POLYMER PROCESSING 4.0

Europe-Africa PPS2019

November 18-21, Pretoria, South Africa

Europe-Africa Regional Conference of the Polymer Processing Society

PPS2019

November 18-21, 2019

Pretoria, South Africa

CSIR International Convention Centre

Organized by Council for Scientific and Industrial Research in Partnership with MinTek

science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA

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Welcome Message

Welcome to Europe-Africa International Conference of the Polymer Processing Society (PPS2019)

On behalf of the Department of Science and Innovation, Council for Scientific and Industrial Research (CSIR) and the local organizing committee, it is my pleasure to welcome you to the PPS Europe-Africa 2019 Regional Conference (PPS2019) at the CSIR International Convention Centre, Pretoria, South Africa on November 18-21, 2019. The theme of the conference is, **"Advanced Plastics as an enabling technology for the Fourth Industrial Revolution (Industry 4.0)".**

The PPS Meeting is a leading conference on polymer processing and attracts internationally renowned scientists, engineers and designers in the field of polymer research and development. The goals of the International Polymer Processing Society as embodied in its constitution are to foster scientific understanding and technical innovation in polymer processing by providing a discussion forum for the worldwide community of engineers and scientists in the field. The thematic range of the polymer processing encompasses all formulation, conversion and shaping operations applied to polymeric systems in the transformation from their monomeric forms to commercial products. An important ingredient for the success of the PPS2019 has been the participation of all professionals in all aspects of Polymer Science and Technology from all around the world at this unique African city of Pretoria.

Pretoria was officially founded in 1855 by Marthinus Pretorius who was a leader of the Voortrekkers. The city is also popularly known as The Jacaranda City due to the thousands of Jacaranda trees planted in its streets, parks and gardens. It is one of South Africa's three capital cities and a popular tourist destination among tourists from abroad and South Africa. The average November temperature is in between 15 (night) to 28°C (day).

With a total of 257 abstracts submitted from more than 30 countries globally, the PPS2019 scientific program includes short course lectures by well-known experts in this field, distinguished plenary and keynote speakers, special lectures, contributed oral presentations by both senior and younger scientists and engineers as well as poster presentations by young postdoctoral fellows, doctoral and master students and engineers working in academia and industry. During this conference, a substantial participation of industry will initiate a strong collaboration between Universities, Research Institutes & Centres and Industry, which is key for technological advancement.

Though the intense scientific and technological discussion is the focus of this conference, the social and cultural part of this beautiful country should not be missed. The organizing committee put-together its best effort to make the PPS2019 memorable.

Finally, we would like to thank the Department of Science and Innovation (DSI), Ministry of Higher Education, Science and Technology, the Council for Scientific and Industrial Research (CSIR), University of Johannesburg, and Mintek (DSI-Mintek NIC) for financial support. We would also like to thank our sponsors: NetZsch, Xplore, TA Instruments, Advanced Laboratory Solutions, Anton Paar, and Perkin Elmer for their generous financial support and active participation of the conference. We would like to thank the CSIR CEO and Executive management of CSIR, DSI and Chemicals Cluster for their continued support and encouragement to my team. Finally, I would like thank PPS2019 organizing committee, (particularly, Margaret Ward, Hulde Fischer and Phili Masango), Scatterlings team (particularly Caro and Tanys), and CSIR ICC staff members. Last but not least to my family members (my wife and son) for their support.

I hope that you will have a meaningful and enjoyable time at Pretoria, South Africa.

