

**Proceedings of the Symposium A:
Raman Scattering in Materials Science**
in the framework of
the European Materials Research Society Fall Meeting
Warsaw, Poland, September 15–19, 2008

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WARSAW

POLISH ACADEMY OF SCIENCES
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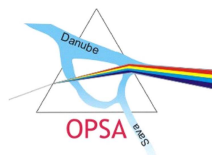
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Preface

Raman spectroscopy is one of the fastest growing analytical techniques in use today. The strong motivation for organizing the symposium in 2008 was to mark 120th birth anniversary of C.V. Raman and 80th anniversary of the discovery of the phenomenon named after him. The conference was focused on the recent progress in the various fields of the Raman scattering spectroscopy investigation of properties of different kind of materials and new Raman techniques.

During Symposium 6 plenary lectures, 22 invited lectures, 14 oral presentations and 31 posters were presented. Among the contributions at the Symposium, the proceedings include 25 papers based on invited lectures, oral presentations and poster contributions. These papers report recent developments in use of the Raman scattering spectroscopy for advanced studies in the areas of new materials, molecular dynamics, semiconductor physics, nanoscience and new Raman method approaches.

We wish to express our gratitude to the members of the Scientific Committee for their significant contribution to the success of the “Symposium A”. We are particularly grateful to Witold Dobrowolski for his help in different phases of conference organization and publishing of the conference proceedings.

Editors of the Proceedings

Conference plenary lecturer

Anant K. Ramdas, Purdue University, Department of Physics, United States: *C.V. Raman and the Impact of Raman Effect in Quantum Physics, Condensed Matter, and Materials Science*

Common plenary lecturers for Symposia A and J

Manuel Cardona, MPI-FKF, Stuttgart, Germany: *Phonon Line Widths and Their Dependence on Temperature and Isotopic Mass*

Michael Krisch, ESRF, Grenoble, France: *Lattice Dynamics Studies by Inelastic X-Ray Scattering*

Wolfgang Kiefer, Uni-Würzburg, Germany: *Raman-Mie Scattering from Spherical Microparticles*

Herre S. Van der Zant, Delft University of Technology: *Vibrational Modes in Suspended Carbon Nanotubes Probed by Transport Measurements*

Konstantin Kikoin, Tel-Aviv University, Israel: *Quantum Tunneling through Moving Nanoobjects*

Invited speakers

Ludovic Bellot-Gurlet, LADIR, CNRS, Université Pierre et Marie Curie, Thiais, France: *Raman Studies of Corrosion Layers Formed on Archaeological Irons in Various Media. From Characterisation to Imaging and Quantification*

Danilo Bersani, Physics Department, University of Parma, Italy: *Micro-Raman/XAS Study of V_2O_5/WO_3 Nanostructured Thin Films for Electro-Chromic Applications*

Andres Cantarero, University of Valencia, Valencia, Spain: *Micro-Raman Scattering in Semiconductor Nanostructures*

Daniel Fausti, University of Groningen, The Netherlands: *Phonon Softening in Bi and Sb: towards the Cubic Phase?*

Milko Iliev, Texas Center for Superconductivity, USA: *Raman Imaging Approach to the Study of Ferroelectric Domains and Raman Spectra of Multiferroic Boracites*

Mile Ivanda, Ruder Boković Institute, Croatia: *Low Frequency Raman Scattering in Characterization of Nanostructured Materials*

Milan Konstantinovic, Studiecentrum voor Kernenergie/Centre d'Etude de l'Energie Nucléaire, Mol, Belgium: *Raman Scattering in the Materials with Strong Electron Correlations*

Gerasimos A. Kourouklis, Aristotle University, Thessaloniki, Greece: *High Pressure Raman Spectroscopy in Carbon Nanotubes*

Peter Lemmens, Inst. of Condensed Matter Physics, University of Technology of Braunschweig, 38106 Braunschweig, Germany: *Correlated Electrons and Competing Interactions in Raman Scattering*

Renata Lewandowska, Horiba Jobin Yvon: *Pushing the Limits of Raman Microscopy towards Nanomaterials Analysis and Fast Imaging*

Guy Lucazeau, LEPMI, Institut National Polytechnique de Grenoble, France: *Raman Study of Phase Transitions of Amorphization Process Induced by High Pressure on $Gd(MoO_4)_3$*

Mirosław Mączka, Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Wrocław, Poland: *Phonon Properties and Structural Phase Transitions in Ferroelectrics — High Pressure Raman Scattering Studies*

Michele Marrocco, ENEA, Rome, Italy: *Non-Linear Raman Spectroscopy of Molecular Hydrogen*

Adnen Mlayah, CEMES-CNRS, Toulouse, France: *Acoustic Vibrations for Nanoscale Metrology*

Niculina Peica, Forschungszentrum Juelich, Germany: *Development of a New Ultrahigh Vacuum Tip-Enhanced Raman Scattering Experimental Setup*

Rudolf Pfeiffer, University of Vienna, Faculty of Physics, Austria: *Materials Engineering inside Carbon Nanotubes*

Aron Pinczuk, Columbia University, USA: *Raman Scattering by Electrons in Semiconductor Quantum Structures*

Aneta Słodczyk, LADIR-CNRS (LADIR), Thiais, France: *Raman Intensity: an Important Tool in the Study of Nanomaterials and Nanostructures*

Ratnasingham Sooryakumar, Ohio State University, USA: *Light Scattering and Sound Propagation in Photo-Tunable Carbon Nanosponge Suspensions*

Jonathan E. Spanier, Drexel University, USA: *Raman Spectroscopy Involving Individual Single- and Multi-Component Semiconductor Nanowires*

Ken Williams, Renishaw: *New Imaging Techniques in Raman Spectroscopy — Defining New Standards for High Speed Image Data Acquisition*

Andrzej Wyszomolek, Institute of Experimental Physics, University of Warsaw, Poland: *Magnetoplasma and Impurity Excitation in GaAs Studied by Resonant Raman Scattering in High Magnetic Fields*