

APPLICATION FORM

**Frédéric Joliot/Otto Hahn Summer School
on Nuclear Reactors:
«Physics, Fuels, and Systems»**
**CEA Cadarache,
August 23rd - September 1st, 2006**

Title and Family Name
(Prof, Dr, Mrs, Miss, Mr):

First Name:

Employer/University:

Professional address:

Country:

Tel :

Fax:

e-mail:

Supplementary information for site entry/visits :

Date of birth:

Birthplace:

Nationality:

Home address:

Passport number:

Issued at:

Issued on:

Expires on:

Please enclose a short curriculum vitae
(+photo in JPEG RGB)

O I request a fellowship (number is limited)

A confirmation letter will be sent to you with full details for payment

Date:

INFORMATION

To apply, return the attached form by mail, e-mail, or fax to:

Mrs. Brigitte LE FUR
DEN/AFF-INT, Bldg 101, CEA Cadarache
F-13108 Saint-Paul-Lez-Durance Cedex France.
Fax : +33 (0) 4 42 25 41 42
e-mail: brigitte.le-fur@cea.fr

The application form can be downloaded from our web site:
<http://www.cad.cea.fr/fr/fjohss/fjohss.htm>

DEADLINE: MAY 14, 2006

Cost of the School: € 1500

Fees cover: lectures, class notes, all meals and accommodation
(starting on August 22 p.m).
Travel expenses are not included.

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

**The number of participants is limited. All applicants are required
to provide a short curriculum vitae, which will be used for
selection purposes.**

**A limited number of fellowships will be available
for qualified candidates.**

The FJOH School considers that the 2006 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



August 23rd - September 1st, 2006

Location

The School will be held at the "Cadarache Château" located in
Southeastern France near the CEA Cadarache Research Center
(40 km from Aix-en-Provence, 70 km from the Marseille airport).

Bus transportation (free of charge) from Marseille airport, Aix-en-Provence TGV
railway-station, and Aix-en-Provence (town) will be provided on August 22nd p.m.

Participation is mandatory till the end of the course.

Return transportation will be provided on September 1st at 2:00 p.m.

A week-end programme will be organized free of charge

For more information, please visit our web site:

<http://www.cad.cea.fr/fr/fjohss/fjohss.htm>
<http://www.fzk.de/fjohss>

or contact

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Frédéric Joliot & Otto Hahn

THE 2006 Frédéric Joliot & Otto Hahn SUMMER SCHOOL ON NUCLEAR REACTORS " Physics, Fuels, and Systems "

jointly organized by the "Commissariat à l'Energie Atomique" (France)
and the "Forschungszentrum Karlsruhe" (Germany)

CHALLENGES AND INNOVATION FOR LIGHT WATER REACTORS



CADARACHE

FRANCE

August 23rd - September 1st, 2006



PROGRAMME OUTLINE

LECTURERS

COORDINATION

DESCRIPTION

TOPIC 1

2 h

ADVANCED LWRs AND THEIR FUTURE ROLE

TOPIC 2

10 h

- NEUTRON PHYSICS ISSUES AND FUEL CYCLE OPTIMIZATION
 - 2.1 High Fuel Burn-ups and Related Safety Considerations
 - 2.2 Plutonium Recycling Options
 - 2.3 Future Analytical Tools

TOPIC 3

6 h

- ADVANCES IN THERMO-HYDRAULICS AND IMPLICATIONS
 - 3.1 Two-phase Flow and Turbulence Modelling
 - 3.2 Reactor Core and Containment Cooling in Innovative LWRs

TOPIC 4

3 h

STRUCTURAL MATERIALS UNDER IRRADIATION

TOPIC 5

10 h

- FUEL DEVELOPMENT NEEDS
 - 5.1 Uranium and Plutonium Oxides
 - 5.2 Zirconium Alloys for Fuel Cladding
 - 5.3 In-reactor Fuel Performance and Limitations
 - 5.4 Modelling of Fuel Behaviour

