



as a Partner Institute of 



hosted by IZTECH, İzmir, Turkey

Tuğrul Senger
Acting Director

Celebrating 50th Anniversary of ICTP !



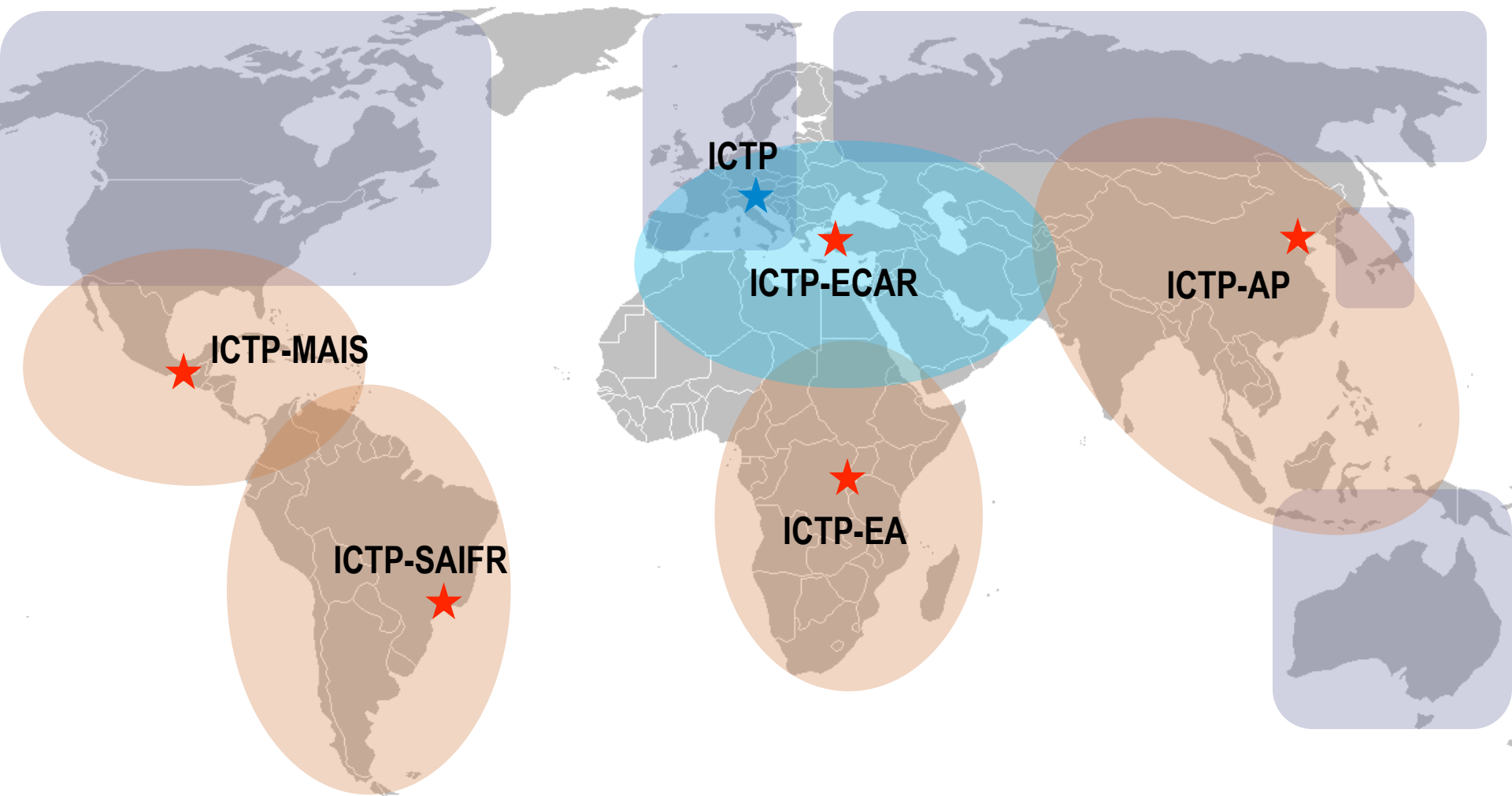
The Abdus Salam
**International Centre
for Theoretical Physics**
50th Anniversary 1964 – 2014

06 – 09 October 2014
Trieste



Where?