Sincerely yours

Suprakas Sinha Ray
PPS2019 Chairperson

Manager, Centre for Nanostructures and Advanced Materials
DSI-CSIR Nanotechnology Innovation Centre
Council for Scientific and Industrial Research,
Pretoria 0001, South Africa

Local Organizing Committee

Professor Suprakas Sinha Ray, CSIR (Conference Chair)

Dr. Lucky Sikhwivhilu, Mintek (Scientific Committee Chair)

Dr. Vincent Ojijo, CSIR

Dr. Manfred Scriba, CSIR

Dr. Ndumiso Cingo, CSIR

Ms Margaret Ward, CSIR

Ms Hulde Fischer, CSIR

Ms Philisa Masango, CSIR

Ms Norah Maithufi, SASOL

Mr Rishi Madho, SASOL

Professor Water Focke, UP

Professor Richard Moutloali, UJ

Professor Rotimi Sadiku, TUT

Mr Dave Perrett, SASOR

Dr. Gebhu Ndlovu, Mintek

Symposia

S01: Advanced Processing and Additive Manufacturing

S02: Bio-based and Biodegradable Polymers

S03: Polymer-based Nanostructured Materials

S04: Polymer Blends, Alloys, and Composites

S05: Polymer Fibres, Films, and Membranes

S06: Polymer Foams

S07: Processing (Injection Moulding, Extrusion, Blow Moulding and Thermoforming)

S08: Process-driven Structure and Morphology

S09: Rubber and Elsatomers

S10: Smart and Responsive Polymeric Materials

S11: Polymer Synthesis and Modification

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location map

Directions from North

(travelling on N1 South)
Take N1 South
Take Meiring Naude/Lynnwood Road offramp
Keep Left
Turn Left into Meiring Naude Road
Cross over two sets of traffic lights
Turn right at the Third set of traffic lights into CSIR campus
Keep left and follow the signs
to the CSIR International Convention Centre

Directions from South

(travelling on N1 North)
Take N1 North
Take Lynnwood Road offramp after Atterbury Road
Turn right over N1 highway
Turn left into 1st street (Meiring Naude Road)
Cross over three sets of traffic lights
Turn right at the fourth traffic light into CSIR campus
Keep left and follow the signs
to the CSIR International Convention Centre

CSIR International Convention Centre
naturally hospitable • globally accessible

Conference Information

CONFERENCE VENUE	CSIR International Conference Centre Meiring Naude Road, Brummeria, Pretoria 0001 Tel.: +27 12 841 3884 | www.csiricc.co.za	
REGISTRATION SERVICE	Monday, November 18th	07h30 to 16h30
	Tuesday, November 19th	07h30 to 16h30
	Wednesday, November 20th	07h30 to 12h00
CONFERENCE BADGE	Please ensure that you wear your badge at all times to enter the conference site, meeting rooms, dining facility and social events	
ORAL PRESENTATION SCHEDULE	Plenary Lecture	40 min. including 5 min. question and answer
	Keynote and Special Lecture	30 min. including 5 min. question and answer
	Contributed Oral	20 min. including 3 min question and answer
POSTER PRESENTATION SCHEDULE	Poster Setup	Tuesday 19th November 10h30 onward
	Poster Presentation	Wednesday 20th November 18h00 to 19h30
	Poster Removal	After Presentation
FAMELAB SCIENCE COMMUNICATION SCHEDULE	Topic: Polymer Processing Changing the World around Us	
	SAASTA Science Communication and Public Speaking Training: Polymer Processing Changing the World around Us	Monday 18th November 15h00 to 18h00
	SAASTA FameLab Heat: Polymer Processing Changing the World around Us	Tuesday 19th November 18h00 to 19h30
SOCIAL AND OTHER EVENTS	Welcome Cocktail	Monday 18th November 18h00 to 21h00 (Outdoor Deck)
	South African Style BBQ	Tuesday 19th November 19h30 to 21h30 (Outdoor Deck)
	Conference Dinner	Wednesday 20th November 19h30 to 21h30 at CSIR ICC

Produced and created by CHELTENHAM Festivals

FameLab TALKING SCIENCE

International Partner BRITISH COUNCIL

Primary Partners NRF National Research Foundation | SAASTA South African Agency for Science and Technology Advancement | Jive Media Africa

CALLING ALL SCIENTISTS

Are you passionate about science?

Want to develop your science communication, confidence and public engagement skills?

