

**7<sup>th</sup> International Conference Polymeric Materials in Automotive  
PMA 2017**

**&**

**23<sup>rd</sup> Slovak Rubber Conference SRC 2017**

**PROGRAM**

**May 29 - 31, 2017**

**Conference Center of Lindner Hotel Gallery Central  
Bratislava, Slovak Republic**

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**Organised by:** **Slovak University of Technology**  
**Faculty of Chemical and Food Technology**  
**Institute of Natural and Synthetic Polymers**

**Polymer Institute**  
**Slovak Academy of Sciences**

## Monday (May 29, 2017)

### PMA 2017 & SRC 2017

10.00 – 10.10	Opening ceremony		
Chairperson	CHODÁK Ivan		
10.10 – 10.30	Opening Lecture	ŠAJBIDOR Ján STU Bratislava, Slovak Republic	Research activities of the Faculty of Chemical and Food Technology STU in Bratislava
10.40 – 11.00	Opening Lecture	LACÍK Igor Polymer Institute SAS Bratislava, Slovak Republic	Research activities of the Polymer Institute of Slovak Academy of Sciences Bratislava
11.00 – 11.30	Opening Lecture	MATUŠEK Alexander ZAP Bratislava Slovak Republic	Automotive Industry in Slovakia
11.30 – 12.00	Opening Invited Lecture	MATUŠEK Alexander VW Slovakia Slovak Republic	The challenges of the Automotive Industry in Slovakia, Road Transport through Autonomous Vehicles
12.00 - 13.30	Lunch		
Chairperson	SCHUSTER Robert		
13.30 - 14.15	Invited Main Lecture	LATHUS Guillaume Jeol (Europe) SAS	From sample preparation to sample analysis
14.15 – 15.00	Invited Main Lecture	NAKAJIMA Ken Tokyo Institute of Technology, Japan	AFM nanomechanics on Rubbers
15.00 – 15.30	Coffee Break		
Chairperson	ŠIMON Peter		
15.30 - 16.00	Invited Lecture	MALÍK Jan European Patent Office, The Netherlands	Polymeric Materials in Automotive - a perspective from European Patent Office
16.00 - 16.30	Invited Lecture	HANZELOVÁ Silvia Milliken Europe BVBA, Belgium	Innovative solutions through specialty additives for automotive applications
17.00 – 17.30	Invited Lecture	KARVAŠ Anton Continental Matador Rubber, Púchov Slovak Republic	Continental Matador Rubber focus to Technology center Púchov
17.30 – 18.30	Poster Session		

## LIST of POSTERS

1. **Černáková, L.** – Vašková, I. – Feranc, J. – Jurkovič, P. – Tomanová, K. – Šarišský, D.: **Plasma surface modification of poly(lactic acid).**
2. **Filová, Z.** – Kozáková, A. – Kubalová, K. – Krupejová, D. – Ďuračka, M.: **Humidity resistance of electroinsulating resins.**
3. Filová, Z. – Krupejová, D. – Kozáková, A, **Kubalová, K.** – Garajová, M.: **Adjustment of reactivity and stability of styrene type electroinsulating resins.**
4. Gemeiner, P. - **Hatala, M.** - Mikula, M. - Kuliček, J. - Švorc, L. - Mičušík, M. - Omastová, M. – Khunová, V.: **Printed composite electrodes based on conducting polymer PEDOT:PSS and halloysite for hybrid solar cells.**
5. **Hrabovská, V.** – Hricová, M. – Ryba, J. – Ujhelyjiová, A.: **Properties of PLA fibres.**
6. **Hricová, M.** – Hrabovská, V. – Tomanová, K.: **Thermal properties of polypropylene/photochromic pigment fibres.**
7. **Kováčová, M.** - Marković, Z. - Danko, M. - Bartoš, J. - Švajdlenková, H. – Špitalský, Z.: **Quantum dots as nanofiller in polymer composites and their antibacterial effects for potential application in construction of ambulances and other equipment.**
8. **Matvejová, M.** – Feranc, J. - Hudec, I.: **Characterisation of rheological properties of rubber blends based on EPDM.**
9. **Mikula, M.** – Hatala, M. – Gemeiner, P. – Beková, Z. – Staňo, M. : **High-conductive printed layers based on conducting polymer PEDOT:PSS.**
10. Maňas, D. – **Mizera, A.** – Stoklásek, P. – Maňas, M.: **New apparatus for chip-chunk resistance of tire treads testing.**
11. **Novák, I.** at all: **Surface properties of atmospheric discharge plasma modified by LDPE: 2. Investigation of wood based polymeric composites.**
12. **Oravec, J.**- Preťo, J. – Meluš, P. – Hirahara, H. – Sang, J. – Aisawa, S.: **The affinity of various coupling agents to metal surfaces.**
13. **Pavlinec, J.** - Chodák, I. - Novák, I. – Preťo, J. - Vanko, V.: **Polar groups grafting to metallocene polyolefins designed for hot-melt adhesive compositions.**
14. **Perďochová, D.** – Tomanová, K. – Bočkaj, J. – Ryba, J. – Plavec, R. – Kaliňáková, L. – Vanovčanová, Z. Alexy, P.: **Influence of additives on crystallization of blends based on polylactid acid.**
15. Puype, F. – **Samsoněk, J.**: **Analytical methods for the evaluation of discolouring issues in polymers: are it always external factors?**
16. Puype, F. – **Samsoněk, J.**: **Broadening the application field of analytical pyrolysis coupled to gas chromatography with mass spectroscopy.**
17. Maňas, D. – **Stoklásek, P.** – Maňas, D. – Mizera, A. – Hylová, L. – Maňas, M.: **Effect of high beta irradiation doses on mechanical properties of surface layer of injection molded polyamide 11(PA 11).**
18. Kozakovičová, J. - Kováčová, M. - Markovic, Z. - Žigo, O. - Csomorová, K. - Svoboda, P. - Vysopal, M. -Vojto , **Špitalský, Z.**\*: **New carbon based polymer composites for 3D printing of automotive parts.**

