# Programme of the XII International Conference on Electron Microscopy of Solids

## *SUNDAY 5TH JUNE*

***14:00 – 20:00 Registration***

***20:00 Welcome reception***

## *MONDAY 6TH JUNE*

***09:00 Opening of the conference***

### *Session I*
### *Application of TEM in Materials Science (I)*

**09:15** ***(invited)*** **HAADF-STEM Imaging and Microscopy Observations of GAN-based Violet Laser Diodes**
M. SHIOJIRI

**09:45** ***(invited)*** **Cathodoluminescence in Transmission Electron Microscopy**
H. P. STRUNK

***10:15 - 10:45 Coffee Break***

### *Session II*
### *Application of TEM in Materials Science (II)*

**10:45** ***(invited)*** **In-Situ High Voltage Atomic Resolution Electron Microscopy**
F. PHILLIPP

**11:15** ***(invited)*** **Electron Tomography of Nanoparticles and Nanocrystals**
P.A MIDGLEY, T.J.V. YATES, J.M. THOMAS, I. ARSLAN and J. TONG

***11:45 - 12:00 Break***

### *Session III*
### *Advanced Materials*

**12:00** ***(keynote)*** **The Use of Electron Microscopy in The Research of Inorganic Nanotubes and Inorganic Fullerene-Like Materials**
R. TENNE

**12:15** **HRTEM, EELS and EDS Studies of C-N and C-N-B Nanostructures, Grown in the High Isostatic Pressure Apparatus**
B.A. KULNITSKIY, V.BLANK, E.V.POLYAKOV, D.V.BATOV, U. BANGERT, A. GUTIÉRREZ-SOSA, A. J. HARVEY, and A. SEEPUJAK

***12:30 - 14:00 Lunch Break***

## *Session IV*
## *Electron Diffraction and Crystallography*

**14:00** ***(invited)*** **CBED and LACBED Characterization of Crystal Defects**
J.-P. MORNIROLI

**14:30** **Effects of Surface Relaxation on Convergent Beam Electron Diffraction Analysis of Stress in Si**
A. BENEDETTI, H. BENDER, C. TORREGIANI, and K. MAEX

**14:45** **Transmission Electron Microscopy Used for Crystalline Study in Metallic (Co, Fe, Pb) Phtalocyanines**
A. PONCE, M.E. SÁNCHEZ-VERGARA, M.A. RUIZ-FARFÁN, and M. VALVE

**15:00** ***(invited)*** **Quantitative Phase Analysis of Nanocrystalline Samples Based on SAED**
J.L. LÁBÁR, P.B. BARNA, and G. SÁFRÁN

***15:30 - 16:00 Coffee Break***

## *Session V*
## *New Techniques and Instrumentation - Companies Presentations*

**16:00** **Aberration-Corrected (Scanning) Transmission Electron Microscopy (S)TEM. The Need for Dedicated Platforms**
D. FOORD *(FEI)*

**16:20** **The New Range of JEOL TEM: from Routine Operation to High-End Application Research**
R. RAVELLE-CHAPUIS *(JEOL)*

**16:40** **INCADryCool, New Liquid Nitrogen-free Si(Li) EDS Detectors from Oxford Instruments Analytical**
S. BURGESS and G. FROSCH *(OXFORD INSTRUMENTS)*

**16:55** **New Trends in Scanning Acoustic Microscopy**
P. CZURRATIS *(SAM TEC)*

**17:10** **Trace Analysis in a SEM with Photon Excitation**
A. BJEOMIKHOV, M. HASCHKE, N. KEMF, N. LANGHOFF, R. WEDELL, and H. J. SCHRECK *(IfG - INSTITUTE FOR SCIENTIFIC INSTRUMENTS)*

***18:00 – 19:00*** ***Poster session (P1 - P31)***

# *TUESDAY 7TH JUNE*

## *Session VI*
## *Future of Electron Microscopy*

**09:00** ***(invited)*** **Aberration-Corrected Transmission Electron Microscopy**
K. URBAN, L. HOUBEN, C.L. JIA, and M. LENTZEN

