-Chan LEE(KHNP CRI)

6G 중대사고안전해석 (Severe Accident Safety Analysis) – ORAL

| 좌장 김한철(Han-Chul Kim), 하광순(Kwang Soon Ha)

Verification Study on New Safety Goal for Avoiding Long-term Off-site Contamination

Kyuntae KIM, Yongjin LEE, Dongwon LEE, Seungwoo LEE, and Dohyoung KIM(KINS)

Severe Accident Analysis in Mid Loop Operation at OPR1000 Using MELCOR

Yerim Park, Hoyoung Shin, Youngho Jin, Dong Ha Kim, and Moosung Jae(HYU)

Assessment of Source Term for ISLOCA Using MELCOR

Seungwoo Kim, Youngho Jin, Dong Ha Kim, and Moosung Jae(HYU)

Design of the Experimental Facility for the RVACS Natural Circulation of the PGSFR, SINCRO-3D

Min Ho Lee and In Cheol Bang(UNIST), Dong Wook Jerng(CAU)

CFD Modeling for Validation of the 1/7th Scale Steam Generator Inlet Plenum Mixing Experiment

Kukhee Lim and Yong Jin Cho(KINS), Cheongryul Choi and Dae Kyung Choi(Elsoltec)

6H 원자력안전현안 및 화재방호 (Safety Issues and Fire Protection) – ORAL

| 좌장 이상규(Sang Kyu Lee), 이승우(Seungwoo Lee)

Use of 650°C Peak Cladding Temperature as a Design Goal for Design Basis Accident 1

Kyung-min Yoon and Jae-il Lee(KEPCO NF), Do-hwan Lee(KHNP)

Maintenance Planning of Complex Power Grids based on Critical Cascading Failure Scenarios

Eujeong Choi(KAERI), Junho Song(SNU)

The Study for Dose Effect Analysis of Control Rod Ejection Accident

Seung-Chan LEE, Tae-Woo Kim, Min-Jeong Kim, and Duk-Joo Yoon(KHNP CRI)

Experimental Study to Detect Bubble in Bubbly flow Using Ultrasonic Pulse-echo Method

Geoseong Na, Ji-Hwan Park, Hongrae Jo, and Daeseong Jo(KNU)

Improvements on Fire Human Reliability Analysis Procedure for Korean Nuclear Power Plants Through Case Study

Sun Yeong Choi, Dae Il Kang, and Yong Hun Jung(KAERI)

Risk Assessment of Main Control Room Fires for Domestic NPP Based on NUREG-2178

Dae Il Kang and Yong Hun Jung(KAERI)

Review and Application of the Recent Modeling Approach for Liquid Fuel Fire Scenarios in Nuclear Power Plants

Yong Hun JUNG and Dae Il KANG(KAERI)

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| 좌장 강경민(Kyung Min Kang), 최선영(Sun Yeong Choi)

Development of Source Term Generation Algorithm without Grouping Process

Yongsuk Bang, Gunhyo Jung, and Suwon Lee(FNC Tech.), Jaehyun Cho(KAERI)

A Study on the Frequency of Initiating Event of SGTR during Outage Periods

Kyung Min KANG, Dong Won Lee, and Seung Woo Lee(KINS)

A Process for Estimation of Initiating Event Frequency Using Korean Industry Data based on NRC Researches

Sun Yeong Choi, Dong-San Kim, and Jin Hee Park(KAERI)

Level 3 MUPSA at 9 Unit Nuclear Site using MACCS2 and MURCC Codes

Jae-Ryang Kim, Gee Man Lee, and Woo Sik Jung(Sejong Univ.), Seok-Jung Han(KAERI)

A Review of Impact on Protective actions on Off-site Consequence

Kyemin Oh and Jeong Seon Park(KHNP CRI)

Model and Estimation of ATWS Frequency for the APR-1400 Reactor

Seung-Cheol Jang(KAERI)

A Behavioral Scientific Proposal to Revise the Multi-Unit Probabilistic Risk Assessment for Improving Risk Communication and Public Acceptance on Nuclear

Yong Hee Lee(KAERI)

Analysis of Success Criteria for POS5 in OPR-1000 using MARS-KS

Dohun Kwon, Eojin Jeon, and Gyunyoung Heo(KHU)

Fuzzy Aggregation Approach for Estimating Severe Accident Phenomenon Probability

Young A Suh, Kiwon Song, and Jaehyun Cho(KAERI)

Suggestion of a Nuclear Safety Culture Monitoring Process

Younggab Kim and Jeongjin Park(KHNP CRI)

Resilience Concept for Evaluating Radiological Emergency Plan

Gibeom Kim, Kyusik Oh, and Gyunyoung Heo(KHU)

PSA Methodology for Classification of Practical Elimination for APR1400 in Terms of Source Term Category of Level 2 PSA

Jaegab Kim, Ho Seok, Yangsoo Kim, Sangho Kang, and Inchul Ryu(KEPCO E&C), Horim Moon(KHNP CRI)

6J 중대사고 (Severe Accident) – POSTER

| 좌장 김희동 (Heedong Kim), 류용호(Yong Ho Ryu)

Preliminary Sensitivity Analyses on the Criticality of Fuel Assembly during Late Phase of a Severe Accident
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Simulation of a Conjugate Heat Transfer Using a preCICE Coupling Library
dehee Kim and jongtae Kim(KAERI)

Experimental Study on the Heat Transfer Characteristics of CNF Nanofluids during Quenching
Hundong Choi, Hyelyung Lee, Minjung Choi, Yeeun Cho, and Kwon-yeong Lee(HGU)

CFD-aided Estimation of the Natural Circulation Flow Rate in External Reactor Vessel Cooling via 1-D Simulation Using MARS-KS
Min Seop Song and Eung Soo Kim(SNU), Il Woong Park and Yeon-Gun Lee(JNU)

Preliminary CFD Analysis for a Natural Circulation Flow between a Reactor and Steam Generator in an OPR100
Hyung Seok Kang, Sung Il Kim, Eun Hyun Ryu, and Kwang Soon Ha(KAERI)

MELCOR Simulation of in-vessel Mitigation Strategies by Multiple Actions Using Monte Carlo Method
Wonjun Choi and Sung Joong Kim(HYU)

Simulation of Jet Breakup in Lower Plenum with Internal Structure Using Smoothed Particle Hydrodynamics
Hoon Chae, So-Hyun Park, and Eung Soo Kim(SNU)

Procedure Development of IVR-ERVC Analysis and Its Results in SMART100
Rae-Joon Park, Donggun Son, Hyung Seok Kang, and Sang Mo An(KAERI)

