



THE UNIVERSITY OF CALIFORNIA

BERKELEY NUCLEAR RESEARCH CENTER

BERKELEY, CALIFORNIA

The University of California
Berkeley Nuclear Research Center

<http://bnrc.berkeley.edu/>

is organizing

The 4th Annual Asia-Pacific Nuclear Energy Forum on

Small and Medium Reactors (SMRs): Benefits and Challenges

Friday, June 18, and Saturday, June 19, 2010, in Berkeley, CA

with

Student and Young Professionals Poster competition

Thursday, June 17, 2010, Berkeley, CA

Forum Chair:

Professor Jasmina Vujic

The Asia-Pacific Forum series provide an annual opportunity for nuclear energy leaders from around the Pacific Rim to exchange timely information and perspectives on recent international developments in nuclear energy from their respective regions. The objective of the series of forums organized, is to bring together the leading world's experts and decision makers to establish a framework that could provide the science, technology and policy base for the development, deployment and life-cycle use of nuclear energy and nuclear technology infrastructure that meets global goals for safety, security, sustainability, and economics.

The 4th Forum will focus both on SMRs based on proven LWR technologies, as well as on innovative non-LWR designs that could provide increased benefits in safety, security, sustainability, non-proliferation, siting flexibility economics and advanced fuel cycle options. We will bring together approximately seventy experts and leaders from industry, universities, national laboratories, government, and international organizations to identify Small and Medium Reactor innovations and issues associated with safe, secure, sustainable and economical nuclear energy systems. The 4th Forum includes invited participants from USA, Canada, China, India, Japan, Korea, France, Russia and representatives of the IAEA.

Location: University of California at Berkeley Campus and Lawrence Berkeley National Laboratory.

Scientific Tours: Lawrence Berkeley National Laboratory and Lawrence Livermore National Laboratory.

Hotel: Shattuck Plaza Hotel in Berkeley, Call: (510) 845-7300 or (866) 466-9199 and ask for the "BNRC Forum" rate (17% discount), or go to www.hotelshattuckplaza.com, enter the dates, click "Book Now", click on "Corporate Rates" and enter the code: bnrc10.

For other hotels see: http://www.nuc.berkeley.edu/Overview/Visitor_Information

For maps and directions, please visit the UC Berkeley visitor's page: <http://www.berkeley.edu/visit/>

Public Transportation: http://visitors.berkeley.edu/gethere/public_transit.shtml

Contact:

Prof. Jasmina Vujic (Vujic@nuc.berkeley.edu), 510-643-8085

Dr. Francesco Ganda (gandaf@nuc.berkeley.edu)

Dr. Bethany Goldblum (Bethany@nuc.berkeley.edu)



THE UNIVERSITY OF CALIFORNIA

BERKELEY NUCLEAR RESEARCH CENTER

BERKELEY, CALIFORNIA

The 4th Annual Asia-Pacific Nuclear Energy Forum on
Small and Medium Reactors (SMRs): Benefits and Challenges
Friday, June 18, and Saturday, June 19, 2010, in Berkeley, CA

with
Student and Young Professionals Poster competition
Thursday, June 17, 2010, Berkeley, CA

Chair:

Professor Jasmina Vujic

Program Committee

Prof. Jasmina Vujic, UCB
Dr. David McCallen, LLNL

Dr. Sara Scott, LANL
Dr. Robert Budnitz, LBNL

Dr. Jor Shan Choi,
University of Tokyo, Japan
Dr. Ning Li, Xiamen
University, China
Dr. Dan Ingersoll, ORNL

Prof. Ehud Greenspan, UCB

Prof. Per Peterson, UCB
Dr. Francesco Ganda, UCB

Organizing Committee

Prof. Jasmina Vujic, UCB
Prof. Ehud Greenspan, UCB

Prof. Per Peterson, UCB
Dr. Francesco Ganda

Dr. Bethany Goldblum, UCB

Dr. David McCallen, LLNL

Dr. Max Fratoni, LLNL

Dr. Sara Scott, LANL

Dr. Robert Budnitz, LBNL
Dr. Lee Schroeder, LBNL

International Committee

Dr. Atam Rao, IAEA, Austria
Dr. Ning Li, Xiamen University,
China

Dr. Rata Sinha, BARC, India
Dr. Jor Shan Choi, University
of Tokyo, Japan

Prof. Koji Okamoto, University
of Tokyo, Japan
Prof. Kune Suh, Seoul National
University, Korea

Dr. Tamara Poveschenko,
Kurchatov Institute, Russia
Prof. Jong-Kyng Kim, Hanyang
University, Korea

GENERAL TOPICS

- Small and Medium Reactors for Early Deployment
- Advanced Concepts of Small and Medium Reactors
- Meeting the Challenges of Regulatory, Economical and Scalability Issues
- Meeting the Challenges of Proliferation Resistance and Energy Security Issues
- Physics of Advanced Nuclear Reactors
- Principal Advanced Reactor Design Features
- Innovative Safety Designs and Features
- Nuclear Sustainability and Advanced Fuel Cycles