19. **Tomanová, K.** - Vanovčanová, Z. - Plavec, R. - Omaníková, L. - Bočkaj, J. - Feranc, J. - Gálisová, I. - Jurkovič, P. - Alexy, P. – Galambošová, M.: **Analysis of materials using scanning electron microscopy equipped with EDS – spectrometer.**
20. **Tomanová, K.** - Vanovčanová, Z. - Plavec, R. - Omaníková, L. - Bočkaj, J. - Feranc, J. - Gálisová, I. - Jurkovič, P. - Alexy, P. – Galambošová, M.: **Measurement of liquids and biological samples using cryo – scanning electron microscopy**
21. **Ujhelyiová, A.** - Krivoš, Š.- Plavec, R. – Michlík, P.: **The utilization of halloysite for preparation of the polypropylene fibres.**

Tuesday (May 30, 2017)

Plastics in Automotive **PMA 2017**

<b>Chairperson</b>	<b>MALÍK Jan</b>		
9.00 – 9.30	Invited Lecture	ARETXABALETA RAMOS Laurentzi	Advanced manufacturing processes for composite parts in automotive industry
9.30 – 10.00	Key Lecture	BERND Jakob	Dependency of residence time and screw configuration in twin screw compounding of plastics
10.00 – 10.20	Contributed Lecture	SEDNIČKOVÁ Michaela	Properties of poly( $\epsilon$ -caprolactone)-clay nanocomposites
10.20 – 10.40	Contributed Lecture	HATALA Michal	Printed layers in hybrid solar cells
<b>10.30 – 11.00</b>		<b>Coffee Break</b>	
<b>Chairperson</b>	<b>TOCHÁČEK Jiří</b>		
11.00 – 11.30	Invited Lecture	SZOSTAK Marek	The use of Mucell and InduMold technologies in the production of car interior components
11.30 - 12.00	Key Lecture	BOGDANOV Mikhail	How the latest polyolefin elastomer technology can contribute to automotive lightweighting & increased sensory appeal
12.00 – 12.20	Contributed Lecture	ŠPITÁLSKÝ Zdeno	Innovative technologies for application in automotive textile
12.20 – 12.40	Contributed Lecture	KHUNOVÁ Viera	Electrospun biodegradable polymer nanofibres reinforced by halloysite nanotubes
<b>12.40 – 14.00</b>		<b>Lunch</b>	
<b>Chairperson</b>	<b>HANZELOVÁ Silvia</b>		
14.00 – 14.30	Key Lecture	MAŇAS Miroslav	New approach to evaluation of impact tests
14.30 – 14.50	Contributed Lecture	HÁZ Aleš	Isolation technique of VOC generated by natural and synthetic polymers
14.50 – 15.10	Contributed Lecture	SAMSONEK Jiří	The detection of unknown organometallic compounds in polymers by combining ICP-MS and organic mass spectroscopy
<b>15.10 – 15.40</b>		<b>Coffee Break</b>	
<b>Chairperson</b>	<b>SZOSTAK Marek</b>		
15.40 – 16.00	Contributed Lecture	BELLUŠOVÁ Denisa	Recovery and recycling of bioplastics – recycling of PLA waste
16.00 – 16.20	Contributed Lecture	VANOVCANOVÁ Zuzana	Blends based on polylactic acid, polyhydroxybutyrate and thermoplastic starch
16.20 – 16.40	Contributed Lecture	OMANÍKOVÁ Leona	Influence of plasticizers on mechanical properties and processing stability of PLA/PHB blends
<b>17.00 – 18.30</b>			<b>Sightseeing by Bratislava City Train</b>
<b>19.00 – 22.00</b>		<b>Mala scéna STU</b>	Conference Gala Evening – Swing Orchestra FATS JAZZ BAND

