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## ELASTOMERY 2013 "SCIENCE AND INDUSTRY" XV INTERNATIONAL SCIENCE AND TECHNOLOGY CONFERENCE

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The International Conference "Elastomery 2013" was held in Gromada Hotel "Dom Chłopa" (Warsaw, Poland) for the period October 23–25, 2013. It was 15<sup>th</sup> International Science and Technology Conference.

The organizers of the conference were: Institute for Engineering of Polymer Materials and Dyes (Torun), Elastomer and Rubber Technology Division (Piastrów) with cooperation with Rubber Manufacturers Association EKOGUMA. Honorary Patronage was Deputy Prime Minister, Minister of Economy Janusz Piechociński and Patronage of the Conference – Minister of Science & Higher Education Prof. Barbara Kudrycka.

About 150 participants from 14 countries (Poland, Germany, Holland, Denmark, Slovakia, Czech Republic, Hungary, France, Luxemburg, China, India, USA, Sweden and Russia) and 65 research centers took part in this conference.

The chairman of the conference was Prof. Ludomir Slusarski (Lodz Polytechnic Institute, Institute of Polymer Technology). The members of Scientific Committee were: Dr. Wanda Parasiewicz (Institute of Industrial Polymers and Pigments (Piastrów), Prof. Dariusz Bieliński (Lodz Polytechnical Institute, Institute of Industrial Polymers and Pigments), Dr. Andy Chapman (Tun Abdul Razak Research Centre, UK), Prof. Zbigniew Florjańczyk (Polytechnic Institute at Warsaw, Chemical Division), Prof. Ulrich Giese (German Institute of Rubber Technology), Prof. Ivan Hudec (Slovak University of Technology, Slovak Republic), Prof. Ryszard Kozłowski (Institute of Industrial Polymers and Pigments, Division of Elastomers and Rubbers (Piastrów), Prof. Jacques Noordermeer (University of Twente, Elastomer Technology and Engineering (ETE), Netherlands), Prof. Maria Rajkiewicz (Institute of Industrial Polymers and Pigments, Division of Elastomers and Rubbers (Piastrów), Prof. Zbigniew Rosłaniec (West Pomeranian University of Technology in Szczecin), Prof. Władysław Rzymiski (Lodz Polytechnical Institute, Institute of Industrial Polymers and Pigments), Prof. Marian Zaborski (Lodz Polytechnical Institute, Institute of Industrial Polymers and Pigments) and Prof. Marian Żenkiewicz (Institute of

Industrial Polymers and Pigments, Division of Elastomers and Rubbers (Torun).

The members of Organizing Committee were: Dr. Teresa Kleps (Chairman), Prof. Dariusz Bieliński (Vice-Chairman) and Teresa Jędrzejak, Tamara Długoborska, Urszula Ostaszewska (Secretariat).

The program of the conference included 6 sessions. Prof. Ludomir Slusarski, Prof. Danusz M. Bielirski, Prof. Zbigniew Flonartczyk, Dr. Józef Richert, Dr. Barbara Nemeth and Dr. Urszula Ostaszewska took part in the opening ceremony of the Conference. They were also co-chairmen of the first session entitled "Elastomers/Rubber – Perspectives – Innovation" which included 5 reports. Prof. L. Slusarski presented a report about rubber technology in the first half of the 21st century. The report of Anna Kopas-Suwara was devoted to epoxydised natural rubber (ENR) and its application in tyres. Władysław M. Rzymiski spoke about Natural rubber in the past, at present and its perspectives. The topic of fourth lecture was "Open innovation – winning together" (Pierre Orlewski). The last presentation of this session was devoted to the weakness of technology transfer and the ways to improve its effectiveness (Ryszard Kozłowski, Paul Kolodziejczyk, Frank Kajzar, Kajetan Pyrzynski).

The chairmen of the second session were Prof. Ludomir Slusarski and Prof. Ulrich Giese. Six lectures were included in this session. The lecture of Stefanie Reese and Deepanshu Sodhani was devoted to finite element micro-field simulation illustrating the effect of filler-filler interaction on stress softening in filled elastomers. Anna Boczkowska gave the information about effect of the microstructure on the properties of magnetorheological elastomers. The information about methods of damage detection in elastomers was included in the lecture of Mohan N. Ranganathan, S. Meo, F. Lacroix, C. Cruanes, G. Berton. The role of aromatic compounds in radiation chemistry of elastomers was discussed in the lecture of Wojciech Giszewski, Maria Rajkiewicz, Zbigniew P. Zagorski. The lecture of Katarzyna Bandzierz and Dariusz M. Bielirski was devoted to radiation crosslinking of acrylonitrilebutadiene

rubber, the influence of sulphur and dibenzothiazole disulphide content on the process. Paulina Dmowska and Władysław M. Rzymiski gave presentation about dynamic crosslinking and properties of chloroprene and hydrogenated acrylonitrile butadiene rubber blends.