Simulation of Wet Hydrogen Combustion Using Flamelet Model in OpenFOAM
Sangmin Kim and Jongtae Kim(KAERI)

Spray Modeling for 3-D Analysis of Hydrogen and Spray Droplet Flow in the APR1400 Containment
Jongtae Kim, Hyoung Tae Kim, Jun Young Kang, Hyung-Seok Kang, Jaehoon Jung, and Dehee Kim(KAERI), Gun-Hong Kim(openCAE)

Implementation of Wall Steam Condensation in a Containment Analysis Code
Jongtae Kim, Hyoung Tae Kim, and Dehee Kim(KAERI), Gun-Hong Kim(openCAE)

Shock Energy Dissipation during Shock-bubble Interaction in Bubbly Liquid
Chanwoo Kim and Hyun Sun Park(POSTECH)

CTMT Depressurization by Reducing Steam and Carbon Dioxide Partial Pressures with a CaO/Ca(OH)₂-based Reaction System

DONG HOON KAM and YONG HOON JEONG(KAIST)

Current Status of Development of Heat Transfer Model to Predict Temperature Distribution in Particulate Debris Bed

Jaehoon Jung, Donggun Son, and Sang Mo An(KAERI)

Experiments on Sedimentation of Particles in a Water Pool with Bottom Surface Inclination under Quiescent Pool Conditions

Mayank Modak and Hyun Sun Park (POSTECH)

Development of ISLOCA Aerosol Pool Scrubbing Test Facility

WooYoung JUNG, DooYong Lee, ByungChul Lee, and JinYong Lee, BumKyu Kim, and MinBum Heo(FNC Tech.), Byeonghee Lee and KwangSoon Ha(KAERI)

Preliminary Test of Jet Pool Scrubbing for Design of Experimental Vessel

Sung Il Kim, Kihan Park, and Chang Wan Kang(KAERI)

Sensitivity Analysis for CCI-2 Test Using CORQUENCH

Jaehyun Ham, Sang Ho Kim, Sangmin Kim, and Jaehoon Jung(KAERI)

Methodology Development for 3D Analysis of a Core Catcher Cooling Channel

Jaehoon Jung and Jongtae Kim(KAERI), Gun-Hong Kim(openCAE)

Release and Distribution of Fission Products for SMART100 under the SBO Accident with ERVC Using MELCOR

Jaehyun Ham, Jong Hwa Park, Sang Ho Kim, Rae Joon Park(KAERI)

Release and Distribution of Fission Products for SMART-100 under the SLOCA with ERVC Using MELCOR1.8.6

Jong Hwa Park, Sang Ho Kim, Sung IL Kim, and Rae Joon Park(KAERI)

Measurement of Aerosol Decontamination Factor Using Filters in AEOLUS Facilities

Jeongyun Oh, Sung Il Kim, and Byeonghee Lee(KAERI)

Parametric Studies for SG Water Levels and Locations of Tube Ruptures Using MAAP-ISAAC 4.03 Code during MSGTR Severe Accident

Chul-Kyu Lim, Dong-Sik Jin, Sang-Koo Han, and Sook-Kwan Kim(ACT Co.,)

Comparison of MAAP5-CANDU and MAAP4-ISAAC MCCI Analysis for CANDU

Mi Ro SEO(KHNP CRI), Chang Hwan PARK(FNC Tech.)

Improved Fuel Performance Evaluation of SLB with Common Mode Failure for OPR1000 Reload Core

Kyungsup Lim, Sangjung Park, Jinyoung Lee, Heehoon Lee, and Iltak Woo(KEPCO NF)

7A 방사선 방호
(Radiation Protection) – ORAL

| 좌장 이철우(Cheol Woo Lee), 신창호(Chang-Ho Shin)

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Projected Radiation Dose to the Public in Japan and the Republic of Korea resulting from Marine and Atmospheric Release of Fukushima Treated Water
Dong-Kwon Keum(KAERI)

Reconstruction of Compton Edges in Plastic Gamma Spectra using Deep Autoencoder
Byoungil Jeon, Yuhan Lee, Yonggun Yu, and Myungkook Moon(KAERI), Gyuseong Cho(KAIST)

Automatic Discriminator of Abnormal Chromosomes Using Deep Learning Algorithms
Seung Soo Jang, Sung Gyun Shin, Min Jae Lee, Sang Soo Han, Chan Ho Choi, Sungkyum Kim, Woo Sung Cho and Song Hyun Kim(POSTECH), Yeong-Rok Kang, Wol-Soon Jo, Soo-Kyung Jeong, and Su-Jung Oh(DIRAMS)

A New Generation of ICRP Reference Pediatric Computational Phantoms
Chansoo Choi, Bangho Shin, Haegin Han, Sungho Moon, Sangseok Ha, and Chan Hyeong Kim(HYU), Yeon Soo Yeom(NCI)

Calculation of Photon Enamel dose Coefficients for Retrospective EPR Dosimetry
Bangho Shin, Chansoo Choi, Haegin Han, Sangseok Ha, Sungho Moon, and Chan Hyeong Kim(HYU), Yeon Soo Yeom(NCI)

Preliminary Analysis of Cross Section Measurement of Proton-induced Reactions on Natural Niobium
Mahdi Bakhtiar, Leila Mokhtari Oranj, Nam-Suk Jung, Arim Lee, and Hee-Seock Lee(POSTECH)

Analysis of the Off-site Consequence According to the Occurrence Time of HANARO DBA
Sohyeon Lee, Goanyup Lee, Bongseok Kim, Hyun Ki Kim, Donghan Yoo, and Kanghyeon Lee(KAERI)

7B 방사선 방호 (Radiation Protection) – POSTER

| 좌장 정효준(Hyojoon Jeong), 최승진(Seung Jin Choi)

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Juhyuk Lee, Heon Yong Jeong, Hyun Nam Kim and Sung Oh Cho(KAIST)

Simulations of Radiation Dose Rate of Spacer in CANDU for TEM Specimen Preparations

Heemoon Kim and Young Gwan Jin(KAERI)

Electrochemical Synthesis of Titanium Dioxide Nanoparticles for UV Radiation Protection

Jaewoo Lee, Sangyoon Lee and Sung Oh Cho(KAIST)

Radio-isotope Identification Using Dictionary Learning Approach for Plastic Gamma Spectra

Junhyeok Kim, Giyoon Kim, Jinhwan Kim, Eunbie Ko and Gyuseong Cho(KAIST), Daehee Lee(ADD)

Estimation of Radiation Dose to Korean Population Due to Computed Tomography Examinations

Hyueng Woo Nam, Min Young Lee, Woo Jin Kim, Ye Ji Yun, Hyun Jun Na and Kwang Pyo Kim(KHU)