New Partner Institutes



Region

ICTP



- Eastern Europe
- Balkans
- Black Sea
- Near Asia
- Middle East
- North Africa

ICTP-ECAR



- Scientific culture and institutions are not well established in most of the countries
- Political and economic instabilities

Turkey

- **Candidate country for EU**
- **Democracy**
- **Economy**
- **Easy access (location, visa)**
- **# of universities increased from 70 to 180 (last decade)**
- **Ambitious goals for the next decade**
 - **Spend 3% GDP on R&D (0.86% in 2011)**
 - **FTE R&D personnel 300.000 (just 78.000 in 2011)**
 - **Internationalization of Higher Edu. and Research Area**



ICTP-ECAR

Izmir Institute of Technology





Established: **1992**

Medium of instruction: **English**

One of the two «Institutes of Technology» in Turkey

Focus: **Research and Graduate Studies**

Three faculties and a Graduate School
Science, Engineering, Architecture

Relatively small:

4000 students (2700 ug, 1300 gr)

190 faculty members

Among top 5 universities in several indicators





ICTP – Eurasian Centre
for Advanced Research

When?

ICTP-ECAR Milestones

Jan. – Apr. 2012: Initial contacts with ICTP

17 May 2012: ICTP Deputy Director visits IZTECH

Jun. 2012: ICTP administration approves IZTECH bid for cooperation

12 Sep. 2012 : MoU between ICTP and IZTECH

11 Oct. 2012 : ICTP-ECAR web site is set

5 Nov. 2012 : Steering Committee formed

7 Dec. 2012 : Acting Director assigned

Dec. 2012 – Mar. 2013: A «Feasibility Report» prepared, with funding from IZKA

22 Apr. 2013: Scientific Council formed



A screenshot of the ICTP-ECAR website. The top navigation bar includes "About ICTP", "Research", "Programmes", "Scientific Calendar", and "Visit ICTP". Below this is a secondary navigation bar with "Directorate", "Mission & History", "Governance", "Prizes & Awards", and "Media Centre". The main content area features a large aerial photograph of the IZTECH campus. Below the photo, there is a "News Highlights" section with a "News archive" link. The main headline is "ICTP in Eurasia" with a sub-headline "New agreement to establish regional research centre in Turkey" dated 13/09/2012. The text describes the agreement between ICTP and IZTECH to create an "ICTP – Eurasian Centre for Advanced Research (ICTP – ECAR)". A photograph of Mustafa Guden and Fernando Quevedo is included with their names and titles. The bottom of the page features logos for IZTECH and ICTP.



Memorandum of Understanding

To foster the advancement of basic sciences in Eastern Europe and Near Asia (in particular, Balkan, Black Sea, Inner Asia, Middle East and Northern Africa) countries, the International Centre for Theoretical Physics (ICTP, Trieste-Italy), a United Nations organization working under the umbrella of the United Nations Educational, Scientific and Cultural Organization (UNESCO), and the Izmir Institute of Technology (IZTECH, Izmir-Turkey) will collaborate towards the creation of an "ICTP – Eurasian Centre for Advanced Research (ICTP – ECAR)". This collaboration will take place along the following principles:

ICTP-ECAR Milestones

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ictp-ecar.org

The screenshot shows the homepage of the ICTP – Eurasian Centre for Advanced Research. The header includes the organization's name and a search bar. A navigation menu contains links for Home, About, Research, Events, Resources, People, Visitors, and Contact. The main banner features a large photograph of the IZTECH campus with the ICTP logo and the text 'International Centre for Theoretical Physics'. Below the banner, there is a news section titled 'ICTP-ECAR Inauguration Conference' with a sub-headline 'ICTP-ECAR Inauguration Conference was held in Izmir Institute of Technology, Izmir, Turkey, from May 5 to 7, 2014.' To the right of the news section is a sidebar with 'APPLY NOW' and 'LIVE STREAM' buttons. The 'APPLY NOW' section includes a link to an 'Advanced Workshop on Landau-Zener Interferometry and Quantum Control in Condensed Matter' held from 29/09/2014 to 03/10/2014. The 'LIVE STREAM' section shows a video player with a play button.

