

APPLICATION

All FJOH-2013 school applicants should fill out the on-line form at:

► www.fjohss.eu

Should there be any problem with the on-line registration, please contact:

Mrs. Ingeborg Schwartz

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Phone: +49 (0) 721 6082 2552 - Fax: +49 (0) 721 6082 3718

► ingeborg.schwartz@kit.edu

Deadline for application: May 17, 2013

Full registration fees: € 1800

Reduced Fees: € 900 for fellowship recipients

Information for payment of the fees will be provided upon review of applications.

The fees cover: lectures, class notes, excursions, meals and lodging at the Akademie Hotel Karlsruhe.

The fees do not cover travel expenses.

A limited number of fellowships will be available for qualified candidates. The fellowship covers the amount of € 900, which leaves the remaining amount of € 900 to be financed by the applicant or his/her employer. These fellowships are primarily intended for candidates from developing countries. Requests should be motivated.

All applicants are required to provide a short curriculum vitae, which will be used for selection purposes.

The FJOH School considers that the 2013 programme corresponds approximately to 3-4 ECTS credits of post graduate-level course work in Nuclear Engineering.

Selection by the FJOH School organizers is final.

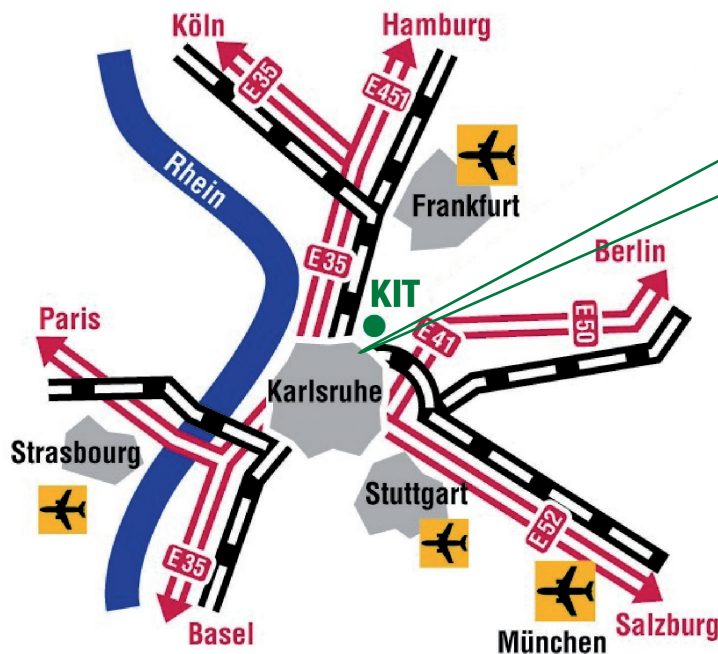
INFORMATION

► Key dates

The school will start on August 20, 2013, 7:00 pm with a get-together-dinner at the Akademie Hotel Karlsruhe and will end on August 30, 2013, 1:00 pm.

Partial participations are not accepted.

Notification to applicants: June 5, 2013



► Questions ? Please contact:

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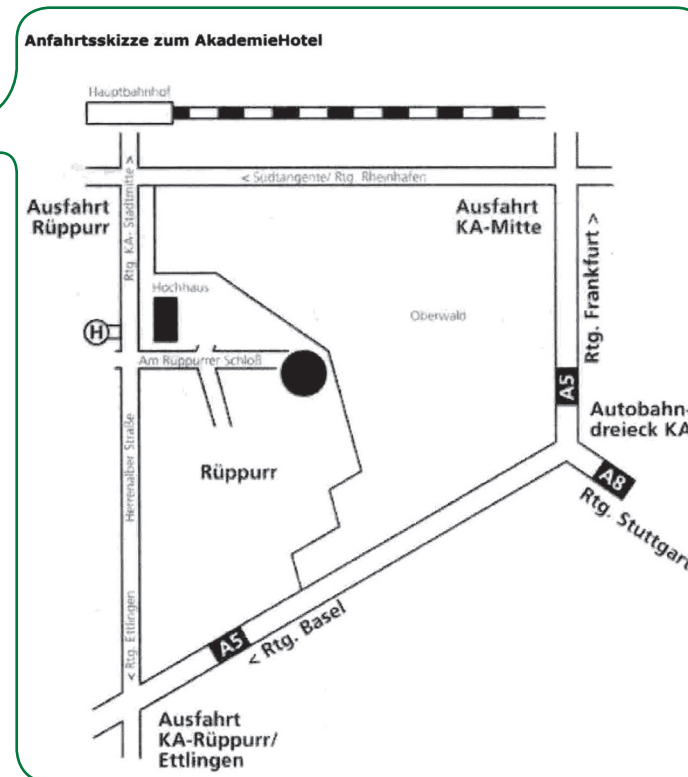
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INFORMATION