Off-site Dose Assessment from Routine Effluents of Shin-Kori Unit 3

Boldsaikhan Purevsuren and Juyoul Kim(KINGS)

Correlation of the Analysis Results of the Lead Concentration with Results of Nuclide Analysis of the Air around the Facility

Jeong-Min Park, Yi-Sub Min, Sung-Kyun Park and Sun-Ju Oh(KAERI)

Assessment of Radiation Dose Resulting from Gaseous Effluent based on Representative Person Concept

Hyun Su Seo, Ki Hoon Kim, Se Jong Lee, Byung Min Lee and Kwang Pyo Kim(KHU)

Radiation Hazard Prediction of Egyptian Research Reactor for the Development of Emergency Decision Support System

Ahmed Abd El-Hameed and JUYOUL KIM(KINGS)

방사선 이용 및 기기 (Radiation Utilization and Instrumentation)

8A 방사선 기기 및 이용 (Radiation Instrumentation and Application) – ORAL

| 좌장 이원호(Wonho Lee), 박병건(Byung-Gun Park)

Feasibility Study of X-ray Fluorescence Imaging System: Surface Modification Gold Nanoparticles and 2D Convolutional Neural Network

Taeyun Kim, Wooseung Lee, Jimin Lee, and Sung-Joon Ye(SNU)

Energy Response of the Beta-spectrometer by Geant4 Monte Carlo Simulation

Hyeon Min Lee, Bo-Young Han, Gwang-Min Sun, Jaegi Lee, and Yongmin Kim(DCU)

A New Readout Method to Minimize Blurring by Compton Scattering Effects in the Coded-aperture Imaging System

Manhee Jeong(JNU), Geehyun Kim(Sejong Univ.)

Hand-held Dual-particle Imager Development Based on Stilbene Array Coupled with SiPM Array

Jihwan Boo, Seoryeong Park, and Manhee Jeong(JNU)

Experimental Performance Evaluation of Large-area Hybrid Gamma Imaging System(LAHGIS)

Hyun Su Lee, Jae Hyeon Kim, Junyoung Lee, and Chan Hyeong Kim(HYU)

In-reactor Testing Design for Long-lived SPND at HANARO

Seongwoo Yang, Seungjae Park, and Mansoon Cho(KAERI), Doyeon Kim and Yuseon Choi(KHNP CRI)

Neutron Transmission Measurement of Neutron Shielding Material for Storage and Shipping Cask of Spent Nuclear fuel

Jongyul Kim, TaeJoo Kim, Baek-Seok Seong, and Wan Chuck Woo(KAERI), Jae Hoon Jang and Tae-Ho Lee(KIMS), Hirotaka Sato(Hokkaido Univ.)

Development of Analysis System for Micro-elements by using Neutron Absorption Reaction

Sang-hwa Lee, Byung-gun Park, Dohyun Kim, Dong-jin Seo, and Wan seok Oh(KAERI),

Young ku Jin, Hyun woo Seo, and Dong min Kim(HIU)

Study on Electrical Characteristics of IGBT by Gamma-ray Irradiation Followed by Thermal Annealing

Hani Baek, Gwang-Min Sun, Byung Gun Park, and Hyeon Min Lee(KAERI), Chansun Shin(MJU)

8B 방사성동위원소 활용기반시설의 역할 및 활용기술 (The Role of RI Utilization Facilities and Technologies) – ORAL

| 좌장 최강혁(Kanghyuk Choi), 이승곤(Seung Kon Lee), 이교철(Kyo Chul Lee)

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The Roles and Research Directions of Radioisotope Research Center (Tentative Name)
K. H. Choi(KAERI)

Role of Korea Radioisotope Center for Pharmaceuticals & Collaboration Plan with the New Research Center at Kijang
Jae Hoon Shim(KIRAMS)

Precision Medicine and Theranostic Radioisotopes
Seoung-Oh Yang(DIRAMS)

Analytical Peak Separation Method for Two Isotopes ^{67}Cu and ^{67}Ga
Jun Kue Park, Myung-Hwan Jung, Won-Je Cho, and Jae S. Lee(KAERI, KOMAC)

Demonstration of GaN Betavoltaics based on p-n Junction
Dong-Seok Kim, Young Jun Yoon, Yong Seok Hwang, Jaekwon Suk, Sunmog Yeo, and Jae Sang Lee(KAERI, KOMAC)

Progress of Kijang Research Reactor Construction for the Mo-99 Production
Seung-Kon Lee, Suseung Lee, Kyungseok Woo, Soon-Bog Hong, and UI Jae Park(KAERI)

Radioimmunoassay of Biomolecule Based on the Lab-On-a-Chip Platform
Jin-Hee Kim(KNU), So-Young Lee and Seung-Kon Lee(KAERI)

Simultaneous Direct Determination of Stable Isotope Yb/Lu Separated by Liquid Chromatography
Aran Kim and Kanghyuk Choi(KAERI)

8C 방사선 이용 및 기기 (Radiation Utilization and Instrumentation) – POSTER

| 좌장 강상묵(Sang Mook Kang), 정희준(Hee Jun Chung)

Estimation of Radioactive Contamination Depth through NaI(Tl) Gamma Spectroscopy Analysis Using ANN
Eunbie Ko, Jinhwan Kim, Jisung Hwang, and Gyuseong Cho(KAIST)

Bias Gamma-ray Detector for Irradiation Test
Chul-Yong Lee, Kee-Nam Choo, and Sung-Woo Yang(KAERI)

Determination of the Deposition of Cosmogenic ^7Be in Daejeon, Korea during Spring Season
K.B. Dasari and G.M. Sun(KAERI), H. Cho and Y.H. Yim(KRISS)

Compensation Factor of Sensitivity on Gamma Camera for Incident Gamma Rays from a Boundary of the Field of View
Jihwan Boo, Seoryeong Park, and Manhee Jeong(JNU)

Verification Experiment of Cultural Properties Analysis Using External Beam PIXE on the 1.7 MV Tandem Accelerator of KOMAC
Kye-Ryung KIM, Yong-Sub CHO, Hyeok-Jung KWON, Han-Sung KIM, and Nam-Woo Kang(KAERI, KOMAC)

Mechanochemical Synthesis of ZnWO_4 Nanoparticle Scintillator via Anodized Nanoparticle
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Initial Beam Acceleration Test of 1-MV Electrostatic Accelerator at KOMAC
Yong-Sub Cho, Won-Hyeok Jung, Hyeok-Jung Kwon, Han-Sung Kim, and Kye-Ryung Kim(KAERI, KOMAC)

