



*The Abdus Salam*  
**International Centre for Theoretical Physics**

  
United Nations  
Educational, Scientific  
and Cultural Organization

  
International Atomic  
Energy Agency

**SMR.1829**  
**July 2006**

**WINTER COLLEGE  
ON  
FIBRE OPTICS,  
FIBRE LASERS AND  
SENSORS**

**12 - 23 February 2007**

Strada Costiera 11  
I - 34014 Trieste  
Italy

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The Abdus Salam  
International Centre for Theoretical Physics



## WINTER COLLEGE ON FIBRE OPTICS, FIBRE LASERS AND SENSORS

12 - 23 February 2007

The Abdus Salam International Centre for Theoretical Physics (ICTP), in collaboration with the International Commission for Optics (ICO), the Optical Society of America (OSA), the International Society for Optical Engineering (SPIE), the European Optical Society (EOS) and the International Society on Optics Within Life Sciences (OWLS), will organize a Winter College on Fibre Optics, Fibre Lasers and Sensors, which will be held at the ICTP, Trieste, Italy, from 12 to 23 February, 2007.

### DIRECTORS:

**A. Clarkson** (University of Southampton, U.K.)  
**H. L. Fragnito** (University of Campinas, Brazil)  
**A. G. Mignani** (CNR-Institute of Applied Physics, Firenze, Italy)

### LOCAL ORGANIZER:

**G. Denardo** (ICTP, Italy)

### I. PURPOSE AND NATURE

The College will expose the participants to the scientific issues that are driving the progress of fibre lasers and modern fibre optics. The programme consists of lectures by international experts, group discussions and laboratory demonstrations. The aim is to provide the background needed to follow the most advanced literature.

MAIN TOPICS:

- *Fundamentals of fibre lasers and amplifiers*
- *Spectroscopy of rare-earth-doped glasses*
- *High-power fibre lasers and amplifiers*
- *Ultrashort pulse fibre sources*
- *Fibre sensors - Introduction and basic principles*
- *Fibre sensors - Different architectures and applications*
- *Optical fibre telecommunications*
- *Photonic crystal (or microstructured) fibres - Theory and applications*
- *Nonlinear effects in optical fibres and applications*
- *Passive fibre components and integration*
- *Fibre Bragg gratings - Theory, fabrication and applications*

An ICTP **PREPARATORY SCHOOL** will be organized the week before the College (i.e. 5 - 9 February 2006) for a limited number of selected participants. The purpose is to recollect some basic scientific elements that are relevant to the contents of the College lectures. The School Sessions will have a tutorial structure, i. e. will include lectures and exercises.

The LAMP (Laser, Atomic and Molecular Physics) programme will include group discussions and internal seminars by participants. Those who intend to deliver a seminar are expected to come to ICTP prepared with all the material needed for their talk.

The ICO - ICTP Prize (nominations are solicited) will be awarded during the ICTP Winter College (see info. on Page 3).

## **II. PARTICIPATION**

Scientists and students from all countries that are members of the UN, UNESCO or IAEA can attend the College. As it will be conducted in English, participants should have an adequate working knowledge of that language.

As a rule, travel and subsistence expenses of the participants are borne by the home institutions. However, limited funds are available for some participants from developing countries, who will be selected by the Organizers.

A limited number of grants will be made available by the Central European Initiative (CEI) Secretariat in Trieste to support participants from CEI countries.

Such financial support is available only for those who attend the entire activity. As scarcity of funds allows travel to be granted only in a few exceptional cases, every effort should be made by candidates to secure support for their fare (or at least half-fare) from their home country. There is no registration fee to attend the College.

### **Deadline for the RECEIPT of request for participation form:**

**15 OCTOBER 2006**

Candidates should complete and sign the attached "Request for Participation" form (also obtainable from the ICTP WWW Server: <http://agenda.ictp.it/smr.php?1829>) and return it to:

**smr1829 - Winter College on Fibre Optics, Fibre Lasers and Sensors  
(c/o Ms. Nadia van Buuren)  
the Abdus Salam International Centre for Theoretical Physics  
Strada Costiera 11  
I-34014 Trieste  
Italy**

*If sending your applications by e-mail, please save and send file attachments in RFT format to: **smr1829@ictp.it***

Any attachments to the request for participation, relevant to additional information for selection purposes, should not exceed 6 pages.

The decision of the Organizers will be communicated to all candidates as soon as possible thereafter.

### **III. ICO/ICTP Award 2007: call for nominations**

ICO, the International Commission for Optics, has established three awards: the 'ICO Prize', the ICO Galileo Galilei Award and the ICO/ICTP Award. The latter was established jointly with ICTP and the International Commission for Theoretical Physics. The deadline for nominations for the ICO/ICTP Award is 1 November 2006.

