

## TRAINING SEMINAR

September 8 – 9, Sofia

MONDAY, SEPTEMBER 8

9:00 – 9:30 OFFICIAL OPENING

SESSION 1: Metal Oxide Thin Films – Novel Technologies and Applications

9:30 – 10:10

**F. Hamelmann** (*Bielefeld University of Applied Sciences, Germany*) Metal oxide thin films for improved photovoltaic solar energy conversion

10:10 – 10:50

**J. Weicht** (*Bielefeld University of Applied Sciences, Germany*) Solar cells based on a-Si and a-Si/ $\mu$ c-Si - modeling of light-induced degradation.

11:00 – 12:00 Visit of Central Laboratory of Solar Energy and New Energy Sources

12:00 – 14:00 LUNCH

14:00 – 16:30 Visit of Institute of Solid State Physics laboratories

TUESDAY, SEPTEMBER 9

SESSION 2: Metal oxide films – Novel Technologies and Applications

9:30 – 10:10

**B. Stefanov** (*Uppsala University*) Improved photocatalytic activity of nanostructured metal oxide thin films

10:10 – 10:50

**S. Boyadjiev** (*Technical University, Sofia; Budapest University of Technology and Economics, Hungary*) Photocatalytic and gas sensing properties of transition metal oxides nanocomposites prepared by ALD

11:00 – 12:00 Visit of the Institute of Solid State Laboratories

12:00 – 14:00 LUNCH

14:00 – 16:30 Social tour in Sofia area – visit historical and cultural places

INERA

Research and Innovation Capacity  
Strengthening of ISSP-BAS  
in Multifunctional Nanostructures  
REGPOT-2012-2013-1



### ORGANIZING COMMITTEE

Chairperson: **K. Gesheva**

Secretary: **A. Szekeres**

Members:

**T. Ivanova**

**R. Kamburova**

<http://www.issp.bas.bg>

<http://www.inera.org>

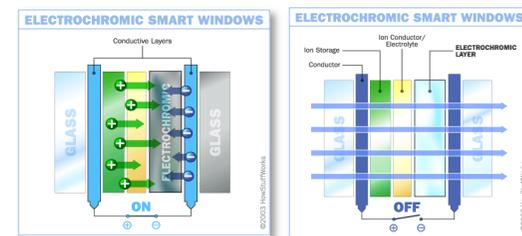
INERA WORKSHOP

Transition Metal Oxide Thin  
Films

*Functional Layers in “Smart Windows”  
and Water Splitting Devices:  
Technology and Optoelectronic  
Properties*

September 4 – 6, 2014

Varna, Bulgaria



Organized by

Institute of Solid State Physics

Bulgarian Academy of Sciences in the frame  
of FP7 Project REGPOT 316309 INERA

## THURSDAY, SEPTEMBER 4

**9:00 – 9:30 OFFICIAL OPENING**

**SESSION A: Metal oxide films - functional layers in energy efficient devices**

*Chairperson: F. Hamelmann*

**9:30 – 10:10**

**G. Niklasson** (*Uppsala University, Sweden*)

Functional vanadium oxide thin films: electronic, optical and thermochromic properties

**10:10 – 10:30 COFFEE BREAK**

**10:30 – 11:10**

**K. Gesheva** (*CLSENES, Bulgaria*)

CVD-transition metal oxide coatings for electrochromic “Smart windows”

**11:10 – 11:50**

**M. Aleksandrova** (*Technical University of Sofia, Bulgaria*)

Oxide coatings on flexible substrates for electrochromic applications

**12:00 – 14:00 LUNCH**

**SESSION A**

*Chairperson: K. Gesheva*

**14:00 – 16:00 Short presentation of young participants in Poster Session A**

**16:30 – 17:00 COFFEE BREAK**

**17:00 – 18:30 Poster Session A**

## FRIDAY, SEPTEMBER 5

**SESSION B: Photocatalysts and chemical sensing**

*Chairperson: G. Niklasson*

**9:00 – 9:40**

**L. Osterlund** (*Uppsala University, Sweden*)

Photocatalytic oxide films in the built environment

**9:40 – 10:20**

**I. Szilagy** (*Budapest University of Technology and Economics, Hungary*)

Nanostructured photocatalysts by Atomic Layer Deposition (ALD)

**10:20 – 10:40 COFFEE BREAK**

**10:40 – 11:20**

**G. Popkirov** (*CLSENES, Bulgaria*)

Thin oxide films electrodes for photocatalytic water splitting

**11:20 – 12:00**

**I. Mihailescu** (*National Institute for Lasers, Plasma and Radiation Physics, Romania*)

Pulsed laser deposition of thin oxide films for applications in chemical sensing and biological pollution

**12:00 – 14:00 LUNCH**

**SESSION C: Novel thin film technologies and applications**

*Chairperson: L. Osterlund*

**14:00 – 14:40**

**F. Hamelmann** (*Bielefeld University of Applied Sciences, Germany*)

Transparent conductive oxides in thin film photovoltaics

**14:40 – 15:20**

**E. Iordanova** (*ISSP, Bulgaria*)

Femtosecond lasers - new technological opportunities

**15:20 – 15:40 COFFEE BREAK**

**15:40 – 18:00 Short presentation of young participants in Poster Sessions B and C**

**18:00 – 19:30 Poster Sessions B and C**

## SATURDAY, SEPTEMBER 6

**SESSION D: Methods of thin films characterization**

*Chairperson: G. Popkirov*

**9:30 – 10:10**

**V. Ivanov** (*University of Sofia, Bulgaria*)

Modern applications of Raman Spectroscopy

**10:10 – 10:50**

**A. Szekeres** (*ISSP, Bulgaria*)

Application of Ellipsometry in studies of metal oxide thin films

**10:50 – 12:00 Student awards  
CLOSING**

**12:00 – 14:00 LUNCH**

**14:00 – 19:00 FREE TIME, SOCIAL EVENT**

**19:00 GALA DINNER**