Assessment of Dead layer in HPGe Detector for in-situ Gamma Spectroscopy
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Determination of Detection Efficiency for Voluminous Gamma-ray Sources at Collimation Geometry
M. Y. Kang(Sejong Univ.), G. M. Sun(KAERI), H. D. Choi(SNU)

A Review on the Research Status and Development Trend on Low Energy Beta-Emitter Measurement
Hara Kang and Jae Hak Cheong(KHU), Sang Bum Hong and Changhyun Roh(KAERI)

Pulsed Beam Current Measurement System using Current Integrator and Counter at Proton Irradiation Facility
Gwang-il Jung, Sang-pil Yoon, and Han-Sung Kim(KAERI, KOMAC)

Positive Nickel Ion Beam Extraction with Bernas Ion Source at KOMAC
Yong Seok Hwang, Cho Rong Kim, Jae Kown Suk, Chan Young Lee, and Jun Mok Ha(KAERI, KOMAC)

Development of Miniature Flat Target X-ray Tube for Semi-conductor TSV Non-destructive Test Imaging
Jun Heo, Heon Yong Jeong, Hyun Nam Kim, Ju Hyuk Lee, and Sung Oh Cho(KAIST)

Feasibility Study on the U Factor Analysis of UO₂ Pellets using Gamma Spectroscopy
Haneol Lee(KINAC)

Blind Test for Verification of the Performance of MMXRF
Seunghoon Park and Hana Seo(KINAC)

Basic Design for Wobbling System of KOMAC RI Beamline Using Halbach Dipole Magnets
Yong-Sub Cho, Yeong Su Ha, Hyeok-Jung Kwon, Sang-Pil Yoon, and Kye-Ryung Kim(KAERI)

Investigation of Polyethylene Terephthalate in Different Thickness with Coincidence Doppler Broadening Spectroscopy
Junyoung Lee, Jaegi Lee, Gwang-Min Sun, and Young Rang Uhm(KAERI), Sung-Joon Ye(SNU)

A Study on the Development of 82Sr/82Rb Generator System
Yeong Su Ha, Sang-Pil Yoon, Won-Hyeok Jung, Han-Sung Kim, and Kye-Ryung Kim(KAERI, KOMAC)

Source Correction for Positron Annihilation Lifetime Spectroscopy: A Monte Carlo Study
Wonjin Kim, Chaewon Lee, Jaegi Lee, Young Rang Uhm, and Gwang-Min Sun(KAERI)

Measurement of Free Volume in Polyethylene Terephthalate Using Positron Annihilation Lifetime Spectroscopy
Chaewon Lee, Wonjin Kim, Jaegi Lee, Young Rang Uhm, and Gwang-Min Sun(KAERI)

Space Radiation Protections Using Water-Shielding for Journey to Mars Inspiring Future Nuclear Engineering: Celebrating Atomic Powered 'Mars 2020' Mission of NASA
Tae Ho Woo(CUK)

Simulation of Neutron Induced Charged Particle Spectrum for Neutron Depth Profiling
Byung-Gun Park, Sang-hwa Lee, Gwang-Min Sun, and Myong-Seop Kim(KAERI)

Integrated Simulation of Fast Neutron Generation and Detection System in KOMAC
Soobin Lim, Jaehyung Park, Kyung-Jae Chung, and Y.S. Hwang(SNU), Donghwan Kim, Jeong-Jeung Dang, and Pilsoo Lee(KAERI, KOMAC)

Effect of Reinforcement Size on Stress Deviation Characterized by Neutron Diffraction and FEM Simulation
Taegyu Lee and Ho Jin Ryu(KAIST), Hobyung Chae, and Soo Yeol Lee(CNU)

Preliminary Evaluation on the Possibility of Neutron Irradiation Testing Requested by Foreign Users at HANARO
Kee-Nam Choo, Sung-Woo Yang, Man-Soon Cho, Seng-Jae Park, and Yoon-Taek Shin(KAERI)

Development of Tiled Gamma-ray Detector Circuit Using Photodetector Array
Kyeoung Cho, Young-Jun Jung, Jungyeol Yeom, Hyemi Cha, and Kisung Lee(KU), Hakjae Lee(ARALE)

Dose Estimation for X-ray Irradiation of Insulated Gate Bipolar Transistor
Ki-Man Lee, Hani Baek, and Gwang-Min Sun(KAERI)

Comparison of OH Generation by Radiation Exposure and APPJ Treatments in Cells
Wanook Ji(KAERI)

Synthesis of Fluorinated Graphene Quantum Dots by CF₄ Plasma

Na Eun Lee, Sang Yoon Lee, Hyung San Lim, Heon Yong Jeong, and Sung Oh Cho(KAIST)

Surface Hardness Characteristics Change of Dual ion Implanted Electroless Ni-P/Al7075

Chan Young Lee, Dong-Seok Kim, Myung-Hwan Jung, Yong Seok Hwang, Chorong Kim, Jae Kwon Suk, Sunmog Yeo, and Jae Sang Lee(KAERI, KOMAC)

A Study on Synthesis Mechanism of Graphene Quantum Dots by Ion-beam Assisted Chemical Vapor Deposition

Jun Mok Ha, Seoung Ho Lee, Young Seok Hwang, Chan Young Lee, Jae Kwon Suk, Myung Hwan Jung, Sun Mog Yeo, and Jae Sang Lee(KAERI, KOMAC)

Continuous Synthesis of Uniform Core-Shell Particles for Novel Biodegradable Brachytherapy Source

In Won Choi and Seung-Kon Lee(KAERI)

양자공학 및 핵융합기술 (Quantum Engineering and Nuclear Fusion)

9A 핵융합 및 가속기 (Nuclear Fusion and Accelerator) – ORAL

| 좌장 김종원(Jongwon Kim), 강흥식(Heung-Sik Kang)

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The current status of studies about ion sources for research equipment in KBSI
Byoung-Seob Lee (KBSI), Jungbae Bahng, Jisu Kim, Eunhoon Lim, and Eun-San Kim (Korea Univ.)

