

# SOLID STATE SURFACES AND INTERFACES 2006

19 - 24 November 2006 Smolenice Castle, Slovakia

|                      |  |  |   |         |
|----------------------|--|--|---|---------|
| <b>14.30</b>         | <b>Arrival of conference bus to the castle, accomodation in the castle rooms</b> |  |   |         |
| <b>16.00 - 16.10</b> | <b>Opening</b>   |  |   |         |
| <b>Chairman:</b>     | <b>Prof. Jacek Szuber</b>  |  |   |         |
| 16.10 - 16.55        | Makabe. T.   | Plasma Surface Processes under competition among charging, deposition, and etching   | Keio University, Japan                        | Invited |
| 16.55 - 17.40        | Nakazawa T.  | Nano-structure of anisotropic pitch based carbon materials   | Nagano National College of Technology, Japan  | Invited |
| <b>17.40 - 17.55</b> | <b>Coffee and tea break</b>  |  |   |         |
| 17.55 - 18.40        | Chromik Š.   | The influence of the deposition parameters on the structural properties of MgO fil= ms grown on GaAs substrate             | Institute of Electrical Engineering, Slovakia | Invited |
| 18.40 - 19.10        | Bujdaacutek J.   | Format= ion of dye supramolecular assemblies on the surface of clay minerals: Effect = of the layer charge of the template | Institute of Inorganic Chemistry              |         |
| <b>19.30 - 21.00</b> | <b>Supper</b>  |  |   |         |
| <b>21.00 - 22.30</b> | <b>The round table discussion</b>  |  |   |         |

| <b>Monday, 20 November, 2006</b> |                               |   |   |         |
|----------------------------------|-------------------------------|---|---|---------|
| <b>7.30 - 8.30</b>               | <b>Breakfast</b>              |   |   |         |
| <b>Chairman:</b>                 | <b>Prof. Toshiaki Makabe</b>  |   |   |         |
| 8.30 - 9.15                      | Kobayashi H.                  | Two-step nitric acid oxidation of Si and SiC (NAOS) method for the formation of SiO <sub>2</sub> /Si and SiO <sub>2</sub> /SiC structures at 120 °C | ISIR, Osaka University, Japan               | Invited |
| 9.15 - 10.00                     | Szuber J.                     | XPS Studies of Surface Chemistry of Clean and Ag-doped L-CVD SnO <sub>2</sub> = Thin Films  | Silesian University of Technology, Poland   | Invited |
| 10.00 - 10.45                    | Hasegawa H.                   | Understanding and Control of Group-III Nitride Surfaces for Power Electronics and Sensor Electronics  | Hokkaido University, Japan                  | Invited |
| <b>10.45 - 11.00</b>             | <b>Coffee and tea break</b>   |   |   |         |
| 11.00 - 11.30                    | Kuhn P.                       | Plasma and thermally activated CVD of nanostructured Titanium oxide and nitride coatings  | Leibniz-Institute of New Materials, Germany |         |
| 11.30 - 11.50                    | Flickyngerová S.              | Influence of ion bombardment on TCO thin film surfaces  | Slovak University of Technology, Slovakia   |         |
| <b>11.50 - 13.00</b>             | <b>Lunch</b>                  |   |   |         |
| <b>Chairman:</b>                 | <b>Prof. Hikaru Kobayashi</b> |   |   |         |
| 13.00 - 13.45                    | Majková E.                    | Magnetic nanoparticles: structure and properties  | Institute of Physics, SAS, Slovakia         | Invited |
| 13.45 - 14.30                    | Takahashi M.                  | Semiconductor surface cleaning and passivation by the chemical treatment in solutions of hydrogen cyanide   | ISIR, Osaka University, Japan               | Invited |
| 14.30 - 15.00                    | Chand S.                      | Current voltage characteristics of Schottky diode with an interfacial layer   | National Institute of Technology, India     |         |
| <b>15.00 - 15.15</b>             | <b>Coffee and tea break</b>   |   |   |         |
| 15.15 - 16.00                    | Horváth Zs. J.                | Non-volatile memory structures with embedded semiconductor nanocrystals   | Hungarian Academy of Sciences, Hungary      | Invited |