► Venue

The School will be held at the Akademie Hotel Karlsruhe, located about 4 km from downtown Karlsruhe, Baden-Württemberg, Germany.

The Akademie Hotel is conveniently accessible by tram from the Karlsruhe central train station.



Frédéric JOLIOT & Otto HAHN

SUMMER SCHOOL ON NUCLEAR REACTORS

“Physics, fuels and systems”

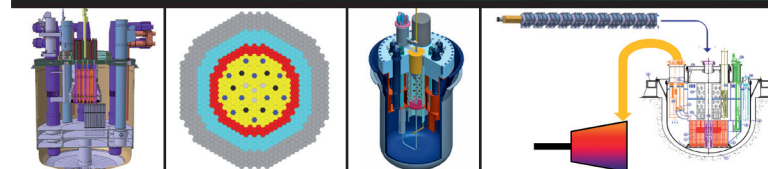
2013



Jointly organized by the Commissariat à l'Énergie Atomique et aux Énergies Alternatives (France) and the Karlsruhe Institute of Technology (Germany)

ADVANCED NUCLEAR SYSTEMS WITH TRANSURANIUM FUELS

GALETS BIEUS AGENCE 04 92 72 27 19



Karlsruhe Germany August 20 > 30

Karlsruhe Germany
August 20 > 30

► Deadline for application
May 17, 2013

For more information and for application
www.fjohss.eu

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CADARACHE

PROGRAMME OUTLINE

ADVANCED NUCLEAR SYSTEMS WITH TRANSURANIUM FUELS

1. Introduction and Overview	6 h
1.1. Transmutation Systems: Motivations and Concepts (2 h)	Dr. Jean-Marc Cavedon (PSI, Switzerland)
1.2. Status of 20+ Years of R&D in Europe: Where do we Stand? (2 h)	Dr. Dominique Warin (CEA, France)
1.3. Design Methodology and Criteria, Safety Considerations, Technological Readiness Assessment (2 h)	Dr. Kazuo Minato (JAEA, Japan)
2. Fast Critical Reactors and Transmutation	6 h
2.1. Reactor Concepts and Optimization, ASTRID and other Demonstrations (3 h)	Dr. Bruno Fontaine (CEA, France)
2.2. Core Physics: Specificities, Methods, Validation (3 h)	Dr. Konstantin Mikityuk (PSI, Switzerland)
3. Transmutation in Sub-critical Accelerator-driven Systems	9 h
3.1. ADS Concepts: Characteristics, Safety and Demonstrators (2 h)	Dr. Bernard Carlucc (AREVA, France)
3.2. Spallation Target: Physics, Materials, Experiments (2 h)	Dr. Concetta Fazio (KIT, Germany)
3.3. Proton Accelerators for ADS and Performance Issues (2 h)	Prof. Dr. Holger J. Podlech (Frankfurt University, Germany)
3.4. Sub-critical Core Physics and Experiments (2 h)	Dr. Annick Billebaud (CNRS/LPSC, France)
3.5. The MYRRHA Demonstrator: From the Conceptual Stage to the Actual Plant Design and Specifications (1 h)	Prof. Dr. Hamid Aït Abderrahim (SCK-CEN, Belgium)
4. Partitioning and Separation Processes	4 h
4.1. Aqueous Recycling Technologies for Fuels and Targets (2 h)	Dr. Robin Taylor (NNL, UK)
4.2. Pyro-processing of Spent Fuels (2 h)	Dr. Hansoo Lee (KAERI, Korea)
5. Advanced Fuels	9 h
5.1. Fuel Re-fabrication: Minor-actinide Bearing Fuels and Targets (3 h)	Dr. Joseph Somers (EC/JRC-ITU, Germany)
5.2. Ceramic Fuels for MA Homogeneous and Heterogeneous Recycling (3 h)	Dr. Nathalie Chauvin (CEA, France)
5.3. Metallic Fuels for MA Homogeneous and Heterogeneous Recycling (3 h)	Dr. Rory Kennedy (INL, USA)
6. Ultimate Waste Management	4 h
6.1. Waste Management: Handling and Transport Issues (2 h)	Dr. Klaus-Jürgen Brammer (GNS, Germany)
6.2. Long-term Waste Forms and Geological Repository (2 h)	Dr. Claes Thegerström (SKB, Sweden)
Seminar	2 h
Societal and Economics Conditions for the Development of Nuclear Systems	Dr. Harri Tuomisto (Fortum, Finland)