9B 핵융합 및 가속기 (Nuclear Fusion and Accelerator) – POSTER

| 좌장 이동원(Dong Won Lee), 김종원(Jongwon Kim)

Implementation of Automatic Water Makeup System for The Resonance Control Cooling System at The KOMAC
Kyung-Hyun Kim, Hyeok-Jung Kwon, Han-Sung Kim, Hae-Seong Jeong, Seong-Gu Kim, Dae-il Kim, and Mun-Ho Jo(KAERI, KOMAC)

Implementation of EBIS Control System for a Pulsed Neutron Source at KOMAC
Sung-yun Cho, Jae-Ha Kim, Young-Gi Song, Seunghyun Lee, and Han-Sung Kim(KAERI, KOMAC)

Activation of NV Color Center using Hydrogen Ion Irradiation
Jaekwon Suk, Yongseok Hwang, Sunmog Yeo, and Jaesang Lee(KAERI, KOMAC)

Cathode Erosion Rate Measurement of MEVVA Ion Source
Seung Ho Lee, Han Sung Kim, and Hyeok-Jung Kwon (KAERI, KOMAC), Yong-Sub Cho(KAERI)

Design and Installation of A Prototype Multi-pinhole Faraday Cup
DongHwan Kim, Jeong-Jeung Dang, Hyeok-Jung Kwon, Seung-Hyun Lee, and Han-Sung Kim(KAERI, KOMAC),
Kyoung-Jae Chung and Yong-Seok Hwang(SNU)

RF Reference Distribution System for the RISP Linac
Kyungtae Seol, Doyoon Lee, Hyojae Jang, Ohryong Choi, and Kitaek Son(IFS)

Current Status and Future Plans of the Korea Atomic Energy Research Institute Heavy Ion Irradiation Facility

Sung-Ryul Huh, Dae-Sik Chang, Yong-Sub Cho, Hyung Gon Jin, Jeong-Tae Jin Byung-Hoon Oh, Suk-Kwon Kim, and Dong Won Lee(KAERI), Seok-Kwan Lee(Joong-Ang Vacuum Co., Ltd.)

Development of a Global Model for BF₃ Discharge

Van Duy Cung, Kyoung-Jae Chung, and Y.S. Hwang(SNU)

Damaged Layer Detection by Nanoindenter for Hydrogen ion Irradiated Polymers

Sunmog Yeo, Jaekwon Suk, Chorong Kim, and Dong Seok Kim(KAERI, KOMAC)

Current Status and Commissioning Tests of the HeSS Experimental Facility

Eo Hwak Lee, Suk-Kwon Kim, Hyung Gon Jin, Chang Wook Shin, and Dong Won Lee(KAERI), Seungyon Cho(NFRI)

Test Facility for Vapor Adsorption using Molecular Sieve in Helium Coolant Purification System

Chang Wook Shin, Eo Hwak Lee, Suk-Kwan Kim, Hyung Gon Jin, and Dong Won Lee(KAERI), Mu-Young Ahn, Soon Chang Park, and Seok-Kwon Son(NFRI)

Principal Safety Requirements of Radioactive Waste Management for Future Fusion Power Plants in Korea

Doo-Hee Chang and Sun-Ho Kim(KAERI)

10A 내진 및 구조 해석 I (Seismic & Structural Analysis I) – ORAL

| 좌장 문일환(II-Hwan Moon), 구경회(Gyeong-Hoi Koo)

Design Verification of Lead-Laminated Rubber Bearing for Seismic Isolation of Nuclear Facility Components
Gyeong-Hoi Koo and Jin-Young Jung(KAERI), Jin-Hyeong Lee and Tae-Myung Shin(KNUT)

Dynamic Characteristics of LRB for Seismic Isolation of Nuclear Facility Components
Jinhyeong Lee(KEPIC), Taemyung Shin and Juseung Lyu(KNUT)

Post-processing Technique for Probabilistic Seismic Responses of Nuclear Power Plant under Performance-based Seismic Design
Choon-Gyo Seo, II-Hwan Moon, Young-Suk Lee, and Gak-Su Jang(KEPCO E&C)

Damping Ratio Evaluation of Steel Plate Concrete Shear Wall
Ilhwan Moon and Young Suk Lee(KEPCO E&C), Chul-Hun Chung and Junghee Lee(Dankook Univ.)

Seismic Fragility Curve Calculation of Equipment in NPP Using Sampling Approach
Heekun Ju and Hyung-Jo Jung(KAIST)

Study on the Effect of Interconnected Cabinet Assembly on the In-Cabinet Response
Salman Kashif and Sung-Gook Cho(Innose Tech.)

10B 내진 및 구조 해석 II (Seismic & Structural Analysis II) – ORAL

| 좌장 이진호(Jin-Ho Lee), 김진원(Jin-Weon Kim)

Probabilistic Soil-structure Interaction Analysis of Nuclear Power Plant Structures
Yuree Choi and Hyung-Jo Jung(KAIST)

Failure Behaviors of Pipes with Circumferential Surface Crack under Large Amplitude Cyclic Loads
Jin Weon Kim and Jin Ney Hong(CSU), Heong Do Kweon(KHNP CRI), Yun Jae Kim(KU)

Effect of Stiffness Eccentricity on Seismic Response of Simple Irregular Structures
Juseung Ryu, Jisu Kim and Taemyung Shin(KNUT)

Random Vibration Theory Methodology for Probabilistic Site Response Analysis
Hieu Van Nguyen and Jin Ho Lee(PKNU)

Development of Tuned Mass Damper Device for a Piping System under Seismic Load
Jinsung Kwak, Hwanho LEE, Jinho Oh, and Gyeong-Hoi Koo(KAERI), Shinyoung Kwag(HNU)

Structural Integrity Evaluation of High-Temperature Wedge Flowmeter According to an Elevated Temperature Design Rule
Jae-Hun Cho, Hyeong-Yeon Lee, and Jewhan Lee(KAERI)

10C 건설 및 운영 (Plant Construction & Operation) – ORAL

| 좌장 박경흠(Kyung-Heum Park), 정우용(Woo-Yong Jung)

Comparative Life Cycle Sustainability Assessment of Enriched Uranium Supply Scenarios
Whan-Sam Chung and Ik Jeong(KAERI), Nguyen Huu Tiep(INST, VINATOM)

Impact of the Thermal Energy Storage System on APR1400 Turbine
Anna Maria Kluba, Youngsuk Bang, and Byoung Seung Kim(FNC Tech.), Robert Murray Field(KINGS)

Preliminary Computational Fluid Dynamics Analyses of 2-loop RVI Baffle Structure
Hyun-Gon Kim, Jae-min Jyung, and Yoon-Suk Chang(KHU)

Study on the Fuel Cell as an Standby AC Power Source of Nuclear Power Plants
Choong-koo Chang and Rasheed Ogunola(KINGS)

Effects of pH Control Agents and Values on Magnetite Deposition on Alloy 690 Steam Generator Tubes in Secondary System
Soon-Hyeok Jeon, Ji-Min Lee, Yong-Beom Lee, Jeoh Han, and Do Haeng Hur(KAERI)

10D 원전건설 및 운영기술 (Nuclear Power Plant Construction and Operation Technology) – POSTER

| 좌장 김민규(Min-Kyu Kim), 김태순(Tae-Soon Kim)