|                      |                             |   |  |         |
|----------------------|-----------------------------|---|--|---------|
| 16.00 - 16.30        | Kasikov A.                  | Optical inhomogeneity model for evaporated $Y_2O_3$ from physical thickness measurement   | University of Tartu, Estonia                     | Invited |
| 16.30 - 16.50        | Halahovets Y.               | Correlation between X-ray reciprocal space maps and magnetic properties of current induced magnetization switching pseudo spin valve structures | Institute of Physics SAS, Slovakia=              |         |
| <b>16.50 -17.05</b>  | <b>Coffee and tea break</b> |   |  |         |
| <b>Chairman:</b>     | <b>Dr. Heike Angermann</b>  |   |  |         |
| 17.05 - 17.35        | Leporis M.                  | Test implantations of Na ion beam to Si target  | BIONT, Slovakia                                  |         |
| 17.35 - 17.55        | Machač P.                   | Stability of Ni metallizations on SiC   | Institute of Chemical Technology, Czech Republic |         |
| 17.55 - 18.15        | Mikula M.                   | Structural properties of $SiO_x$ layer deposited on flexible PET foil   | FCHFT, Slovak University of Technology, Slovakia |         |
| <b>19.30 - 22.30</b> | <b>Welcome party</b>        |   |  |         |

| <b>Tuesday, 21 November, 2006</b> |                                  |   |   |         |
|-----------------------------------|----------------------------------|---|---|---------|
| <b>7.30 - 8.30</b>                | <b>Breakfast</b>                 |   |   |         |
| <b>Chairman:</b>                  | <b>Prof. Hideki Hasegawa</b>     |   |   |         |
| 8.30 - 9.15                       | Angermann H.                     | Wet-chemical passivation of atomically flat and structured silicon substrates   | Hahn-Meitner-Institut, Germany  | Invited |
| 9.15 - 10.00                      | Bezák V.                         | Tunneling through randomly inhomogeneous barriers   | Comenius University, Slovakia   | Invited |
| <b>10.00 - 10.15</b>              | <b>Coffee and tea break</b>      |   |   |         |
| 10.15 - 10.45                     | Ilkovič V.                       | Magnetization reorientation in ultra-thin ferromagnetic films   | Technical University Kosice, Slovakia   |         |
| 10.45 - 11.05                     | Kirichenko O.                    | Electron transport in multilayer structures in a strong magnetic field  | B.Verkin Institute for Low Temperature Physics and Engineering of the National Academy of Science of Ukraine, Ukraine |         |
| 11.05 - 11.25                     | Kopani M.                        | Infrared spectroscopy of $Si_mH_n$ clusters a-Si:H/c-Si structures  | Faculty of Medicine, Comenius University, Slovakia  |         |
| <b>11.30 - 13.00</b>              | <b>Lunch</b>                     |   |   |         |
| <b>Chairman:</b>                  | <b>Prof. Dietrich R. T. Zahn</b> |   |   |         |
| 13.00 - 13.45                     | Ivančo J.                        | Relations between electronic, morphological, and structural properties of sexithiophene films and associated interfaces | Karl-Franzens University Graz, Austria  | Invited |
| 13.45 - 14.30                     | Jurečka S.                       | Solution of the optical parameters of the thin film systems and interfaces  | FEE Žilina University, Slovakia   | Invited |
| <b>14.30 - 14.45</b>              | <b>Coffee and tea break</b>      |   |   |         |
| 14.45 - 15.15                     | Konenkova E.                     | Suppression of crack generation in GaN epitaxy on Si(111) using thin AlN/GaN intermediate layers                        | A.F.Ioffe Physico-Technical institute, Russia   |         |

|                      |  |   |  |  |
|----------------------|--|---|--|--|
| 15.15 - 15.45        | Krstovska D.   | Propagation of a high-frequency acoustic wave in a bulk quasi-2D conductor and in a thin quasi-2D conductive film | Faculty of Natural Sciences and Mathematics, Macedonia |  |
| 15.45 - 16.15        | Đurikovič R.   | Prediction of Optical Properties of Paints  | The University of Saint Cyril and Method, Slovakia     |  |
| <b>16.30 - 23.30</b> | <b>Visit of opera performance in the Slovak National Theatre in Bratislava</b> |   |  |  |
|                      | <b>Opera starts at 19.00; visitors will have dry supper</b>                    |   |  |  |
| <b>18.00 - 19.30</b> | <b>Supper (for participants remaining in the castle)</b>                       |   |  |  |

**Wednesday, 22 November, 2006****7.30 - 8.30****Breakfast****Chairman:****Prof. Peter Bury**

8.30 - 9.15

Fujimoto M.