ICTP-ECAR Milestones



**ICTP - Eurasian Centre
for Advanced Research**

May 5-7, 2014
Inauguration Conference
IZTECH Library Conference Hall

<http://ictp-ecar.org>

May 5, 2014 - 15.00 **Opening Ceremony**
May 6-7, 2014 - 09.30 **Invited Talks**



ictp-ecar.org



What?

ICTP-ECAR



The Abdus Salam
International Centre
for Theoretical Physics



- ICTP-ECAR is an international research and training centre, where high quality scientific research will be conducted and shared.
- Its organisation and activities are modelled based on those of ICTP.



Organisation and Governance

Scientific Staff



- «Permanent» Researchers (Limited number, 4-5)
(open to global applications, evaluated by international «Search Committees»)
Coordination of scientific activities, in-house research.
- Associate Members (long-term visits to the Centre for several years)
- Sabbatical program members (6-12 months)
- Postdoctoral Fellows
- Visiting scientists (short and long term)

Roles of IZTECH and ICTP



IZTECH;

- Representative in Steering Committee
- In the initial stages of the Centre, IZTECH will provide required office space, administrative and scientific positions, and infrastructure for the activities of the Centre.



ICTP;

- Will participate in a decision-making capacity in the creation and operations of the Centre.
- Represented in Ste. Com. and Sci. Coun.
- International umbrella
- Will cooperate in fund raising, the organization of activities at all levels and sponsoring of the visitors from the least developed countries of the region.

Governance

- **Steering Committee (3-6 members)**
 - i) Repr. of sponsoring gov. bodies
 - ii) ICTP director or repr.
 - iii) IZTECH rector or repr.
 - iv) Scientists repr. the region

- **Director (will be appointed by Ste. Com.)**
 - Deputy Director

- **Scientific Council**
(9-12 Internationally recognized scientists)



**((ICTP – Eurasian Centre
for Advanced Research))**

Who?

ICTP-ECAR Steering Committee

Members:

(Ex-officio)



Fernando Quevedo
(ICTP Director) Chairman



Efthimios Kaxiras
(Harvard University)



Serdar Sariçiftçi
(Johannes Kepler University)



Cumrun Vafa
(Harvard University)



Mustafa Güden
(IZTECH Rector)



UNESCO Representative
(Prospective)

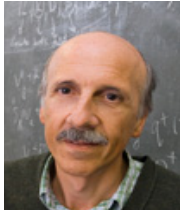


Coordinator:
Seifallah Randjbar-Daemi
(ICTP)

ICTP-ECAR Scientific Council



Gabriel Aeppli (Chair)
(Director, London Ctr. for Nanotech.,
Uni. College London, Fel. Royal Society)



Ignatios Antoniadis
(CERN Head of Theory Division)



Baha Balantekin
(U. Wisconsin-Madison, ECT* Sci Cou.
Chair, 2001 TÜBİTAK Sci. Award)



Nihat Berker
(Sabancı U. Rector, MIT Emeritus Prof.,
1988 TÜBİTAK Sci. Award)



Athanasios Fokas
(University of Cambridge)



Ramin Golestanian
(University of Oxford)



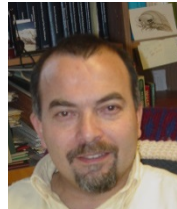
Rahmi Güven
(Boğaziçi U., ICTP Senior Assoc. Member,
1999 TÜBİTAK Sci. Award)



Klaus von Klitzing (Nobel Laureate)
(Director, Max Planck Inst. Stuttgart)



Seifallah Randjbar-Daemi
(ICTP, HEP Section)



Mehmet Sarıkaya
(Director, GEMSEC on Bioengineering
Material Science, U. Washington)



Manfred Sigrist
(ETH Zürich, Director Inst Theo. Phys.)



Activities 2014

- Inauguration Conference
- Summer School
- Advanced Workshop
- Seminars
- Colloquia

ICTP-ECAR Inauguration Conference

5-7 May 2014

Participation:

Members of the Steering Committee and Scientific Council of ICTP-ECAR, representatives of local and national political and scientific bodies, as well as scientists from the region.