Preliminary Calculation of Aerosol Removal Rate Inside Experimental Facility Pipes
Myeong Seon Lee(KAERI), Hyojin Lee(HNU), Kwang Soon Ha and Sung Il Kim(KAERI)

Technical Background of Draft Notice ‘Investigation, Analysis, Evaluation Standards on Geology and Earthquake at Reactor and Related Facility Sites’

Hoseon Choi, Chang Bock Im, Taek-Mo Shim, Junmo Yang, Seon Jeong Park, Hyeon-Dong Woo, and Bona Park(KINS)

Prediction of Remaining Life of Transistor Embedded in Control Board of Nuclear Power Plant through Accelerated Life Test

Young-Suk Jung, Young-Il Oh, Eun-Kyung Lee, and Jae-Soo Noh(ACT Co.), Hye-Won Yoo and Chan-Sei Yoo(KETI), Hong-Ki Jang, Seul-Chan Jin, and Jong-Ho Kim(Woojin Ntec)

Measurement of Alpha Radiation dose in PRIDE Facility

seonho Noh, youngwoo Kwon, youngkuk Jang, hee-seok Kang, and il je Cho(KAERI)

Applying Digital Engineering Guide to Domestic Digital Nuclear Power Plant

Dongil Lee(KHNP CRI), Kwang-Hyun Lee and Wonwoong Ko(KHNP)

Steam Cycle Off-design Analysis of An Energy Storage System Integrated Nuclear Power Plant

Ju Yeon Lee and Jeong Ik Lee(KAIST)

Application of Advanced UT in Nuclear Power Plant Inspection

Tae-Geun LEE, Euisoon DOH, Hun-Hee PARK, and Hee-Sup BAE(Sae-An Eng.)

Techno-Economic Analysis of Hydrogen Production Using Nuclear Power Plant Electricity Generation in Korea

Andhika Yudha Prawira, Phil Seo Kim, and Man-Sung Yim(KAIST)

Criticality Evaluation of Storage Rack with or without Neutron Absorber

Kiyoung Kim, Donghee Lee, Yongdeog Kim, and Sunghwan Chung(KHNP CRI)

CFD Analysis of Cavitation Occurring in an Orifice in the Auxiliary Feedwater System

Jaemin Lee, Sang Gyu Lim, and Suk Ho Lee(KHNP)

Investigation of Natural Frequency Variation of Partially Filled Rectangular Container by External Excitation

Byun-Young Chung, Ki-Un Youm, and Jung-Han Lee(KAERI)

Fatigue Life Comparison of Stainless Steels with Strain Holdings in PWR Environments

Taesoon Kim(KHNP CRI), Hyeonbae Lee(KAIST)

Investigation of Rack Motion for Seismic Safety Evaluation of a Spent Fuel Pool

Won Man Park, Sungman Son, Dae Kyung Choi, and Choengryul Choi(Elsoltec), Kang Hee Lee and Heung Seok Kang(KAERI)

Ductile Tearing Simulation of Piping System with Circumferential Through-wall Cracked under Seismic Loading

Hyun-Suk Nam(KHNP CRI)

Preliminary Study on Causes of Schedule Delay and Cost Overrun of Power Projects in Nigeria and Discussing Some Issues in NPP Projects

Usman Ismaila, Ashrafa Seif, and Wooyong Jung(KINGS)

Changes in Provisions about Anchoring Components and Structural Supports in Concrete by Applying the Revised R.G. 1.199

Ki-Yeon Kwon, Sang-Yun Kim, and Hohyun Cho(KINS)

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

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

| 좌장 이영준(Youngjoon Lee), 전은주(Eunju Jun)

Improving Nuclear Safety E&T Workshops Using the Importance-Performance Analysis Method
Jihwan Lim(KINS)

Experiment Training Program for Nuclear Safety Research at KAERI
Byungchul Shin, Woongki Kim, Yongchang Joo, and Manjin Ha(KAERI)

A Survey on Artificial Intelligence in Nuclear Science
Sudong Lee, Seunghyoung Ryu, Kyungtae Lim, and Yonggyun Yu(KAERI)

Use of Text Mining Technique in Doing Trend Analysis of the Internet Articles for Nuclear Energy
So Yun Jeong, Jae Wook Kim, Young Seo Kim, Han Young Joo, and Joo Hyun Moon(Dankook Univ.)

International Trend for the Insider Threat Mitigation at Nuclear Facilities and its Domestic Countermeasures
Jong Uk Lee, Chan Kim, In Seon Back, Seung Sik Yu, and Heejun Chung(KINAC)

Updating the Determinants of Nuclear Proliferation Dataset: 1939-2012
Chul Min Kim, Hyeon Seok Park, and Man-Sung Yim(KAIST)

The Scope of Export that Requires Permission under the Foreign Trade Act
Sangcheol Hyung(KINAC)

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

| 좌장 류재수(Jaesoo Ryu), 김수은(Soo Eun Kim)

A Study on Nuclear Safety-Security Interface Management
Min BAEK and Sunghun OH(KINAC)

Analysis on Legitimacy of Non-explosive Military Applications of Nuclear Material
Sung Yoon Park(KINAC)

A Study on the Relationship Between a Conclusion of a Bilateral NCA and Governmental Assurances
Jae Soo Ryu, Youngwoo Lee, and Keonhee Lee(KAERI)

Examination of Hydrogen Production Efficiency Using Surplus Energy from the Renewable Energy 3020 Implementation Plan in South Korea
Phil Seo Kim, So-Bin Cho, and Man-Sung Yim(KAIST)

Global Trend of Micro Nuclear Reactors
Tae Joon LEE(KAERI)

Nuclear Power Plant Competitiveness from Exporter and Importer Perspective
Joanna Furtak, Myungjae Shin, and Wooyong Jung(KINGS)

An Analytical Framework of Socio-economic Modelling of Micro Nuclear Reactor Projects
Tae Joon LEE(KAERI)

11C 원자력정책, 인력 및 협력 3 (Nuclear Policy, Human Resources and Cooperation 3) – POSTER

| 좌장 유호식(Hosik Yoo), 이현철(Hyun Chul Lee)

Development of Nuclear Security Training Program based on Motion Tracking VR Technology
Dong-hyun KIM and Sang-soon KIM(KINAC)

A Questionnaire-based Analysis of International Training Courses on Safeguards in the Korean Nuclear Security Center of Excellence (COE)
Byung-Woo Shin(KINAC)

The Calculation & Assessment in Quality Elements Amount of Nuclear Research Projects
Kwan-Hyun KIM(KAERI)