Join the FameLab team for a workshop and participate in a heat at the International Polymer Processing Society Conference.

POLYMER PROCESSING CHANGING THE WORLD AROUND US

POLYMER PROCESSING WORKSHOP AND HEAT DETAILS:

WORKSHOP: MONDAY 18 NOVEMBER 14:30 TO 18:00

FINAL HEAT: TUESDAY 19 NOVEMBER 18:00 TO 19:30

VENUE: CSIR ICC

YOU COULD WIN GREAT PRIZES AND A TRIP TO THE UK!

Participants must be 21 to 35 years of age and currently registered, studying or working in science, technology, engineering or mathematics in South Africa to participate in the heat.

International delegates are welcome to attend the workshop.

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Europe-Africa PPS2019
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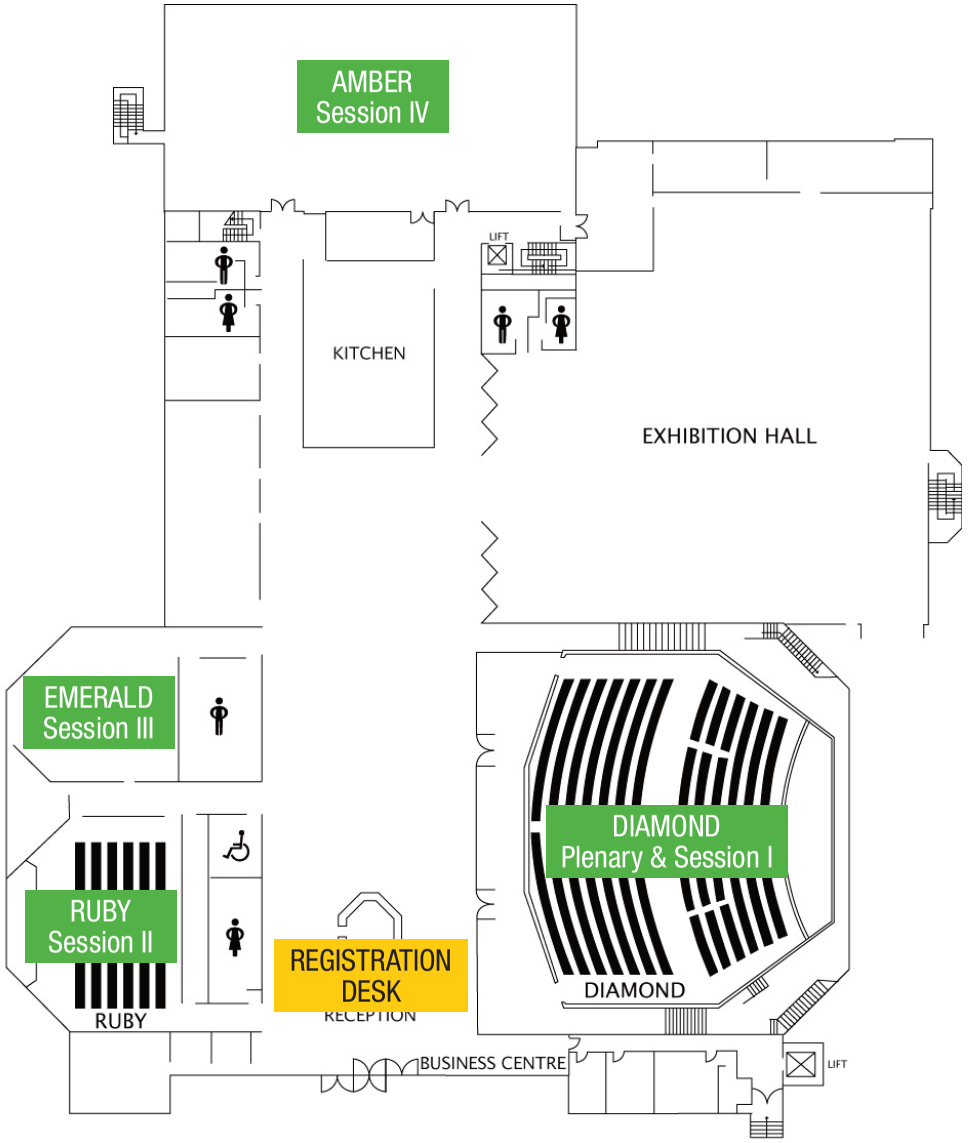
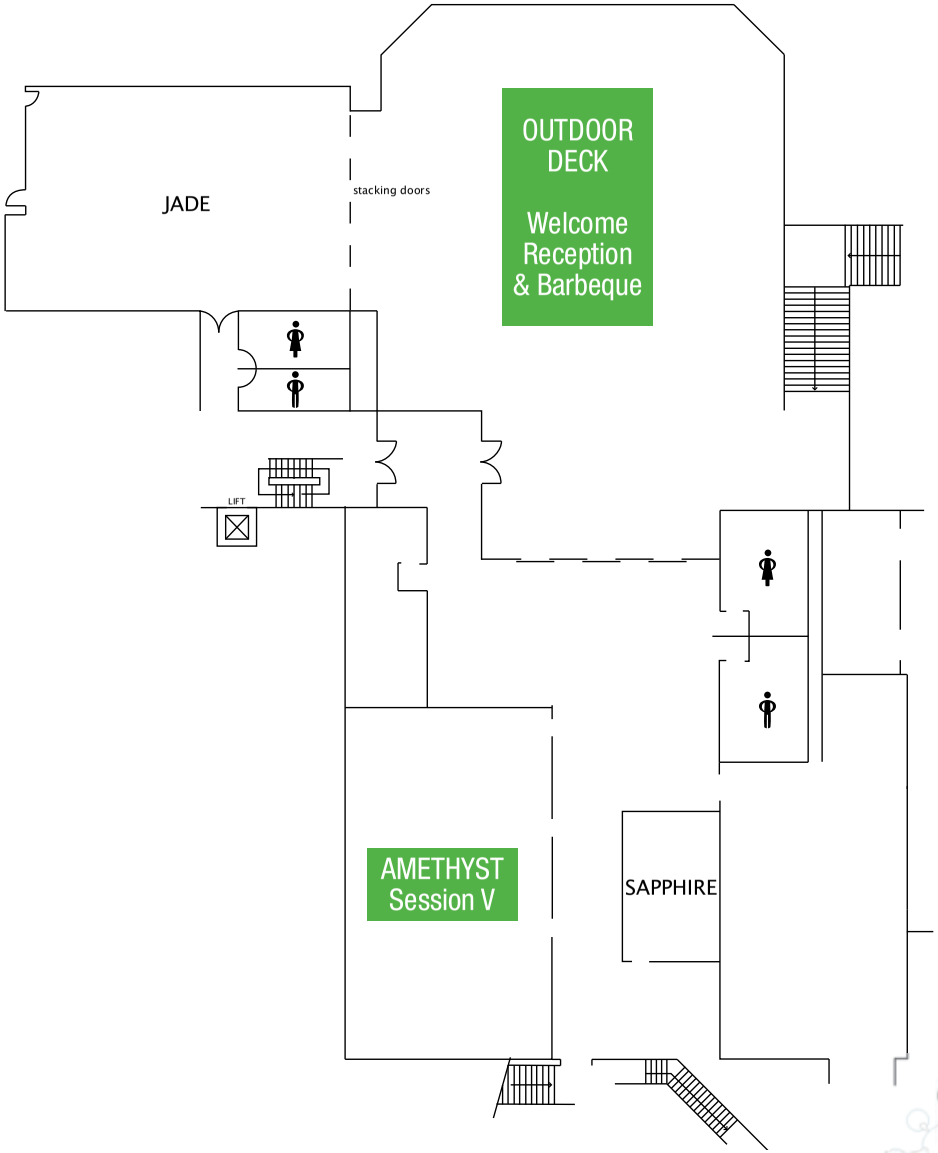
CSIR our future through science



