

Book of Abstracts

ICTF 12

12th INTERNATIONAL CONFERENCE ON THIN FILMS

organized by

**SLOVAK VACUUM SOCIETY
SLOVAK ACADEMY OF SCIENCES
SLOVAK UNIVERSITY OF TECHNOLOGY
CZECH VACUUM SOCIETY**

under the auspices of

Jozef Moravčík, Mayor of Bratislava
Štefan Luby, President of Slovak Academy of Sciences
Ludovít Molnár, Rector of Slovak University of Technology in Bratislava

Sponsored by

BRUKER

ON Semiconductor, Rožnov pod Radhoštěm, CR

on behalf

**of the International Union for Vacuum Science, Technique and Applications
IUVSTA**



**September 15 -20, 2002
Bratislava, Slovakia**

SCIENTIFIC PROGRAMME COMMITTEE

J. Verhoeven	FOM AMOLF, The Netherlands	chairman
S. Berg	Uppsala Univ., Sweden	
J. S. Colligon	Manchester Univ., UK	
C. Falcony	CINVESTAV-IPN, Mexico	
Feng Pan	Tsinghua Univ., P.R. China	
J. Greene	Univ. of Illinois, USA	
M. Leisch	Techn. University of Graz, Austria	
Š. Luby	Institute of Physics SAS, Slovakia	
Ph. Martin	CSIRO, Australia	
J. Musil	Univ. of West Bohemia, Czech Republic	
K. Oura	Osaka University, Japan	
G. Radnoczi	KFKI HAS, Hungary	
F. Richter	Univ. Chemnitz, Germany	
J. W. Rogers, Jr.	PNNL, USA	

ORGANIZING COMMITTEE

Š. Luby	Institute of Physics SAS	chairman
E. Majková	Institute of Physics SAS	co-chair
V. Tvarožek	Faculty of Electrical Engineering and Informatics STU	co-chair
Y. Chushkin	Institute of Physics SAS	
V. Dubravcová	Faculty of Electrical Engineering and Informatics STU	
V. Jablonská	Institute of Informatics SAS	
M. Jergel	Institute of Physics SAS	
I. Kostič	Institute of Informatics SAS	
J. Kováčová	Institute of Physics SAS	
J. Liday	Faculty of Electrical Engineering and Informatics STU	
P. Lukáč	Faculty of Mathematics and Physics, Comenius Univ.	
J. Osvald	Institute of Electrical Engineering SAS	
R. Redhammer	Faculty of Electrical Engineering and Informatics STU	

INTERNATIONAL ADVISORY COMMITTEE

Peter Barna,	Budapest, Hungary
Pavel Hedbávný,	Prague, Czech Republic
Ulrich Heinzmann,	Bielefeld, Germany
Siegfried Hofmann,	Stuttgart, Germany
Miroslav Janata,	Rožnov p. Radhoštěm, Czech Republic
František Janíček,	Bratislava, Slovak Republic
Karol Karovič,	Bratislava, Slovak Republic
Subhash C. Kashyap,	New Delhi, India
Alexander Kikineshi,	Uzhgorod, Ukraine
Armando Luches,	Lecce, Italy
Eva Majkova,	Bratislava, Slovak Republic
Henryk Szymczak,	Warsaw, Poland
Masaki Yamamoto,	Sendai, Japan

Sessions

- TF1 Advanced Deposition Techniques**
- TF2 Thin Film Growth**
- TF3 Diagnostics, Structure - Properties Relationship**
- TF4 Mechanical Properties and Stress**
- TF5 Protective and Functional Coatings**
- TF6 Micropatterning and Nanostructures**
- TF7 EUV and Soft X-Ray Multilayers**
- TF8 Magnetic Thin Films and Multilayers**
- TF9 Organic Thin Films**
- TF10 Thin Films for Electronics and Optics**

Sponsored by

Bruker AXS

ON Semiconductor, Rožnov pod Radhoštěm, CR

**Support by IUVSTA-ELSEVIER
for five young participants is acknowledged.**

**We acknowledge also support by Slovak Physical Society
Organizing Committee**

Published by
Institute of Physics, Slovak Academy of Sciences
in VEDA, Publishing House of SAS
Editors: Eva Majkova, Stefan Luby
Bratislava, 2002

Content

PL	PLENARY LECTURES	
PL1	<u>M.C.M. van de Sanden</u> , Department of Applied Physics, Eindhoven University of Technology, 5600 MB Eindhoven, The Netherlands	SURFACE SCIENCE ASPECTS OF THIN AMORPHOUS FILM GROWTH
PL2	<u>M. Martino</u> , Department of Physics, University of Lecce, 73100 Lecce, Italy	PULSED LASER DEPOSITION OF ACTIVE WAVEGUIDES
PL3	<u>P. Zeman*</u> and S. Takabayashi, Toyama Industrial Technology Center, 150 Futagami-machi, 933-0981 Takaoka, Japan, * Current address: Department of Physics, University of West Bohemia, 306 14 Plzen, Czech Republic	NANO-SCALED PHOTOCATALYTIC TiO ₂ THIN FILMS PREPARED BY MAGNETRON SPUTTERING
PL4	<u>Lars Hultman</u> , Thin Film Division, Department of Physics, IFM, Linköping University, S-581 83 Linköping, SWEDEN	STRUCTURE OF CARBON NITRIDE THIN FILMS
PL5	<u>B. Pécz</u> and M.A. di Forte-	ELECTRON MICROSCOPIC

