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11th INTERNATIONAL CONFERENCE «ON FRONTIERS OF POLYMERS
AND ADVANCED MATERIALS» (ICFPAM)
(Incorporating Biomaterials Africa 2011)

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This conference was held from 22 to 27 May 2011 at the Conference Centre, University of Pretoria, Pretoria, South Africa. This biannual conference provides a unique scope involving a blend of science, technology and business. It brings together leading international scientists, engineers, top level industrial management and business executives for discussions on the current status of advanced materials, emerging technologies and industrial and business opportunities. The conference is really multidisciplinary and global with participation of scientists, engineers, industrialists and business representatives.

The ICFPAM conference brought together high level academic and industrial representatives from 44 different countries. There were about 350 scientists from 150 research centers. From the very outset this series of conferences has attracted attendance of very high level internationally leading scientists and industrialists in the field of advanced materials and technologies, and has received strong support from the highest level of the Government of the host country. The conference usually hosts Nobel Prize winners, for example Prof. Alan J. Heeger and Prof. Alan G. MacDiarmid, laureates in chemistry for the discovery and development of conductive polymers.

The ICFPAM conference series is unique and different from standard scientific conferences in that it focused on:

- Truly global representation from the highest level of industry, government and academia. The conference had representatives from 30 different covering all the continents.

- Global strategies on interfacing of advanced materials and emerging new technologies. The conference had also featured international exhibitions by industries and companies.

- Balanced emphasis on Science, Technologies, and Business opportunities.

- Broad coverage of technical topics, which are modified for each conference to suite the needs of the host country and the surrounding region.

Conference chairpersons: Honorary International Chairperson – Prof. P.N. Prasad (Executive Director, The Institute for Lasers, Photonics and Biophotonics Buffalo, NY, USA); International Chairpersons – Prof. F. Kajzar (Angers University, France), Prof. K.S. Lee (Hannam University, Taejon, South Korea); National Chairperson – Prof. W.W. Focke (University of Pretoria, South Africa), Prof. R. Kozlowski (ECORENA, Warsaw, Poland), Prof. J.E. Mark (Distinguished Res. Prof. Department of Chemistry University of Cincinnati, OH, USA), Prof. I. Rau (POLITEHNICA University of Bucharest, Romania) were co-chairpersons.

The program of the conference included 12 plenary lectures, some oral presentation and posters. Jong Min Kim gave information about nanotechnology and its application for future information technology and Paras N. Prasad told about nanomaterials, biotechnology and nanomedicine: meeting the challenges in healthcare and environment. The topic of the next plenary lecture was “The role of nanostructured materials in enhancing the activity of phthalocyanine dyes in photomedicine and electrochemistry” (Tebello Nyokong). Laser tweezing in liquid crystals was discussed in the lecture of H.F. Gleeson & M.R. Dickinson.

The topic of fifth plenary lecture was “High temperature organic ferromagnetic compositions – a lesson learned from DNA” (Young-Wan Kwon, Chang Hoon Lee, Jung-Il Jin & Dong-Hoon Choi). Shaowei Chen spoke about nanoparticle-mediated electronic communication. Mamoun Muhammed gave information about engineering of nanomaterials for energy applications. The eighth lecture was devoted to challenges for clinical application of BMPs and biomaterials for bone & cartilage regeneration (A. Hari Reddi).

Larry R. Dalton & Stephanie J. Benigh presented theory-inspired nano-engineering of structure, lattice dimensionality, and viscoelasticity of new polymer and

dendrimer materials. Prof. G.E. Zaikov devoted his lecture to kinetics for the chemistry, biology, medicine and agriculture. Mahlori Mashimbye spoke about fluorochemical expansion initiative. The last plenary lecture done by Richard B Jackman was about detonation nanodiamonds: properties and applications.

Oral presentations were distributed between 9 symposiums: “New Materials and Advanced Manufacturing Technologies” (16 reports), “Advanced Nano-Scale and Nano-Structured Materials” (21 reports), “Natural Fibre Composites” (20 lectures), “Advanced Materials and Nano-Structures in Electrochemistry: Energy Storage and Conversion,

Electrocatalysis and Electroanalysis” (25 reports), “Synthesis and Chemistry of Polymer Nano-Composites” (24 reports), “Laser Processing & Photonics: Advanced materials and composites for photonics” (27 reports), “Fluorochemical Materials, Engineering, and Technologies” (5 reports), “Biomaterials Africa 2011” (26 reports) and “Carbon-Based Materials: Graphene, Carbon Nanotubes, Diamonds and Graphite” (10 reports).

Poster session included 120 presentations which were distributed between second and nine symposiums.

The next conference will be held in Auckland (New Zealand) on December 5