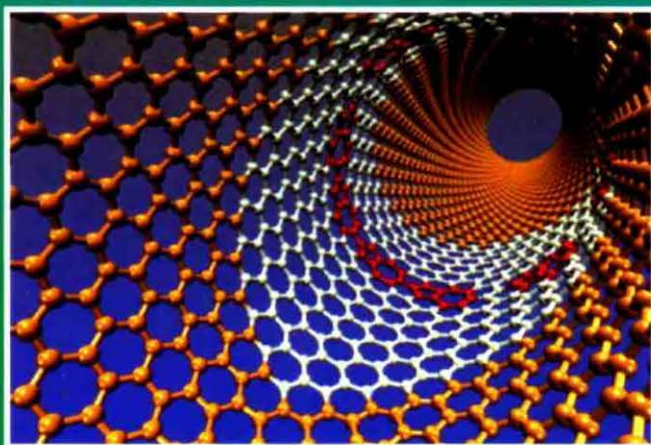
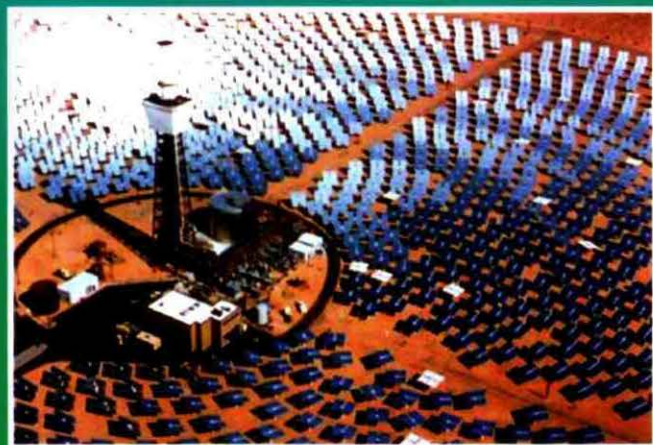


**Advanced Research Workshop on Recent Trends  
and Prospects for Renewable Energy:  
From low-dimensional functional materials to  
innovation management**

*October 2-3, 2012, Tashkent, Uzbekistan*



**Organizers:**

Small Grant Program of the Embassy of United States of America in Tashkent  
Uzbekistan Physical Society  
Institute for Applied Physics  
Turin Polytechnic University in Tashkent

**Advanced Research Workshop on  
Recent Trends and Prospects  
for Renewable Energy:**  
*From low-dimensional functional materials  
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**PROGRAM**

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## **Day 1, October 2**

- 9:00-10:00      *Registration and coffee*
- 10:00-10:40    *Opening Ceremony:*  
*Welcome speech: Davron Matrasulov, Representative of the U.S. Embassy, Franco Lombardi.*

### **Morning Session**

**Chair:** *Seth Darling*

- 10:40-11:20    *Romen Zakhidov, Current status of RES in Uzbekistan.*
- 11:25-12:05    *Takuo Okuchi. Storage of molecular hydrogen into leaky clathrate hydrate cages.*
- 12:10-12:50    *Erkin Matjanov, Possibilities of retrofit of the existing thermal electric power plants with using solar technologies.*

### **Lunch break (13:00-14:30)**

### **Afternoon Session**

**Chair:** *Romen Zakhidov*

- 14:30-15:10    *Anvar Anarbaev, Solving the problems of ecological safety in Uzbekistan's heat power engineering on the basis of solar-fuel technologies.*
- 15:15-15:55    *Nizamiddin Rahmanov, Using fuel granules in boilers for the hot water and heat supply.*

### **Coffee Break (16:00-16:30)**

- 16:30-17:10    *Atabek Atamuratov, Prospects For Biomass as a Renewable Energy Source In Rural Areas In Uzbekistan.*
- 17:10-17:30    *Rasul Akbarov, Big Solar Furnace at the Parkent Station as a Unique Equipment for Conducting of Innovative Research*

## Day 2, October 3

### Morning Session

**Chair:** Takuo Okuchi

- 9:00-9:40 Seth Darling, *The Solar Energy: Challenge and Recent Developments in Organic Photovoltaics.*
- 9:45-10:25 Mukhtar Saidov, *Prospects for Semiconductor Photovoltaics in Uzbekistan.*

### **Coffee Break (10:30-11:00)**

- 11:00-11:40 Sergey Maksimov, *Thermoelectric Phenomena in Small Granulated Semiconductors.*
- 11:45-12:05 Dilnoza Elmurotova, *Photoconductivity of ZnSe-ZnO: O, ZnSe(0.2-0.5%Te)/ZnO Nanoheterostructure and ZnSe(0.2%Te)/ZnO:O Nanoheterojunction After Proton Irradiation.*
- 12:05-12:25 Dilnoza Tashmukhamedova, *Optical Properties of GaAs/CaF<sub>2</sub> Nanofilms With Variable Thickness*

### **Lunch break (13:00-14:30)**

### Afternoon Session

**Chair:** Davron Matrasulov

- 14:30-15:10 Ramiz Muminov, *Current Status and Prospects for Increasing of Efficiency of Silicon Monocrystal Solar Cells.*
- 15:15-15:55 Abugafur Mamadalimov, *Cotton Fiber as a Semiconductor Material.*

### **Coffee Break (16:00-16:30)**

- 16:30-17:10 Pierluigi Leone, *A comparative assessment on hydrogen production from low- and high-temperature electrolysis*
- 17:10-17:40 Boris Oksengendler, *Multiple Exciton Generation In Quantum Dot Solar Cells.*

# **BOOK OF ABSTRACTS**

## **Recent Trends and Prospects for Renewable Energy: *From low-dimensional functional materials to innovation management***

### **Topics:**

**Particle, heat and information transport in low-dimensional nanomaterials**

**Third generation solar cells on the basis of low-dimensional materials**

**Hydrogen storage using nanomaterials**

**Thermoelectricity on nanomaterials**

**Micro hydropower stations as the effective source for alternative energy**

**Environmental aspects for renewable energy**

**Biomass energy conversion**

**Innovation management in renewable energy**

**Solar power concentration**