12 Invited Talks by

Mehmet Sarıkaya, *University of Washington*

Ramin Golestanian, *University of Oxford*

Allan MacDonald, *University of Texas at Austin*

Serdar Sariçiftçi, *Johannes Kepler University of Linz*

Manfred Sigrist, *ETH Zurich*

Rahmi Güven, *Bogazici University*

Baha Balantekin, *University of Wisconsin-Madison*

Ignatios Antoniadis, *CERN*

Vahid Karimipour, *Sharif University of Technology*

Gabriel Aeppli, *London Centre for Nanotechnology*

Efthimios Kaxiras, *Harvard University*

Klaus von Klitzing, *MPI-Stuttgart*

ICTP-ECAR Inauguration Conference

5-7 May 2014



ICTP-ECAR Inauguration Conference

5-7 May 2014



ICTP-ECAR Inauguration Conference

5-7 May 2014



ICTP-ECAR Inauguration Conference

5-7 May 2014



Summer School

23-31 August 2014

II. International Summer School on Exact and Numerical Methods for Low-Dimensional Quantum Structures

Lecturers

- Natan Andrei (Rutgers University, New Brunswick, USA)
Hans-Peter Eckle (University of Ulm, Germany)
Frank Göhmann (Bergische University, Wuppertal, Germany)
Balazs Hetényi (Bilkent University, Ankara, Turkey)
Örs Legeza (Wigner Institute, Budapest, Hungary)
Bernhard Nienhuis (Free University of Amsterdam, Holland)
Itzhak Roditi (Centro Brasileiro de Pesquisas Físicas, Brazil)
Lea Santos (Yeshiva University, New York, USA)

Summer School

23-31 August 2014

II. International Summer School on Exact and Numerical Methods for Low-Dimensional Quantum Structures



Advanced Workshop

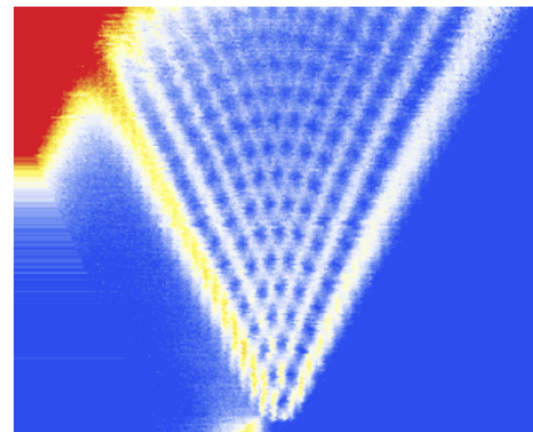
29 September – 03 October 2014

Advanced Workshop on Landau-Zener Interferometry and Quantum Control in Condensed Matter



Advanced Workshop on Landau-Zener Interferometry
and Quantum Control in Condensed Matter

Abstract Book



29 September - 3 October 2014, İzmir, Turkey



ictp-ecar.org

Advanced Workshop

29 September – 03 October 2014

Advanced Workshop on Landau-Zener Interferometry and Quantum Control in Condensed Matter

Organizing Committee:

Immanuel Bloch (LMU & MPQ, Germany)

Mikhail Kiselev (ICTP, Italy)

Stefan Ludwig (LMU, Germany)

Peter Nalbach (U Hamburg, Germany)

IZTECH (local organizers)

Ozgur Cakir

Devrim Guclu

Tugrul Senger

Haldun Sevincli

Advanced Workshop

29 September – 03 October 2014

Advanced Workshop on Landau-Zener Interferometry and Quantum Control in Condensed Matter

Invited Speakers:

- Dimitris Angelakis (TU Crete, Greece + Center for Quantum Technologies, Singapore)
- Alexander Atland (Institute for Theoretical Physics, University of Cologne, Germany)
- Pierre Barthelemy (TU Delft, the Netherlands)
- Guido Burkard (University of Konstanz, Germany)
- Aashish Clerk (McGill University, Canada)
- Yuval Gefen (Weizmann Institute of Science, Israel)
- Steven Girvin (Yale University, USA)
- Peter Hänggi (Universität Augsburg, Germany)
- Andreas Hemmerich (Institut für Laserphysik, Universität Hamburg, Germany)
- Menderes Iskin (Koç University, Turkey)
- Sigmund Kohler (Instituto de Ciencia de Materiales de Madrid, Spain)
- Mikhail Lukin (Harvard University, USA)
- Florian Marquardt (Institute for Theoretical Physics II / University of Erlangen-Nuremberg, Germany)
- Gilles Montambaux (Université Paris-Sud, France)
- Oliver Morsch (University of Pisa, Italy)
- Mehmet Ozgur Oktel (Bilkent University, Turkey)
- William D. Oliver (MIT, USA)
- Jukka Pekola (Aalto University, Finland)
- Thomas Pohl (Max-Planck-Institute for the Physics of Complex Systems, Germany)
- Anatoli Polkovnikov (Boston University, USA)
- Andrew Sachrajda (National Research Council of Canada, Canada)
- Ulrich Schneider (Ludwig-Maximilians-Universität, Germany)
- Tim Taminiau (TU Delft, the Netherlands)
- Richard J. Warburton (University of Basel, Switzerland)
- Eva Weig (University of Konstanz, Germany)
- Sergey Shevchenko (Kharkov State University, Ukraine)