THE UNIVERSITY OF CALIFORNIA

BERKELEY NUCLEAR RESEARCH CENTER

BERKELEY, CALIFORNIA

The 4th Annual Asia-Pacific Nuclear Energy Forum on
Small and Medium Reactors (SMRs): Benefits and Challenges

Friday, June 18, and Saturday, June 19, 2010, in Berkeley, CA
 with

Student and Young Professionals Poster Competition

Thursday, June 17, 2010, Berkeley, CA

A G E N D A

THURSDAY, JUNE 17, 2010

WOZNIAK LOUNGE, SODA HALL, UNIVERSITY OF CALIFORNIA AT BERKELEY

Student and Young Professionals Poster Competition (PART I)

10:00 AM – 12:00 PM	Small and Medium Size Reactors Poster Competition: Student Presentations	Competing Student Teams
12:00 PM – 12:30 PM	Lunch for Students	
12:30 PM	Board a bus for the tour of NIF at LLNL Le Roy Ave, between Hearst Ave and Ridge Road, on the East side of Soda Hall)	

Tour of the National Ignition Facility, Lawrence Livermore National Laboratory

12:30 PM	Board a bus for the tour of NIF at LLNL (Le Roy Ave, between Hearst Ave and Ridge Road, on the East side of Soda Hall)	
01:00 PM – 05:00 PM	Visit to Lawrence Livermore National Laboratory and tour of the National Ignition Facility (Bus will be provided.)	
06:00 PM – 09:00 PM	RECEPTION (UCB Faculty Club, Seaborg Room) STUDENT AND YOUNG PROFESSIONALS POSTER COMPETITION (PART II – POSTER EXHIBITION)	
07:00PM – 08:00 PM	KEYNOTE SPEAKER: DR. ED MOSES, LLNL, “THE NATIONAL IGNITION FACILITY: THE FUTURE FOR FUSION ENERGY”	



THE UNIVERSITY OF CALIFORNIA

BERKELEY NUCLEAR RESEARCH CENTER

BERKELEY, CALIFORNIA

The 4th Annual Asia-Pacific Nuclear Energy Forum on **Small and Medium Reactors (SMRs): Benefits and Challenges**

FRIDAY MORNING, JUNE 18, 2010

FACULTY CLUB, SEABORG ROOM, UNIVERSITY OF CALIFORNIA AT BERKELEY

7:30 AM – 8:00 AM Registration and Continental Breakfast

8:00 AM – 8:05 AM **Welcoming Remarks (Jasmina Vujic, UCB, US)**

SESSION I: SMALL AND MEDIUM REACTORS FOR EARLY DEPLOYMENT

OBJECTIVE: Review of the SMR technologies that are ready for early deployment. Identification of opportunities for further enhancement of the sustainability, safety and security of SMRs.

Co-Chairs: Shunsuke Kondo, JAEC, Japan, and Bill Halsey, LLNL

08:05 AM – 08:25 AM	Historical Perspective of Small Modular Reactors	Dan Ingersoll, ORNL, US
08:25 AM – 08:45 AM	Global Perspectives on SMRs and Developing Countries Expectations	Atam Rao, IAEA, Austria
08:45 AM – 09:05 AM	Exploring Institutional Consensus for Modular Nuclear Deployment	Joseph C. Perkowski, INL, US
09:05 AM – 09:25 AM	Alternative Financing Perspectives for SMRs: NuScale Example	August Fern, CMEA Capital, US
09:25 AM – 09:45 AM	Discussion	

PANEL PRESENTATIONS AND DISCUSSION Moderator: Per Peterson, UCB, US

09:45 AM - 10:05 AM	The SMART Reactor	Won Jae Lee, Korea
10:05 AM - 10:25 AM	SMR Hitachi's Activities: DMS and the Package Reactor	Tetsushi Hino, Hitachi, Japan
10:25 AM - 10:45 AM	NuScale	Bruce Landrey, NuScale, US
10:45 AM – 11:05 AM	Current Activities on the 4S Reactor Deployment	Kazuo Arie, Toshiba, Japan
11:05 AM – 11:25 AM	SVBR-100 Module-Type Fast Reactor of the IV Generation for Regional Power Industry	Alexander Chebeskov, IPPE, Obninsk, Russia
11:25 AM – 12:00 AM	DISCUSSION and Q&A	
12:00 PM - 01:00 PM	LUNCHEON (UCB Faculty Club, Seaborg Room)	



THE UNIVERSITY OF CALIFORNIA

BERKELEY NUCLEAR RESEARCH CENTER

BERKELEY, CALIFORNIA

The 4th Annual Asia-Pacific Nuclear Energy Forum on
Small and Medium Reactors (SMRs): Benefits and Challenges

FRIDAY AFTERNOON, JUNE 18, 2010

FACULTY CLUB, SEABORG ROOM, UNIVERSITY OF CALIFORNIA AT BERKELEY

SESSION II: ADVANCED CONCEPTS OF SMALL AND MEDIUM REACTORS – Part I

OBJECTIVE: Review the technologies, either developed and under development, for advanced concepts of SMRs and identify challenges and opportunities.