High-Speed Resistive Switching  
Of Ceramic Oxide Thin FilmsShizuoka  
University,  
Japan

Invited

9.15 - 10.00

Zahn D. R. T.

Molecular Orientation and  
Electronic Properties of Organic  
Molecules on Semiconductor  
SurfacesChemnitz  
University,  
Germany

Invited

**10.00 - 10.15****Coffee and tea break**

10.15 - 10.45

Schauer F.

Photoelectron spectroscopies  
and fluorescence studies of  
polysilanes for nanoresistsTomas Bata  
University in  
Zlin, Czech  
Republic

10.45 - 11.15

Plesch G.

TI-based films prepared on  
chemical way and thallinated in  
open systemFaculty of  
Natural  
Sciences,  
Comenius  
University,  
Slovakia

11.15 - 11.35

Roch T.

High quality MBE Growth of  
 $\text{Al}_x\text{Ga}_{1-x}\text{As}$  - based THz  
Quantum Cascade LasersFMPI,  
Comenius  
University,  
Slovakia**11.45 - 13.00****Lunch / Installation of posters****Chairman:****Prof. Masayuki Fujimoto**

13.00 - 13.45

Pepe G.P.

Nano-layered  
ferromagnet/superconductor  
heterostructures: time-resolved  
femtosecond carrier dynamics  
and photodetector applicationsCNR-INFM  
Coherentia &  
Universita,  
Italy

Invited

13.45 - 14.30

Gmucová K.

Interfaces at nanoscale:  
Electrochemical properties and  
perspectivesInstitute of  
Physics SAS,  
Slovakia

Invited

14.30 - 15.00

Ožvoldová M.

Interface Optimization of  
 $\text{TeO}_2\text{PbCl}_2$  Glasses And Rare  
Earth Dopants in  
Telecommunication GlassesUniversity  
of Trnava,  
Slovakia

15.00 - 15.30

Somogyi K.

A Cathodoluminescence Study of  
Near Surface Defects of  
Diamond Epitaxial Layers and  
Bulk MonocrystalsPrivPer  
(MagSzem),  
Budapest,  
Hungary

|                      |  |   |   |         |
|----------------------|--|---|---|---------|
| 15.30 - 15.50        | Skatkov L.                                       | (will be specified later)   | PCB "Argo",<br>Israel                     |         |
| <b>15.50 - 16.05</b> | <b>Coffee and tea break</b>                      |   |   |         |
| <b>Chairman:</b>     | <b>Prof. Roman Ďurikovič</b>                     |   |   |         |
| 16.05 - 16.50        | Klapetek P.                                      | Near-field scanning optical microscopy studies of thin film surfaces and interfaces | Czech Metrology Institute, Czech Republic | Invited |
| 16.50 - 17.35        | Müllerová J.                                     | On the role of hydrogen in microstructure of hydrogenated silicon thin films        | FEE Žilina University, Slovakia           | Invited |
| 17.35 - 17.55        | Vincze A.  | Characterisation of ZnO Layer Prepared by Pulsed Laser Deposition                   | International Laser Center, Slovakia      |         |
| <b>18.00 - 19.30</b> | <b>Poster session + refreshment</b>              |   |   |         |
| <b>19.30 - 21.30</b> | <b>Picnic inside of the castle fortification</b> |   |   |         |

**Thursday, 23 November, 2006****7.30 - 8.30****Breakfast****Chairman:****Prof. Pepe G.P.**

8.30 - 9.15

Bury P.

Acoustoelectric interaction in  
semiconductor interfacesFEE Žilina  
University,  
Slovakia

Invited

9.15 - 10.00

Gabouze N.

The interest of  
hydrocarbon(CH<sub>x</sub>) layer  
deposition on Silicon and porous  
SiliconUDTS Algiers,  
Algeria

Invited

**10.00 - 10.15****Coffee and tea break**

10.15 - 10.45

Zemek J.

Electron spectroscopy of  
corrugated surfacesInstitute of  
Physics, Czech  
Republic

10.45 - 11.05

Bruncko J.

Growth of ZnO films by Pulsed  
Laser Deposition (PLD)International  
Laser Centre,  
Slovakia

11.05 - 11.25

Drabinská A.