	Poisson, Research Institute for Technical Physics and Materials Science, H-1525 Budapest, P.O.Box 49, Hungary	CHARACTERIZATION OF III-NITRIDE FILMS GROWN BY MOCVD
PL6	J. Keckes, Erich Schmid Institute for Material Science, Austrian Academy of Sciences and Institute of Metal Physics, University of Leoben, Jahnstraße 12, A-8700 Leoben, Austria	MECHANICAL PROPERTIES AND STRESS IN THIN FILMS
PL7	S. Veprek, Institute for Chemistry of Inorganic Materials, Technical University Munich, D-85747 Garching, Germany	SUPERHARD NANOCOMPOSITE COATINGS: THERMO-DYNAMIC DESIGN PRINCIPLE, PROPERTIES AND INDUSTRIAL APPLICATIONS
PL8	J.Patscheider, EMPA (Swiss Federal Laboratories for Materials Testing and Research), CH-8600 Dübendorf, Switzerland	STRUCTURES AN PROPERTIES OF NANODISPERSIVE HARD COATINGS
PL9	M. López-López, a G. Gamez, F. Land, b M. Meléndez, S. Jiménez, and T. Ishikawa, Centro de Investigación y de Estudios Avanzados del IPN,	OPTICAL AND STRUCTURAL PROPERTIES OF QUANTUM STRUCTURES GROWN ON IN-SITU ELECTRON BEAM PATTERNED SUBSTRATES

	Mexico	
PL10	<u>E. Blank</u> , Swiss Federal Institute of Technology (EPFL), Address : EPFL - DMX - LMPH, CH-1015 Lausanne, Switzerland	MEASUREMENT OF THE MECHANICAL PROPERTIES OF LAYERED SYSTEMS
PL11	<u>J. Strümpfel</u> , VON ARDENNE ANLAGENTECHNIK GMBH, Plattleite 19/29, D-01324 Dresden, Germany	REACTIVE DUAL MAGNETRON SPUTTERING FOR LARGE AREA APPLICATION
PL12	<u>R. Dietsch</u> , Fraunhofer Institute Material and Beam Technology, Winterbergstraße 28, D-01277 Dresden, Germany;	PULSED LASER DEPOSITION OF CARBON/CARBON MULTILAYERS
PL13	<u>E. Louis</u> , FOM-Institute for Plasma Physics Rijnhuizen, Edisonbaan 14, 3439 MN Nieuwegein, The Netherlands	THE DEVELOPMENT OF MULTILAYERED OPTICS FOR EXTREME UV LITHOGRAPHY
PL14	<u>Ch. Colliex</u> , D. Imhoff, L. Samet, K. Suenaga, A. Srivastava, S Trasobares, Laboratoire de Physique des Solides, Building 510, Université Paris Sud, 91405	EELS CHARACTERISATION OF NANOLAYERS AND INTERFACES

	Orsay, France	
PL15	<u>V. Holý</u> , G. Bauer, J. Stangl, T. Roch, Masaryk University, Brno, Czech Republic	SELF-ORGANIZATION PROCESSES IN SEMICONDUCTOR HETEROSTRUCTURES
PL16	K. Ouchi and <u>N. Honda</u> , Akita Research Institute of Advanced Technology, Akita City, Japan	MAGNETIC THIN FILMS FOR HIGH DENSITY RECORDING
PL17	<u>R. Resel</u> , Institute of Solid State Physics, Graz University of Technology, Petersgasse 16, A-8010 Graz, Austria	HIGHLY ORDERED GROWTH OF SEXIPHENYL ON AMORHOUS AND SINGLE CRYSTAL SUBSTRATES
PL18	<u>P. Stroeve</u> , NSF Center on Polymer Interfaces and Macromolecular Assemblies (CPIMA), Department of Chemical Engineering and Materials Science, University of California, Davis, 1 Shields Avenue, Davis, California 95616, USA	SURFACE AND ELECTROCHEMICAL PROPERTIES OF SUPPORTED LIPID BILAYERS AND THEIR USE FOR DETECTING ANTIMICROBIAL PEPTIDES
PL19	<u>J. Kovac</u> , Microelectronics Department, Slovak University of Technology, Bratislava, Slovakia	ADVANCED LIGHT EMITTING DEVICE STRUCTURES FOR OPTOELECTRONIC APPLICATIONS

PL20	<u>I. Vavra</u> , Institute of Electrical Engineering, SAS, Bratislava, Slovakia	SUPERCONDUCTING MULTILAYERS AND THEIR APPLICATIONS IN MICROELECTRONICS
PL21	<u>D. Arvanitis</u> , Department of Physics, Uppsala University, Box 530, SE-751 21 Uppsala, Sweden	X-RAY MAGNETIC CIRCULAR DICHROISM ON THIN FILMS

Sessions	Oral Presentations	Posters
Advanced Deposition Techniques	TF1.O	TF1.P
Thin Film Growth	TF2.O	TF2.P
Diagnostics, Structure - Properties Relationship	TF3.O	TF3.P
Mechanical Properties and Stress	TF4.O	TF4.P
Protective and Functional Coatings	TF5.O	TF5.P
Mircopatterning and Nanostructures	TF6.O	TF6.P
EUV and Soft X-Ray Multilayers	TF7.O	TF7.P
Magnetic Thin Films and Multilayers	TF8.O	TF8.P
Organic Thin Films	TF9.O	TF9.P
Thin Films for Electronics and Optics	TF10.O	TF10.P