The third session had the title “Rubber and Elastomer Composites – Adhesives – Technological Processes” and included 6 reports.. The chairmen of this session were Prof Stefame Reese and Prof. Władysław Rzymiski. The first report of Zbigniew Roslaniec, Sandra Paszkiewicz and Anna Szymczyk was devoted to elastomer hybrid nanocomposites. Synthesis, properties and application of UV-crosslinked acrylic pressure-sensitive adhesives were discussed in the lecture of Zbigniew Czech, Paulina Ragariska, Agnieszka Kowalczyk. The information about new trends in the area of effective and environmentally friendly biocides application in polymers and textile materials was included in the presentation of Ryszard Koztowski, Maria Rajkiewicz, Zbigniew Wertejuk, Wiktor Tyszkiewicz, Krzysztof Majewski, Wojciech Kamysz and Ryszard Syryjczyk. Maria Rajkiewicz spoke about multilayer textile-rubber composites in engineering materials. The lecture of Rafat Anyszka, Dariusz M. Bieliriski, Zbigniew Podzich was devoted to the properties of silicone rubber-based ceramizable composites reinforced with fibers. Tomasz Gozdek gave information about elastomeric composites containing plasmochemically modified fillers.

The chairmen of the fourth session “Raw Materials for Rubber Technology. Testing and Equipment” were Prof. Maria Rajkiewicz, Barbara Nemeth and Dr Pierre Orlewski. Nine lectures were included in this session. Marek Gardavsky gave presentation about wax in rubber compounds and test method. Nico Leliveld gave information about new high dispersable silica PERKASIL® GT 3000 GRAN. Wolfgang Rusching spoke about BARBE Group of Companies. The newest offer of raw chemical materials was presented by Jacek Pilarski. The lecture of Andrzej Kabat was devoted to the construction of the tyre and rubber compound production department – a new tyre manufacturer on the Polish market. Piotr Redlarski discussed use and shaping of specific properties of elastomers in industrial technological processes of coating and calendaring. Isabella Joelsson Rahmn gave information about mineral process oils as plasticizers in

tyre and technical rubber applications. New synthetic rubbers from Synthos were the topic of the Jarosław Rogoza.

The fifth session “Protection of Elastomers from Degradation. Testing of Raw Materials and Rubber Goods” included 6 reports. The chairmen of this session were Prof Mohan N. Ranganathan and Prof. Zbigniew Roslaniec. The presentation of Gennady Zaikov, V. Podmasteriev and S. Razumovskii was devoted to the mechanisms of elastomers degradation in ozone and protective action of antioxidants. Antioxidant properties of lignin in rubber blends were discussed by Janka Kubackova, Jozef Ferenc, Ivan Hudec, Stefan Suty, Michal Jablonsky, Julius Annus and Jozef Preto. K. Kosar, M. Kralik, J. Uhlár, Zs. Vegh, M. Novakova and P. Major gave information about 6PPD prepared by new technology. M. Bieliriski spoke about current research trends in material engineering and technology of elastomers. The study of mechanical and electrical properties based on EPDM rubber for traction network elements was presented by Elżbieta Piesowicz and Paweł Zukalewicz. Krzysztof Tuzak gave information about a method for testing the permeation of organic solvents through elastomeric barrier materials at low temperatures.

The last session had the title “Recycling of Rubber Waste. Devulcanization” and included 4 reports. The chairmen of this session were Prof. Gennady Zaikov and Dr. Jacek Magryta. The first lecture was devoted to vulcanization model as a tool for the development of devulcanization for waste rubber materials (Ulrich Giese). Recycling of butyl rubber crosslinked with phenol-formaldehyde resins was discussed in the presentation of Anna Smejda-Krzewicka, Władysław M. Rzymiski, Adam Piwowarczyk, Justyna Skrodzka. Jacek Magryta spoke about the selected technical and economic issues of recovery and recycling of waste rubber products. Ewa Klugmann-Radziemska, Katarzyna Januszewicz gave information about the valorization of oil coming from tyre pyrolysis.

Prof. Ludomir Slusarski and Prof Gennady Zaikov took part in the closed ceremony of the conference.

The proceeding of the conference will be published by Apple Academic Press (CRC-Press- Taylor&Frances Group) in 2014.

The next XVI conference will be held in Poland in 2015.