Technical visits of Karlsruhe Institute of Technology R&D facilities

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DESCRIPTION

This 19th session of the Frédéric Joliot/Otto Hahn (FJOH) Summer School on “Nuclear Reactors Physics, Fuels, and Systems” will be held in Karlsruhe, Germany, from **August 20 to August 30, 2013**.

This year's session is devoted to “Advanced Nuclear Systems with Transuranium Fuels”. The course programme addresses the motivation and objectives for the development of such systems, in the context of various local and global fuel management strategies. The progress made over the past 20 years will be described, as well as on-going projects and future plans. Both critical fission reactors and subcritical spallation-source driven systems will be covered, from the standpoint of core and fuel physics, minor-actinide transmutation efficiency, technological feasibility, design criteria, operational and safety constraints. Different lecturers will provide complementary perspectives on each topic. The course will also cover state-of-the-art core and fuel modelling techniques, relevant analysis methods, and the need for experiments and technological demonstrations. Moreover, the FJOH-2013 participants will learn about front-end and back-end fuel cycle considerations, including minor-actinide bearing fuel fabrication, handling and transport, spent fuel reprocessing, and ultimate waste disposition. A seminar will address societal and economics considerations.

This course represents the continuation of the Frédéric Joliot Summer Schools on «Modern Reactor Physics and the Modelling of Complex Systems», which was created in 1995 to promote knowledge in the field of reactor physics, in a broad sense, and the international exchange of teachers, scientists, engineers and researchers. Beginning in 2004, the scope of the School was extended to include scientific issues related to nuclear fuels.

The School's aim is to address the challenges of reactor design and optimal fuel cycles, and to broaden the understanding of theory and experiments. The venues of the FJOH School sessions alternate between Karlsruhe and Aix-en-Provence.

Lecturers are invited from internationally leading universities, research and development laboratories, and industry. The lectures are at a post-doctoral level. They are intended for junior as well as experienced scientists and engineers engaged in the broad field of nuclear sciences, engineering and technologies.

The programme of each school session is defined by the International FJOH Scientific Board (see below).

The Karlsruhe Institute of Technology and the Nuclear Energy Division of CEA jointly organize and sponsor the FJOH Summer School.

FJOH Scientific Board members

Prof. Jan Blomgren (Vattenfall AB, Sweden)
Dr. Ron Cameron (OECD, International)
Prof. Francisco Fernandez (CSN, Spain)
Prof. Michel Giot (UCL, Belgium)
Prof. Wacław Gudowski (RIT, Sweden)
Dr. Kevin Hesketh (NNL, UK)
Prof. Jan Leen Kloosterman (Delft Univ., The Netherlands)
Dr. Rudy Konings (EC/JRC-ITU & Delft University, Germany)
Dr. Alex Mueller (CNRS, France)
Dr. Stefan Niessen (AREVA, Germany)

Dr. Daniel Parrat (CEA, France)
Prof. Horst-Michael Prasser (ETHZ, Switzerland)
Prof. Piero Ravetto (Politecnico di Torino, Italy)
Prof. Richard Sanchez (CEA, France)
Prof. Vladimir Slugen (Slovak Univ. of Tech. & ENS, Slovakia)
Dr. Walter Tromm (KIT, Germany)
Dr. Harri Tuomisto (Fortum Power, Finland)
Dr. Luc Vanhoenacker (Tractebel Eng.-GDF-Suez, Belgium)
Prof. David Weaver (University of Birmingham, UK)
Prof. Frank-Peter Weiss (GRS, Germany)

2013