Co-Chairs: Alexander Chebeskov, IPPE, Obninsk, Russia, and Harold McFarlane, INL

01:00 PM – 01:20 PM	Department of Energy Small Modular Reactor (SMR) Program	Richard Black, DOE-NE, US
01:20 PM – 01:40 PM	Presentation: SMR Economics Evaluation	Giorgio Locatelli, POLIMI, Italy
01:40 PM – 02:00 PM	Review of France's Nuclear Program	Luc Van Der Durpel, AREVA, France
02:00 PM – 02:20 PM	Review of Korea's Advanced SMRs	Kune Suh, Seoul Natl. University, Korea
02:20 PM – 02:45 PM	DISCUSSION and Q&A	
	BREAK	

PANEL PRESENTATIONS AND DISCUSSION Moderator: Ehud Greenspan UCB, US

03:00 PM – 03:20 PM	PRISM	Eric Loewen, GE-Hitachi Nuclear, US
03:20 PM – 03:40 PM	PB-AHTR – Fluoride Salt Cooled	Per Peterson, UCB, US
03:40 PM – 04:00 PM	Sm-AHTR	Sherrell Greene, ORNL, US
04:00 PM – 04:20 PM	EM2: Addressing the Major Issues Confirming U.S. Nuclear Power in the 21 st Century	Robert Schleicher, General Atomics, US
04:20 PM – 04:40 PM	ENHS, STAR and ELSY	Craig Smith, Naval Postgraduate School and LLNL
04:40 PM – 05:00 PM	Approaches to a LFR Demonstrator	James Sienicki, ANL, US
05:00 PM – 05:20 PM	Three-Dimensional Liquid Metal Flow Visualization Using DNCT™	Koji Okamoto, The University of Tokyo, Japan
05:20 PM – 05:45 PM	DISCUSSION and Q&A	
07:00 PM – 09:30 PM	Dinner	(UCB Faculty Club, Seaborg Room)

After Dinner Lecture Introduction: **Prof. Per Peterson**

Dinner Keynote Speaker: **Prof. Shunsuke Kondo** (Japan Atomic Energy Commission, Japan) "Overview of the current status and regulatory issues in Japan"

The 4th Annual Asia-Pacific Nuclear Energy Forum on
Small and Medium Reactors (SMRs): Benefits and Challenges

SATURDAY, JUNE 19, 2010

BUILDING 66 AUDITORIUM, LAWRENCE BERKELEY NATIONAL LABORATORY

07:30 AM – BUS WILL BE WE WAITING IN FRONT OF THE SHUTTACK PLAZA HOTEL

08:00 AM – 08:05 AM **Welcoming Remarks**

SESSION II: ADVANCED CONCEPTS OF SMALL AND MEDIUM REACTORS – Part II

Co-Chairs: Kune Suh, Seoul Natl. University, Korea, and David McCallen, LLNL, US

08:05 AM – 08:25 AM	Compact Deployable Nuclear Power Systems for Civilian and Defense Applications	J. Paul Farrell, RADIX Power Energy Corporation, US
08:25 AM – 08:55 AM	Hyperion Power Module: Small Modular Reactor Characteristics	John Deal/Turner Trapp, Hyperion Power, US
08:55 AM – 09:15 AM	ARC-100	David Wade, Advanced Reactor Concepts, LLC. US
09:15 AM – 09:35 AM	CRIEPI's Experience on SMRs	Yoshihisa Nishi, CRIEPI, Japan
09:35 AM - 09:55 AM	The Travelling Wave Reactor	Kevan Weaver, TerraPower, US
09:55 AM – 10:15 AM	DISCUSSION and Q&A	

SESSION III: MEETING THE CHALLENGES OF REGULATORY, ECONOMICAL, PROLIFERATION RESISTANCE AND ENERGY SECURITY ISSUES

OBJECTIVE: Review the technologies, either developed and under development, for advanced concepts of SMRs and identify challenges and opportunities.

Co-Chairs: Giorgio Locatelli, POLIMI, Italy, and Bob Budnitz, LBNL, US

10:15 AM – 10:35 AM	U.S. Nuclear Regulatory Commission Preparation for Reviewing Advanced Reactor Designs	Stewart Magruder, NRC, US
08:40 AM – 09:00 AM	On Nuclear Energy Collaboration in Northeast Asia	Yoshio Matsumi, ITOCHU Co., Japan
10:35 AM – 10: 55AM	Review of SMR Challenges	Dominique Greneche, Nuclear Consulting, France
10:55 AM – 11:15 AM	Seismic Safety Issues for SMRs	Boza Stojadinovic, UCB, US
11:15 AM – 11:35 AM	Challenges in Computational Methods Development for SMRs	Tamara Poveschenko, Kurchatov Institute, Russia
11:35 AM – 11:55 AM	Co-generation of Electricity/Process Heat and other applications of SMRs	Per Peterson, UCB, US
11:55 AM – 12:15 PM	Discussion and Closing Remarks	Jasmina Vujic, UCB, US
12:15 PM – 01:00 PM	Lunch	

01:00 pm – 03:00 pm OPTIONAL: Tour of Lawrence Berkeley National Laboratory



THE UNIVERSITY OF TOKYO