Tuesday (May 30, 2017)

Slovak Rubber Conference **SRC 2017**

<b>Chairperson</b>	<b>NAKAJIMA Ken</b>		
9.00 - 9.30	Invited Lecture	BACHELLI Fabio	Sustainability in the automotive and tyre business through bio/refinery plasticizers
9.30 - 10.00	Key Lecture	KUFELT Olga	Silanes for energy efficient elastomers
10.00 - 10.20	Contributed Lecture	JAIN Anuj	Improvement of NR-silica interaction by epoxidation and by using CNT as facilitator
10.20 - 10.40	Contributed Lecture	MACHŮ Aleš	The effect of carbon black grades against mechanical crack initiation in rubber used for sealing applications based on EPDM and NBR
<b>10.40 - 11.00</b>		<b>Coffee Break</b>	
<b>Chairperson</b>	<b>GIESE Ulrich</b>		
11.00 - 11.30	Invited Lecture	MIČUŠÍK Matej	Gas sensors based on elastomer/carbon nanotubes composites
11.30 - 12.00	Key Lecture	DROBNÝ George	Recent developments of radiation technology for polymers
12.00 - 12.20	Contributed Lecture	KARL Christian	Graphene in elastomers; Elastomers for heating applications
12.20 - 12.40	Contributed Lecture	KRUŽELÁK Ján	Rubber magnetic composites
<b>12.40 - 14.00</b>		<b>Lunch</b>	
<b>Chairperson</b>	<b>MIČUŠÍK Matej</b>		
14.00 - 14.30	Key Lecture	JAŠŠO Martin	Mechanism of modification and internal structure of conventional asphalt modified with styrene-butadiene-styrene crosslinked with sulfur
14.30 - 14.50	Contributed Lecture	Radek STOČEK	Accelerated predicative testing of tire behavior
14.50 - 15.10	Contributed Lecture	AOYAGI Yuichi	A novel approach to using Inverse Laplace transformation of NMR regarding cured EPDM is aging
<b>15.10 - 15.40</b>		<b>Coffee Break</b>	
<b>Chairperson</b>	<b>MAŇAS Miroslav</b>		
15.40 - 16.00	Contributed Lecture	ŠUTÝ Štefan	Modification of pulp fibers for their utilisation in plastics and rubber
16.00 - 16.20	Contributed Lecture	VAŠKOVÁ Ida	Influence of liquids on rubber blends with content of starch
16.20 - 16.40	Contributed Lecture	HOLIČKOVÁ Petra	Natural fillers and their influence on the properties of rubber blends
<b>17.00 - 18.30</b>			<b>Sightseeing by Bratislava City Train</b>
<b>19.00 - 22.00</b>		<b>Mala scéna STU</b>	Conference Gala Evening – Swing Orchestra FATS JAZZ BAND

## Wednesday (May 31, 2017)

### PMA 2017 & SRC 2017

<b>Chairperson</b>	<b>BACCHELLI Fabio</b>		
<b>9.00 – 9.45</b>	<b>Invited Main Lecture</b>	<b>GIESE Ulrich</b> Deutsches Institut für Kautschuktechnologie DIK, Hannover,	<b>Aging stability of peroxidic crosslinked rubbers and measures for improvement of stability</b>
<b>9.45 – 10.30</b>	<b>Invited Main Lecture</b>	<b>ŠIMON Peter</b> STU Bratislava, Slovak Republic	<b>Evaluation of thermooxidative stability of rubber compounds by differential scanning calorimetry</b>
<b>10.30 – 11.00</b>	<b>Coffee Break</b>		
<b>Chairperson</b>	<b>HUDEC Ivan</b>		
<b>11.00 – 11.30</b>	<b>Invited Lecture</b>	<b>TOCHÁČEK Jiří</b> CEITEC – Central European Institute of Technology, Brno University of Technology	<b>The presence and future in the stabilization of automotive polymers</b>
<b>11.30 – 12.00</b>	<b>Invited Lecture</b>	<b>NIAOUNAKIS Michael</b> European Patent	<b>Bioplastics in automotive applications – trends in patent applications</b>
<b>12.00 - 12.45</b>	<b>Invited Main Lecture</b>	<b>SCHUSTER Robert H.</b>	<b>Compounding with exfoliated layered silicates potentials and challenges.</b>
<b>12.45 – 13.00</b>	<b>Conference Closing Ceremony</b>		
<b>13.00 – 14.00</b>	<b>Lunch</b>		