The ICO/ICTP Award is reserved for young researchers from developing countries (as defined by the United Nations), who conduct their research in a developing country. The award will be given to scientists who are less than 40 years old (on 31 December of the year for which the award is given), who are active in research in Optics and have contributed to the promotion of research activities in Optics in their own or another developing country. While the ICO Web page <http://www.ico-optics.org> has complete information, the instructions below should be sufficient to prepare nomination.

The **Award** consists of the following:

- 1) the ICO gives a cash amount of US\$ 1000 and a certificate;
- 2) the ICTP invites the winner to attend a College at the ICTP, Trieste, when the next appropriate opportunity arises, and to give a seminar on his/her work. ICTP will pay for travel and living expenses.

The award will be delivered to the winner in Trieste in the presence of representatives of ICO and ICTP. This award is given every year. The winner is selected on the basis of nominations received by the Award Committee in response to a 'Call for Nominations' published by both the ICO and the ICTP. The nominations must be documented by a complete Curriculum Vitae, including a list of publications and selected reprints (no more than three), as well as a complete employment history and description of the nominee's achievements for the promotion of research activity in *developing countries*.

The winners of previous awards are:

- 2000: Arbab Ali Khan (Pakistan)
- 2001: Arashmid Nahal (Iran) and Fernando Perez Quitian (Argentina)
- 2002: Aiphan Sennaroglu (Turkey)
- 2003: Robert Szipocs (Hungary)
- 2004: Imrana Ashraf Zahid (Pakistan) and Revati Nitin Kulkarni (India)
- 2005: Sarun Sumriddetchkajorn (Thailand)
- 2006: Hector Manuel Moya-Cessa (Mexico)

The award committee is composed of Prof. A. Wagué of Université Cheikh Anta DIOP de Dakar, Senegal, Chair, Prof. G. Denardo of ICTP, Trieste, Italy, Prof. A. Consortini of University of Florence, Italy and Dr. M. Danailov of Elettra (the Synchrotron facility in Trieste), Italy.

Return your nomination form, together with supporting information, no later than **1 November 2006**, to the Award Committee, Professor G. Denardo, the Abdus Salam International Centre for Theoretical Physics, Strada Costiera, 11, I-34014, Italy, <mailto:denardo@ictp.it>.

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION  
and  
INTERNATIONAL ATOMIC ENERGY AGENCY

the **ABDUS SALAM INTERNATIONAL CENTRE FOR THEORETICAL PHYSICS**

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I-34014 Trieste  
Italy

Telephone: +39-040-2240363  
Telefax: +39-040-2240304  
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**APPLICATION FORM**

**WINTER COLLEGE ON FIBRE OPTICS, FIBRE LASERS AND SENSORS**  
**12 - 23 February 2007**

**INSTRUCTIONS**

Each question must be answered clearly and completely. Type or print in ink. If more space is required, attach additional pages. The request for participation form should be forwarded by e-mail to smr1829@ictp.it or sent to smr1829 - Winter College on Fibre Optics, Fibre Lasers and Sensors (c/o Ms. N. van Buuren), the Abdus Salam International Centre for Theoretical Physics, Strada Costiera 11, 34014 Trieste, Italy, to arrive **no later than 15 October 2006**.

This request will be processed only if the full permanent address (and present address, if different) is clearly indicated.  
**The ICTP cannot process any visa request, unless all requested personal data are provided.**

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**PERSONAL DATA**

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SURNAME/FAMILY Name: MAIDEN Name: First name: Middle name(s): Sex:  
For women only (if applicable)

**IMPORTANT: PLEASE ALSO COMPLETE THIS SECTION, IF YOUR NAME(S) IN YOUR PASSPORT ARE  
SPELT DIFFERENTLY FROM THE ABOVE.**

SURNAME/FAMILY Name: MAIDEN Name: First name: Middle name(s):  
For women only (if applicable)

Place of birth (City and Country): Present nationality: Date of birth:  
Day - Month - Year

Full name/address of permanent Institution: Institute: Tel. No.  
Telefax  
Your Office: Tel. No.  
Telefax  
E-mail: \*

Full name/address of present Institution : Institute: Tel. No.  
(only if different from permanent) Telefax  
Your Office: Tel. No.  
Telefax  
E-mail: \*

until: Date .....

Home address: Tel. No.

Mailing address - please indicate one:.....Permanent  Present  Home

Name and address of person to notify in case of emergency - Relationship: Tel. No.

\* I agree that my e-mail address(es) may be made public on the ICTP WWW page: YES  NO

## PROFESSIONAL DATA

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### EDUCATION *(higher degrees)*

University or equivalent

Name and place

Years attended

From            to

Degrees

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### EMPLOYMENT

#### Previous

Institute / Place

Period of duty

Academic Responsibilities

**Present** employment and duties, and **foreseen** employment upon return to home country after the activity *(if different)*:

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State any **positions** you hold in the scientific administration of your Institution or any national Scientific Institution:

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List your **scientific publications** including books and articles (authors, title, Journal) in the last five years:

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Seminars, summer schools, conferences or research attended:

Name and place

Year

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Mention briefly your previous research experience, and explain your reasons for wishing to participate in this activity:

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Do you wish to participate in the **Preparatory School** to the Winter College on Fibre Optics, Fibre Lasers and Sensors, which will be held at the ICTP from **5 to 9 February 2007**?