TOPIC 6

8 h

- CHALLENGES IN SAFETY ANALYSIS
 - 6.1 Probabilistic Safety Assessment
 - 6.2 Coupled Thermo-hydraulics and Neutronics Simulations
 - 6.3 Analysis of Hydrogen behaviour in PWR and BWR Safety Studies
 - 6.4 R & D Needs and Initiatives

SPECIAL EVENT

THE ECONOMICS OF NUCLEAR POWER

Technical Visits of Cadarache Facilities

TOPIC 1

- Prof (em) Dr Hugo Van Dam, Delft University, The Netherlands

TOPIC 2

- Prof Dr Hans Dieter Berger, Framatome ANP, Germany
- Prof Rakesh Chawla, Swiss Federal Institute of Technology, Switzerland
- Prof Dr Alireza Haghighat, University of Florida, USA

TOPIC 3

- Prof (em) George Yadigaroglu, Swiss Federal Institute of Technology, Switzerland
- Prof Yukata Kukita, Nagoya University, Japan

TOPIC 4

- Dr Clément Lemaignan, Commissariat à l'Énergie Atomique, France

TOPIC 5

- Prof Michel Beauvy, Commissariat à l'Énergie Atomique, France
- Dr Clément Lemaignan, Commissariat à l'Énergie Atomique, France
- Dr Yannick Guérin, Commissariat à l'Énergie Atomique, France
- Dr Paul Van Uffelen, Institute for Transuranium Elements, Germany

TOPIC 6

- Dr Klaus Koeberlein, Gesellschaft für Anlagen-und Reaktorsicherheit mbH, Germany
- Prof Kostadin Ivanov, Penn State University, USA
- Dr Wolfgang Breitung, Institute for Nuclear & Energy Technologies, Germany
- Prof Carlo Vitanza, Organization for Economic Co-operation and Development, Nuclear Energy Agency, France

SEMINAR

- Prof Risto Tarjanne, Lappeenranta University of Technology, Finland

For Commissariat à l'Énergie Atomique	For Forschungszentrum Karlsruhe
Honorary Directors	
Prof M. Salvatores Research Director, Scientific Advisor Nuclear Energy Division CEA/DEN/DIR, Cadarache/France massimo.salvatores@cea.fr & Argonne National Laboratory, USA	Prof D.G. Cacuci Director, Institut für Kerntechnik und Reaktorsicherheit Universität Karlsruhe/Germany cacuci@ikr.uni-karlsruhe.de
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The twelfth session of the Frédéric Joliot/Otto Hahn (FJOH) Summer School on Nuclear Reactors, "Physics, Fuels and Systems" will be held in Cadarache, France, from August 23rd to September 1st, 2006. This represents the continuation of the series of Frédéric Joliot Summer Schools, which was created by CEA in 1995 to promote knowledge in the field of Reactor Physics in a broad sense, and the international exchange of teachers, young scientists 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 designing future reactors and optimal fuel cycles, and to broaden the understanding of theory and experiments. The 2006 edition will focus on Challenges and Innovations for Light Water Reactors, providing a broad overview on different topics and underlining the associated R&D. Important scientific issues regarding core and fuel physics, materials, thermohydraulics and plant safety will be addressed, in connection with the transition from current technology to GEN-III systems.

Lecturers are invited from internationally leading universities, research and development laboratories, and industry. The lectures are preliminary intended for young post-doctoral scientists and engineers engaged in the broad field of nuclear sciences, engineering and technologies.

The programme of each School session is elaborated by the International FJOH Scientific Board*.

The Forschungszentrum Karlsruhe and the CEA Nuclear Energy Division jointly organize the FJOH School.

The School is sponsored by the CEA Nuclear Energy Division (DEN), the Institute for Education and Training in Nuclear Science and Technology (INSTN), the Provence-Alpes-Côte-d'Azur Region (PACA), and the Forschungszentrum Karlsruhe.

* The list of the Scientific Board Members can be found on the FJOH School web sites.