Preliminary Study on Improvement Plan in Nuclear Engineering National Technical Qualification Exam Based on NCS (National Competency Standard)
Minsu Ju, Ki Nam Kwon, Junggho Song, and Jinyoung Chung(BRNC Inc.), Yonggun Kim and Taejin Park(KARA), Teahoon Jeon(Orbitech), Chang Je Park(Sejong Univ.), Seongcheon Kam(KINS)

Development of Nuclear Forensics Training Course for ASEAN Members States
Hyeseung Kim and Byung-woo Shin(KINAC)

A Critical Review and Policy Suggestion on Generation IV International Forum (GIF)
Sunyoung Chang(KINAC)

A Study on the Benefits of Implementing Domestic Safeguards Activities by Supporting the IAEA Training Course
Donghyuk LIM and ByungWoo SHIN(KINAC)

Suggestion of Applying Physical Protection Regulations on Nuclear Materials out of Category
Jounghoon Lee(KINAC)

Emerging Technologies: Challenges to WMD Export Controls
Jongsook Kim and Byung-Woo Shin(KINAC)

Analysis of the Small Quantity Nuclear Material Transaction Network in the ROK
Seungmin Lee and Jea-suk Yang(KAIST), Jounghoon Lee(KINAC)

Consideration of Vertical Field-of-View of the Camera for Video Alarm Assessment
Hyun-Chul KIM and Byung-Woo SHIN(KINAC)

Development of Collection and Analysis System for Implementation of IAEA Additional Protocols
Sujeong Kim and Beomseok Shin(KINAC)

Analysis of IAEA's Findings on the DPRK Nuclear Activities (2016~2019)
Minsoo Kim(KINAC)

An Analysis for International Norms for Physical Protection of Nuclear Material by Sea: INFCIRC/225/
Rev.5 and ISPS Code
Chan Kim(KINAC)

Challenges and Steps Forward for Peaceful Uses of Nuclear Energy under the NPT
Byung-Wook Lee, Keonhee Lee, and Youngwoo Lee(KAERI)

Accuracy Assessment of Change Detection Algorithm for Satellite Imagery in Support of Interpretation of
Nuclear Activities
Jae-Jun Han and Nam Kyung Kim(KINAC)

Preliminary Study on Effects of ESS Integrated Nuclear Power Plants with Increased Penetration of
Renewable Energy
Jai Oan Cho and Jeong Ik Lee(KAIST)

2020 Tokyo Summer Olympic Games' Radiological Guard by Multiple-Barrier Extension Using Atmospheric
Dispersions: Introduction of 'Natural-Barrier' Concept
Tae Ho Woo(CUK)

Analysis on the Establishment of Domestic and Foreign Emergency Planning Zones
Chang-Keun Yang and Jong-Kwon Lim(KHNP CRI)

Examination for Applying Technical Specifications Precisely
Younghwan Son(KHNP)

Economic Comparison of Nuclear and Gas Power in Saudi Arabia
Manki LEE and SeungSu KIM(KAERI)

An Exploratory Study on a Target Capital Cost and Cost Reduction Methodologies of Innovative SMR in Korea
Kee-Hwan Moon and Seung-Su Kim(KAERI)

12A 계측제어 A
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| 좌장 손세도(Sedo Sohn), 김윤구(Yun Goo Kim)

Basic Concepts of APR1400 MMIS Digital Twin using Virtualization Technology
Sungjin Lee and Won Woong Ko(KHNP CRI)

A Study on the Improvement of Restart Logic for the Essential Service Water Pump in Hanbit NPP Units #3 and #4
Gyu-yong Jang and Man Gyun Na (CSU)

Concept Development of Reactor Trip Avoidance Methodology using Improved Core Protection System
Thiago Nascimento, Mostafa Mousa, and Jaecheon Jung(KINGS)

Evaluation Method for Common Cause Failure Hazards on Non-safety Related System
Yun Goo Kim and Jong Beom Lee(KHNP CRI)

Identification of Initial Events in Nuclear Power Plants Using Machine Learning Methods
Young Do Koo, Hye Seon Jo, Kwae Hwan Yoo, and Man Gyun Na(CSU)

Data Generation and Evaluation Using Deep Learning
Ye Ji An, Ji Hun Park, So Hun Yun, and Man Gyun Na(CSU)

Identification of In-vessel Phenomena During Severe Accident using Wall Temperature Outside of Reactor Vessel
Jung Taek Kim and Seop Hur(KAERI), Anil Kumar Khambampati and Kyung Youn Kim(JNU), Sung Joong Kim(HYU)

Comparisons of Linear Regression Methods: Machine Learning Method and Linear Algebra Method
Yong Suk Suh, Seung Ki Shin, Dane Baang, Sang Mun Seo, and Jong Bok Lee(KAERI)

Design of a 2DOFs Pantograph Leg Mechanism for Rapid RespoNSE Robot Platform in Nuclear Power Plant Facilities
Sun Young Noh, Kyungmin Jeong, Doyeon Kim, MyoungHo Kim, Sung Uk Lee, Young-Soo Choi, Yong-Chil Seo, and Ji Sup Yoon(KAERI)

12B 인간공학 A (Human Factors A) – ORAL

| 좌장 김종현(Jonghyun Kim), 장인석(Inseok Jang)

Performance Estimation Using Deep Learning Based Facial Expression Analysis
Cho Woo Jo, Young Ho Chae, and Poong Hyun Seong(KAIST)

Formal Language and Flowlogic Diagram for Computerized Procedural System
Yeonsub Jung(KHNP CRI)

Design of General Operation Support System
Nokyu Seong, Yungoo Kim, and Jongbeom Lee(KHNP CRI)

Analysis of Diagnosis Errors for the APR1400 Main Control Rooms
Awwal .M. Arigi and Jonghyun Kim(CSU)

**Comparison of Human Performance between Operators and Students Using Rancor Microworld Simulator:
A Preliminary Result**
Bumjun Park, Sungheon Lee, Seungheon Kim, and Jonghyun Kim(CSU), Jeongtaeg Kim(KHNP), Jooyoung Park and RonaldL Boring(INL)

**A Categorization of Violations based on the Key-Factors and Plausible Countermeasures in Human Error
Investigations of Nuclear Events**
Yong Hee Lee(KAERI)

An Intelligent Operator Support System for Initial Emergency RespoNSEs in NPPs
Jung Sung Kang and Seung Jun Lee(UNIST)

Algorithm of Abnormal Event Diagnosis with the Identification of Unknown Events and Output Confirmation
Hyojin Kim and Jonghyun Kim(CSU)

Signal Validation Algorithm using Deep Learning Methods
Subong Lee and Jonghyun Kim(CSU)