Determination of Polarization  
Charge Concentration on III-  
Nitride Heterostructures  
Interfaces by ElectroreflectanceInstitute of  
Experimental  
Physics,  
Warsaw  
University,  
Poland**11.25 - 11.30****Closing****11.30 - 12.45****Lunch****13.00****Departure of conference bus****Excursion in the afternoon time****Friday, 24 November, 2006****8.00 - 20.00****Trip**



## Poster contributions

| Panel No. |                |  |  |
|-----------|----------------|--|--|
| 1         | Czímerová A.   | Energy transfer between two laser dyes at the surface of clay mineral  | Institute of Inorganic Chemistry SAS, Slovakia   |
| 2         | Čeklovský A.   | Molecular orientation of porphyrine cations on layered silicate surfaces   | Institute of Inorganic Chemistry SAS, Slovakia   |
| 3         | Horváth Zs. J. | Electrical and ellipsometry study of sputtered SiO <sub>2</sub> structures containing Ge or Si nanocrystals  | Research Institute for Technical Physics and Materials Science, Hungarian Academy of Sciences, Hungary |
| 4         | Horváth Zs. J. | Optical and electrical behaviour of germanium nanocrystalline thin films   | Research Institute for Technical Physics and Materials Science, Hungarian Academy of Sciences, Hungary |
| 5         | Horváth Zs. J. | Electrical behaviour of MIS structures with thin chemical oxide  | Research Institute for Technical Physics and Materials Science, Hungarian Academy of Sciences, Hungary |
| 6         | Dujavová A.    | The Role and The Influence of Rhenium on the Properties of Tl-(Re)-Ba-Ca-Cu-O Superconducting Thin Films   | Institute of Electrical Engineering SAS, Slovakia  |
| 7         | Chromik Š.     | Role of the mercury pressure during reaction synthesis of Hg-based superconducting films using no contact mercuration  | Institute of Electrical Engineering SAS, Slovakia  |
| 8         | Pinčík E.      | On formation of ultrathin and very thin oxide films when treated semiconductor surfaces interact with plasmas or low-energy particle beams or liquid solutions | Institute of Physics SAS, Slovakia   |
| 9         | Pinčík E.      | Photoluminescence of very thin oxide/a-Si:H structures passivated in HCN solutions   | Institute of Physics SAS, Slovakia   |
| 10        | Imai S.        | Nitric acid oxidation for the formation of SiO <sub>2</sub> /poly-crystalline Si structure for TFT use   | Sharp Corporation, Nara, Japan   |
| 11        | Brunner R.     | Infrared spectroscopy of a-Si:H thin films   | Institute of Physics SAS, Slovakia   |
| 12        | Rusnák J.      | On the original approach at design of deep level transient spectroscopy equipment  | Institute of Physics SAS, Slovakia   |
| 13        | Somogyi K.     | Some Surface Processes in Epitaxial Growth of III-V Epitaxial Layers in the Presence of Halogens   | PrivPer (MagSzem), Budapest, Hungary   |
| 14        | Somogyi K.     | Optical Waveguide Sensor for Surface Adsorbates Detection  | PrivPer (MagSzem), Budapest, Hungary   |

|    |              |  |  |
|----|--------------|--|--|
| 15 | Somogyi K.   | Effect of Oxygen and Hydrogen Plasma Treatment of the Surface Defect Revealing on Diamond Monocrystals       | PrivPer (MagSzem), Budapest, Hungary                       |
| 16 | Kopáni M.    | Influence of alcohol on mechanical and electrical properties of thin organic films                           | Faculty of Medicine, Comenius University, Slovakia         |
| 17 | Gregor M.    | Nanostructure devices based on the superconducting MgB <sub>2</sub> thin film                                | FMPI, Comenius University, Slovakia                        |
| 18 | Mičunek R.   | Influence of annealing processes on superconducting MgB <sub>2</sub> thin film surface quality               | FMPI, Comenius University, Slovakia                        |
| 19 | Grančič B.   | Microstructural and chemical studies of TiB <sub>2</sub> coatings prepared by DC magnetron sputtering        | FMPI, Comenius University, Slovakia                        |
| 20 | Kozlovská B. | Properties of titanium dioxide thin films prepared by sol-gel technique for sensors                          | FMPI, Comenius University, Slovakia                        |
| 21 | Mikula M.    | Influence of postannealing on structure, hardness and residual stress of TiB <sub>2</sub> superhard coatings | Institute of Materials and Machine Mechanics SAS, Slovakia |
| 22 | Pinčík E.    | On structural properties of a-Si:H, a-SiC:H and a-SiGe:H deposited on c-Si                                   | Institute of Physics SAS, Slovakia                         |