Advanced Workshop

29 September – 03 October 2014

Advanced Workshop on Landau-Zener Interferometry and Quantum Control in Condensed Matter

Quotations from the Organizers:

«As far as I can tell everything went very well.»

«I believe it was a great success! The local organization was close to perfect. Little imperfections are not important.

... I am very happy with our workshop. We have had great talks by great speakers at a great site.»

«I think the workshop was just great. Scientifically, the talks and specifically the discussions in the breaks and evenings were very good and constructive.»

Colloquium

ICTP – Eurasian Centre
for Advanced Research

COLLOQUIUM

ASSESSMENT AND DESIGN OF MATERIAL SYSTEMS FOR ENERGY HARVESTING, CONVERSION AND STORAGE



Prof. Tahir Cagin
Department of Materials Science and Engineering,
Texas A&M University, USA

Abstract
Computational Science (in Physics, Chemistry, Materials Science, Engineering) has emerged as one of the main pillars of research and development efforts over the past few decades.
The talk will discuss materials science of materials for renewable energy applications, with examples from thermoelectrics, piezoelectrics, thermal management and fuel cells. Furthermore, in this talk we will address the role of nano-structuring on improving the efficiency of the materials for these applications.

13 October 2014, Monday
10³⁰ – 12⁰⁰
IZTECH Library Conference Hall

ICTP – Eurasian Centre for Advanced Research (ICTP – ECAR) www.ictp-ecar.org ICTP IYTE

Next week!

5-6 colloquia per year

Functions of ICTP-ECAR

Research

Permanent Researchers

Postdoctoral Fellows

Associate Members

Sabbatical Program

Education/Training

Advanced Graduate Courses

Short courses

Summer schools

Interaction

Conferences

Workshops

Research Networks

Short-term visits

Seminars

Colloquia

Final Remarks

- The new partner institutes should be «Centres of Excellence».
- Consolidation of them is a priority (ICTP Strategic Plan 2015-19).
- Quality of the activities is more important than their quantity.
- Securing sustainable funding is necessary.
- «Autonomy»
Realization of the motto “run by scientists for scientists” is crucial.
- ICTP-ECAR’s success will trigger establishment of similar national and international institutes in the region.
- It is a long and challenging process!

Year 2064



Centennial Celebration
1964 – 2064
Trieste



50th Anniversary
2014 – 2064
İzmir

THANK YOU

Year 2064



Centennial Celebration
1964 – 2064



50th Anniversary
2014 – 2064

Izmir Institute of Technology



Organizers

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ICTP-ECAR Staff

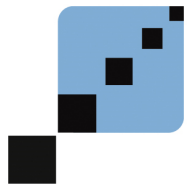
- Tina Beşeri
- Koray Sevim
- Ahmet Gözükara



ICTP – Eurasian Centre
for Advanced Research



Workshop Sponsors



CeNS

Center for NanoScience | LMU





The Abdus Salam
International Centre
for Theoretical Physics

www.ictp.it



IAEA
International Atomic Energy Agency

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ICTP is...

supporting science in the developing world

ICTP 50 Years of Science for the Future

Anniversary Celebration
6th to 9th October 2014
Trieste



Partner Institutions

- ICTP-SAIFR (Brazil)
- ICTP-MAIS (Mexico)
- **ICTP-ECAR (Turkey)**
- ICTP-AP (China)
- ICTP-Africa (Rwanda)