Application of the Scoping Fire Human Reliability Analysis on the Nuclear Power Plant
Gayoung Park and Jonghyun Kim(CSU)

12C 사이버보안 (Cyber Security) – ORAL

| 좌장 이정운(Jung Woon Lee), 권국희(Kookheui Kwon)

Conceptual Design of Operator Support System for Limiting Condition for Operation
Seungbeom Yu, Nokyu Seong, Yungoo Kim, and Jongbeom Lee(KHNP CRI)

Strategy for the Accident Diagnosis in Sensor Error States
Jeonghun Choi and Seung Jun Lee(UNIST)

Developing a Training Program for IAEA ITC on Computer Security in a Nuclear Facility
Jeong-ho Lee(KINAC)

Cyber Security Evaluation for Nuclear I&C Systems Corresponding to V-model
Jiye Jeong and Gyunyoung Heo(KHU)

Preparation for Cyber Security Incident Response Training in Nuclear Power Plants
Jae-Gu Song, Jung-Woon Lee, Cheol-Kwon Lee, Dong-Young Lee, and Jong-Gyun Choi(KAERI)

Improving the Effectiveness of Media Control Auditing in Nuclear Facilities by Log Analysis
Seongyeol Oh, Min Woo Lee, Yongju Lee, Hyosoo Kang, and Taigil Song(KAERI)

Consequence-Based Cyber Security Graded Approach for CDA Identification
Ickhyun Shin and Sangcheol Hyung(KINAC)

A Study of Cyber-attack Impact to Condenser Test-bed by Using STPA-SafeSec
Jinsoo SHIN, JungWoon LEE, YoungJun LEE, JunYoung SON, and JongGyun CHOI(KAERI)

Development of a Quantitative Method for Evaluating Cybersecurity Incident Response Capability based on the NPP Cyber Kill-Chain Model
Chanyoung Lee and Poong Hyun Seong(KAIST)

Development of Initiating Cyber Threat Scenarios and the Probabilities Based on Operating Experience Analysis
Sang Min Han and Poong Hyun Seong(KAIST)

12D 계측제어 B (Nuclear I&C B) – POSTER

| 좌장 이승준(Seung Jun Lee), 이정훈(Jeong Hun Lee)

Development to Diagnose Model of Abnormal Status in Nuclear Power Plant Operation using Machine Learning Algorithms

Ho Sun Ryu and Yun Goo Kim(KHNP CRI), KwangNam Yu(Dacon Co.)

Development of Containment Building Modeling for Nuclear Power Plant Simulator

Sung Jin Ahn(KHNP CRI)

Severe Accident Module Functional Test in SKN#3,4 Simulator

Kyung-min KIM, Jongbeom LEE, and Joo-youl LEE(KHNP CRI)

Analysis of Factory Acceptance Test Results of Severe Accidents for Wolsong 3 Simulator

J. B. Lee(KHNP CRI)

Design of Alarm and Indication System for SMART

Inseok Jang(KAERI)

Comparison between ISA RP67.04 and Plant Protection System Setpoint Methodology for Advanced Power Reactor 1400

Chang Jae Lee, Woong Seock Choi, Jong Soo Kwon, and Jae Hee Yun(KEPCO E&C)

Radiation Hardened Op-amp Design for 1 Mrad TID

Euntae Cho and Inyong Kwon(KAERI), Gyuseong Cho(KAIST)

Cyber Security Function through Physical Access of Safety Level Controller Digital Output Module

Hyo-Jin Kim, Kwan-woo Yoo, Jae-won Yun, and Dong-Yeon Lee(SOOSAN ENS)

Real-time Network Intrusion Detection System with Supporting Cyber Security Regulations for Nuclear Power Plants

Jae-Hee Roh, Seok-Ki Lee, and Choul-Woong Son(NSE), Cheonghwan Hwang and Jaehyun Park(Inha Univ.)

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| 좌장 박진균(Jinkyun Park), 김성태(Seong Tae Kim)

Approach to Performing Treatment of Important Human Actions for SMART
Inseok Jang(KAERI)

CPS-centered HFE V&V Results for Shin-Kori Units 5&6
Yongsoo Kim and Chanho Sung(KHNP CRI)

A Study on the Operating Scenario Development for BNPP CPS HFE Validation
Chanho Sung, Jooyoul Lee, and Yongsoo Kim(KHNP CRI)

The Diagnosis and Monitoring System of Common Cause Failure(CCF) for Digital I&C(DI&C) Systems
Songhae Ye and Chanho Sung(KHNP CRI)

Program for Heat-map Entropy Evaluation of Eye-tracking Data
Seung Bin Son, Yejin Lee, and Hyun-Chul Lee(KAERI)

Study that Evaluates Interface Design using Gaze Entropy
Yejin Lee and Hyun-Chul Lee(KAERI)

Application of STPA Methodology to Safety Analysis of Operation Automation System of Nuclear Power Plant Using Artificial Intelligence Technology
Kee-Choon Kwon, Jang-Yeol Kim and Seo Ryong Koo(KAERI)

Prediction of Grain Orientation in Dissimilar Metal Welds Based on FEA and Optimization
Seongjin Moon, To Kang, Soonwoo Han, and Kyongmo Kim(KAERI), Sung-Jin Song(SKKU)

Data Packet Backtracking in Digital System Network
Dongil Lee, Kwang-Hyun Lee, and Wonwoong Ko(KHNP CRI)

Development of Parts History Management System(PHMS) for the Fault Diagnostic Monitoring of Safety Systems
Yi-Sub Min and Jeong-Min Park(KAERI, KOMAC)

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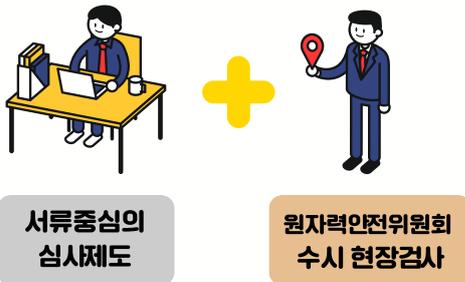
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- 측정방식 : PIN Diode(반도체)
- 크기 : 130(L) × 130(D) × 165(H)mm
- 감도 : 0.3 cpm/pCi/L
- 소비전력 : 5V/1A(5V DC Adapter)
- 배터리 : 리튬이온 3.7V 4A 배터리 내장

제품특징

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- Po-218 분리 측정에 의한 빠른 응답/회복
- 외부 방사선 영향을 거의 받지 않음
- 완충시 최대 8시간 측정 가능
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Tel 042-826-2613, 2614, 2615, 2677 **Fax** 042-826-2617

E-mail kns@kns.org