2nd International Conference on Physics of Optical Materilas and Devices

BOOK OF ABSTRACTS

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Publisher: **Vinca Institute of Nuclear Sciences**

Print run: **250 copies**

ISBN: **978-86-7306-102-3**

August 2009, Belgrade, Serbia

ICOM 2009

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Herceg Novi, Montenegro
August 26th – September 31st, 2009

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FOREWORD

The 2009 International Conference on Physics of Optical Materials and Devices (ICOM2009) is the second conference jointly organized by the Institute of Nuclear Science "Vinča" (Republic of Serbia) and the École nationale supérieure de chimie de Paris (France).

Herceg-Novi in Montenegro is of course dedicated to tourism but also to enjoyable and useful discussions between scientists through several conferences every year.

This conference brings together scientists and technology users who are investigating or developing materials for optical applications. The conference will present the state of the art in preparation methods, optical characterization and usage of optical materials and devices in various photonic fields. The Workshop on low dimensional structures and materials will be held as a satellite meeting on ICOM2009 and will cover the advanced topics and subjects in the areas of bottom-up approaches to nanostructured materials. The conference will stress the value of a fundamental scientific understanding of optical materials and applications in lasers, scintillators, phosphors. The accent will be put on material elaboration and characterization.

The ICOM2009 Conference is organized in a workshop style, composed of several sessions, which will comprise 19 invited lectures by the leaders in the field, 50 contributed oral lectures and 156 poster presentations.

We are grateful for sponsorships which have assisted us by providing some financial support. We are grateful to Prof. G. Boulon, editor-in-chief, for the acceptance of some selected papers in the journal Optical Materials. We are grateful to Prof. M. Franko, associate editor, for the acceptance of some selected papers in the journal Acta Chimica Slovenica.

We wish to express our thanks to the members of the International committee for their suggestion of oral speakers and we are also grateful to the members of the local organising committee in Belgrade for their effort and time during preparation of the conference.

Chairpersons

Prof. Miroslav Dramićanin
Dr. Bruno Viana

List of contributions

OPTICAL PROPERTIES OF Au NANORODS/PVA NANOCOMPOSITE FILMS

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Polymer based nanocomposites have emerged as a new class of materials and attracted considerable interest due to their new or much improved optical, electrical and thermal properties. Au nanorods are synthesized in water using seed-mediated growth method in the present of surfactant CTAB and silver ions. The size and shape of Au nanorods (length-width aspect ratio 4) were examined by TEM technique. Colloidal solution of Au nanorods was used as a precursor for synthesis of Au/PVA nanocomposite films. The optical properties of transparent and colored nanocomposite films were evaluated by UV/ViS absorption spectroscopy. The appearance of two surface plasmon resonance bands in absorption spectrum of Au nanorods colloidal solution is consequence of structural anisotropy. Different dielectric properties of PVA polymer compared to water environment induced position changing of the longitudinal and transversal plasmon resonance bands in absorption spectrum of Au nanorods/PVA nanocomposite films.