**09:30** ***(invited)*** **Measurement of Stress and Strain at the Nanoscale by Aberration Corrected TEM**
M.J. HŸTCH, F. HOUDELLIER, and E. SNOECK

***10:00 - 10:30 Coffee Break***

## *Session VII*
## *Microanalysis in Electron Microscoope*

**10:30** ***(invited)*** **Wavelength- and Energy-Dispersive EPMA Measurements with Non-Perpendicular Incidence of the Electron Beam**
G.F. BASTIN, P. OBERNDORFF, H. HEIJLIGERS, and J. DIJKSTRA

**11:00** ***(invited)*** **New Developments in Energy-Filtering Transmission Electron Microscopy**
F. HOFER, W. GROGGER, and G. KOTHLEITNER

**11:30 Spatial Resolution of EPMA – Review**
M. ŻELECHOWER

***11:45 - 12:00 Break***

## *Session VIII*
## *Metals and Alloys (1)*

**12:00 Analytical TEM and Electron Diffraction for Characterization of Multiphase Ni-P-Ti Surface Layer on Ti-6Al-4V Alloy**
A. CZYRSKA-FILEMONOWICZ and P.-A. BUFFAT

**12:15 Modulated Structure in Ni-Al-Cr Ordered Intermetallic**
E. JEZIERSKA and M. PILAWA

***12:30 - 14:00 Lunch Break***

## *Session IX*
## *Metals and Alloys (2)*

**14:00 Electron Crystallography Applied to Structure Determination of $Nb(Cu,Al,X)_2$ Laves Phases**
M. GIGLA, J. LELĄTKO, M. KRZELOWSKI, and H. Z. MORAWIEC

**14:15 Structure Evolution under Severe Plastic Deformation of 2014 Aluminium Alloy**
S. BOCZKAL, M. LECH-GREGA, J. SENDERSKI, and B.PŁONKA

***14:30 - 15:15 Coffee Break***

## *Session X*
## *Oxides and sulfides*

**15:15** ***(invited)*** **FIB and TEM Studies of Thin Film Oxide Structure and Crystallization**
R. SINCLAIR

**15:45 Characterization of Nanostructured Binary Molybdenum Oxide Catalysts for Propene Oxidation**
J.B. WAGNER, N.D. OTHMAN, D.S. SU, S.B.A. HAMID, and R. SCHLÖGL

**16:00 Titanium Oxide Fullerenoids**
C. DUCATI, E. BARBORINI, P. MILANI, and P.A. MIDGLEY

**16:15 Influence of Ca Content and Oxygen Partial Pressure on Microstructural Evolution of (Co, Ca)O at Elevated Temperatures**
J. KUSINSKI, L. CIENIEK, G. PETOT-ERVAS, C. PETOT, and G.BALDINOZZI

**16:30 Supported Metal Sulfide Hydrotreating Catalysts Studied by HAADF-STEM**
A. CARLSSON, M. BRORSON, and H. TOPSØE

***17:30 - 18:30 Poster session (P32 – P62)***

***19:30 Country evening***

## *WEDNESDAY 8TH JUNE*

### *Session XI*
### *Electronic Materials (I)*

**09:00 *(invited)* Quantitative HRTEM of Nanostructured Semiconductors**
W. NEUMANN, H. KIRMSE, R. OTTO, and I. HÄUSLER

**09:30 *(invited)* Cathodoluminescence Studies of Nano-Structured Semiconductors**
A. GUSTAFSSON

***10:00 - 10:30 Coffee Break***

### *Session XII*
### *Electronic Materials (II)*

**10:30 Electron Diffraction Studies of Strain Fields in Semiconductor Epilayers**
D. JACOB and A. LEFEBVRE

**10:45 Microstructure and Electrical Properties of Diborides Modified by Rapid Thermal Annealing**
I. RUSAKOVA, W. ZAGOZDZON-WOSIK, C. DARNE, Z.-H. ZHANG, P. VAN DER HEIDE, and P. MAJHI