YES

NO

## PRESENT FIELD OF INTEREST

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(please indicate on the list below your **TWO** primary fields of interest, in order of priority).

### 10. PHYSICS OF CONDENSED MATTER

- 11. Solid State Physics
- 12. Atomic and Molecular Physics
- 13. Materials Science
- 14. Surfaces and Interfaces
- 15. Statistical Physics
- 16. Computational Physics in Condensed Matter

### 20. PHYSICS OF HIGH AND INTERMEDIATE ENERGIES

- 21. High Energy and Particle Physics
- 22. Relativity, Cosmology and Astrophysics
- 23. Plasma Physics
- 24. Nuclear Physics

### 30. MATHEMATICS

- 31. Applicable Mathematics, including:
  - Mathematical Ecology,*
  - Systems Analysis*
  - Mathematical Economy*
  - Mathematics in Industry*
- 33. Algebra
- 34. Geometry
- 35. Topology
- 36. Differential Equations
- 37. Analysis
- 38. Mathematical Physics

### 40. PHYSICS AND ENERGY

- 41. Physics of Nuclear Reactors
- 42. Physics of Controlled Fusion
- 43. Non-Conventional Energy  
*Solar, Wind & others)*
- 44. Nuclear Energy related technologies

### B1. SPACE PHYSICS

### 50. PHYSICS AND ENVIRONMENT

- 51. Solid Earth Geophysics
- 52. Soil Physics
- 53. Climatology and Meteorology
- 54. Physics of the Oceans
- 55. Physics of Desertification
- 56. Physics of the Atmosphere, Troposphere, Magnetosphere, Aeronomy
- 57. Environmental Monitoring and Remote Sensing

### 60. PHYSICS TEACHING

- 61. English
- 62. French
- 63. Spanish
- 64. Arabic

### 80. MISCELLANEOUS

- 81. Others
- 82. Digital Communications & Computer Networking
- 83. Quantum Computation, and related

### 90. PHYSICS OF THE LIVING STATE

- 91. Neurophysics
- 92. Biophysics
- 93. Medical Physics

### AO. APPLIED PHYSICS

- A1. Physics in Industry
- A2. Microelectronics
- A3. Fibre Optics for Communications
- A4. Instrumentation
- A5. Synchrotron Radiation
- A6. Non-destructive Evaluation
- A7. Lasers
- A8. Plasma Engineering

**NB:** Our Scientific Information System keeps track of *all* applications made by the candidate to earlier ICTP activities. As a consequence, when the subject of the present activity is far from your previous applications, an explanation (not more than 200 words) of your change of interest should be included

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Kindly supply a keyword description of your current scientific activities, as follows (strictly within indicated lengths) :

1) **Area of research:**

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(no more than 50 characters)

2) **Specific topic of interest:**

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(no more than 50 characters)

Have you participated in **past** ICTP activities? If yes, which?

Yes  No

Are you applying to any other **2006** ICTP activities? If yes, which?

Yes  No

Indicate below your proficiency in the English language:

Reading:	Good	<input type="checkbox"/>	Writing:	Good	<input type="checkbox"/>	Speaking:	Good	<input type="checkbox"/>
	Average	<input type="checkbox"/>		Average	<input type="checkbox"/>		Average	<input type="checkbox"/>
	Poor	<input type="checkbox"/>		Poor	<input type="checkbox"/>		Poor	<input type="checkbox"/>

**For junior scientists:** It would be of assistance to the Selection Committee if this request for participation were accompanied by a letter of recommendation from your Supervisor.

Name: \_\_\_\_\_

**REQUEST for FINANCIAL ASSISTANCE**

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APPLICABLE ONLY TO CANDIDATES WHO ARE NATIONALS OF, AND WORKING IN, A DEVELOPING COUNTRY, AND WHO ARE NOT MORE THAN 45 YEARS OLD.

**(Important:** Owing to limited funds, support for travel will be granted only in exceptional cases. Therefore, every effort should be made by applicants to secure support for their fare (or at least a partial contribution) from their home country).

**(Please tick ONE box only)**

- |  |   |
|--|---|
| <input type="checkbox"/> Full Travel + Subsistence | <input type="checkbox"/> Subsistence only               |
| <input type="checkbox"/> Half Travel + Subsistence | <input type="checkbox"/> No financial support requested |

**I certify that if granted funds for my travel, I shall attend the whole activity**

.....  
Signature

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities which would reflect unfavourably on the international status of the ICTP. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my visit at the Centre.

\_\_\_\_\_  
Signature of applicant

\_\_\_\_\_  
Date