Ground Floor



Lower Level Floor

Monday, November 18

07h30 – 16h30	Registration	Foyer
07h30 – 08h20	Breakfast	Foyer
08h20 – 10h30	Course Lectures	Ruby
10h30 – 11h00	Coffee Break	Foyer
11h00 – 12h45	Course Lectures	Ruby
12h45 – 13h30	Lunch	Outdoor Deck
13h30 – 14h15	Course Lecture	Ruby
14h15 – 14h30	Closing Remarks	Ruby
14h30 – 18h00	SAASTA Science Communication and Public Speaking Training	Ruby
18h00 – 19h00	Opening Function	Outdoor Deck
19h00 – 21h00	PPS2019 Welcome Reception	Outdoor Deck

Course Lectures Supported by

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Conference Bag Sponsored By

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COURSE LECTURES, RUBY

08h20 – 08h30	**Safety Briefing and Opening Remarks** Course Co-ordinators: Dr. Vincent Ojijo and Dr. Sreejarani Pillai
08h30 – 09h30	**Course Lecture I:** Extrusion problem solving with rheology and flow simulation Professor John Vlachopoulos, McMaster University, Canada
09h30 – 10h30	**Course Lecture II:** Concepts of Conversion of Polymeric Materials into Unique Nanofiber Designs and 3D-printed Objects Professor Sadhan C. Jana, The University of Akron, USA
10h30 – 11h00	**Coffee Break, Foyer**
11h00 – 12h00	**Course Lecture III:** Designing carbon nanofiller nanocomposites with targeted properties: A roadmap for filler selection Professor Manas-Zloczower Ica, The Case Western Reserve University, USA
12h00 – 12h45	**Short Course IV:** Thermal Characterization of Polymers i.V. Juergen Janoschek, NETZSCH-Gerätebau GmbH, Germany
12h45 – 13h30	**Lunch, Outdoor Deck**
13h30 – 14h15	**Short Course V:** Advanced gravimetric analyzing, a closer look to new developments over the last years Dr. Daniel Roedolf, TA Instrument, Belgium
14h15 – 14h30	**Closing Remarks**
14h30 – 18h00	**SAASTA Science Communication Public Speaking Training** Coordinator: Ms Hulde Fischer **Topic: Polymer Processing Changing the World around Us** This is a joint initiative with SAASTA
18h00 – 19h00	**Conference Opening, Outdoor Deck**
19h00 – 21h00	**Welcome Reception, Outdoor Deck**

07h30 – 16h30	Registration	Foyer
07h30 – 08h30	Breakfast	Foyer
08h30 – 10h30	Opening of Technical Session and Plenary & Special Lectures	Diamond
10h30 – 11h00	Coffee Break (Poster Setup at Foyer)	Foyer
11h00 – 13h20	Parallel Sessions	
13h20 – 14h00	Lunch (Poster Setup at Foyer)	Outdoor Deck
14h00 – 16h00	Parallel Sessions	Ruby
16h00 – 16h30	Coffee Break (Poster Setup at Foyer)	
16h30 – 17h50	Parallel Sessions	
17h50 – 18h00	Drinks	Foyer
18h00 – 19h30	SAASTA FameLab Heat: Polymer Processing Changing the World around Us.	Ruby
19h30 – 21h30	Social with South African BBQ	Outdoor Deck

PLENARY AND SPECIAL LECTURES, DIAMOND

08h30 – 08h40	**Safety Briefing and Opening of Technical Sessions** Session Chairs: Professor Anup Ghosh Session Coordinator: Dr. Reza Salehiyan
08h40 – 09h20	**Plenary I:** Machine Learning approach for a reliable and reproducible set-up of injection moulding processes Professor Dr.-Ing. Christian Hopmann, RWTH Aachen University, Germany
09h20 – 10h00	**Plenary II:** Wood: An inexhaustible resource for polymers and fillers materials Professor Youssef Habibi, Luxembourg Institute of Science and Technology, Luxembourg
10h00 – 10h30	**Special Lecture Series I:** The new, emerging and critical roles that polymer manufacturers will need to play in the era of the Fourth Industrial Revolution Dr. John Mellor, SASOL, South Africa