**11:00 Wing Scale Structures in Butterflies - Natural Photonic Crystals**
Z. VÉRTESY, ZS. BÁLINT, K. KERTÉSZ, G. I. MÁRK, J. P. VIGNERON, V. LOUSSE, and L. P. BIRÓ

***11:15 - 11:30 Break***

## *Session XIII*
## *Specimen Preparation*

**11:30 (invited) Focused Ion Beam - Principles and Applications in Material Science**
H.J. PENKALLA

**12:00 Advances and Problems in Microstructure Characterization of Hard Multilayer Nitride Coatings**
J. MORGIEL, Ł. MAJOR, B. MAJOR, J.M. LACKNER, D. FOORD, L. NISTOR, and G. VAN TENDELOO

**12:15 New Methods of Track Membranes Treatment for Samples Preparation in Observation with SEM**
O. L. ORELOVITCH and P. YU. APEL

***12:30 - 14:00 Lunch Break***

## *Session XIV*
## *Metals and Alloys (3)*

**14:00 *(invited)* Local Structure Studies of Metallic Glasses Using HREM and Electron Diffraction**
Y. HIROTSU, A. HIRATA, and T. OHKUBO

**14:30 The Role of Precipitate Free Zone in Formation and Growth of Discontinuous Precipitation Reaction - Electron Microscopy Study**
P. ZIĘBA

**14:45 Quantitative Misorientation Characteristics of Interphase Boundaries in Composites**
K. SZTWIERTNIA, M. FARYNA, and G. SAWINA

***15:00 - 15:30 Coffee Break***

## *Session XV*
## *Metals and Alloys (4)*

**15:30 Electron Microprobe Study of Microstructure and Composition of High Temperature Synthetic Solid Metal and Liquid Metal**
MENGHUA LIU

**15:45 Characterisation of the Near Surface Layers of Carbon Steels Modified by Interaction with Intense Pulse Plasma Beams. SEM Investigations.**
B.A. SARTOWSKA, J. PIEKOSZEWSKI, L. WALIŚ, J. STANISŁAWSKI, W. SZYMCZYK, L. NOWICKI, and R. RATAJCZAK

**16:00 Microstructure Evolution in Age-Hardenable Aluminium Alloy during Processing by Hydrostatic Extrusion**
M. LEWANDOWSKA and K.J. KURZYDŁOWSKI

***19:30 Conference dinner***

## *THURSDAY 9TH JUNE*

### *Session XVI*
### *Nanophases and Nanostructures*

**08:45** ***(invited)*** **Surface Phenomena Induced by Metal Deposition on Layered Chalcogenides**
W. JÄGER, S. HOLLENSTEINER, E. SPIECKER, F. DIETZ, L. KIPP, H. SCHROEDER, H. GNASER, and W. SIGLE

**09:15** ***(invited)*** **The Limits of Nanophase Identification Using EDS/EELS Spectrometries and Electron Diffraction Techniques**
P.A. BUFFAT

***09:45 - 10:00 Coffee Break***

### *Session XVII*
### *Nanocrystals, Nanostructures and Amorphous Materials*

**10:00 TEM Studies of Structure of Ball Milled and Melt Spun ZrCuAl and NiTiZrCu Alloys**
J. DUTKIEWICZ, M. KUBÍČEK, W.MAZIARZ, M. LEJKOWSKA, T. CZEPPE, and J. MORGIEL

**10:15 Pecularities of Nanocrystal Formation in Rapidly Quenched (FeCo)MoCuB Amorphous Alloys**
M. PALUGA, C. F: CONDE, D. MÜLLER, M. DEANKO, D. JANIČKOVIČ, and P. ŠVEC

**10:30 Identification and Quantification of Microstructures Formed During Nanocrystallization of Amorphous (Fe-Co)Nb(Si-B) Systems**
M. DEANKO, D. M. KEPAPTSOGLOU, D. MULLER, D. JANICKOVIC, I. SKORVANEK, and P. SVEC

**10:45 Well Oriented c-BN Nanocrystals as Studied by HREM**
I. TSIAOUSSIS and N. FRANGIS

***11:00 Closing of the conference***

***12:00 Lunch***

***13:00 Departure (the bus to Warsaw arranged by organizers)***