10h30 – 11h00 Coffee Break (Poster set-up), Foyer

VENUE	DIAMOND	RUBY	EMERALD	AMBER	AMETHYST
11h00 – 13h20	**Parallel Session 1** Session Chairs: Prof. Udo Wagenknecht Prof. Joao Maia Coordinator: Mr Rakgoshi Lekalakala	**Parallel Session II** Session Chairs: Dr. Mohammadreza Nofar Dr. Sudhakar Muniyasamy Coordinator: Mr Mpho Motloung	**Parallel Session III** Session Chairs: Dr. Esmaeil Narimissa Dr. Orebotse J Botlhoko Coordinator: Ms Tshepiso F. Mokoena	**Parallel Session IV** Session Chairs: Prof. Luyi Sun Dr. Severine A. E. Boyer Coordinator: Ms Mary Khoza	**Parallel Session V** Session Chairs: Prof. Trung Nghia Phan Dr. Sven Wiessner Coordinator: Ms Dimakatso Makwakwa
11h00 – 11h30	**S07-43: Keynote** Relationship between structure and properties within the injection molded objects: experiments and modelling Liparoti Sara, Speranza Vito, Titomanlio Giuseppe, Pantani Roberto	**S02-76: Keynote** Modified commercially available polymers for use inbiological and biomedical applications Van Reenen Albert, Van Der Westhuizen, Ben	**S03-35: Keynote** Segregated-structure polymer nanocomposites Ke Kai, Sang Zhen, Yuan Dian, Manas-Zloczower Ica	**S04-54: Keynote** Multi-layered architecture derived from polymer nanocomposites: A new class of materials for screening electromagnetic radiation Bose Suryasarathi	**S01-51: Keynote** Continuous manufacturing of gel and aerogel microparticles and microrods Jana Sadhan C

Tuesday, November 19 Continued

	Parallel Session I	Parallel Session II	Parallel Session III	Parallel Session IV	Parallel Session V
VENUE	DIAMOND	RUBY	EMERALD	AMBER	AMETHYST
11h30 – 12h00	**S07-131: Keynote** Transient rheology of polymer composites coupled with evolving fibre orientation and concentration **Bhattacharya Sati N,** Perumal Vishak, Gupta Rahul K, Costa Franco S	**S02-87: Keynote** Synthesis and properties of Furanoate polyesters as novel materials for food packaging applications: Reality and challenges **Bikiaris Dimitrios**	**S03-118: Keynote** Role of clay migration in droplet morphology establishment during melt mixing of clay polyethylene/ polyamide nanocomposites Médéric Pascal, Fneich Fatima, **Ville Julien,** Aubry Thierry	**S04-61: Keynote** Potential of short fibres in matrix rich areas of woven fabric thermo-plastic composites - Processing and mechanical properties **Altstädt Volker**	**S01-94: Keynote** Progress in powder bed fusion of polymers – Materials research and developments for laser sintering (LS) in industry and academia **Schmid Manfred**
12h00 – 12h20	**S07-02: Oral** Prediction of the mechanical properties of long fiber Reinforced thermoplastics **Willems Fabian,** Bonten Christian	**S02-22: Oral** Modification of Different Polylactides by Reactive Extrusion to Enhance the Melt Properties **Murillo-Castellon Svenja**	**S04-42: Oral** Polymer nanocomposites via high energy ball milling **Vincent,** **Khumalo Mandla**	**S04-03: Oral** Fast and simple detection of impact damage **Rittmann Johannes,** Rahammer Markus, Holtmann Niels, Kreutzbruck Marc	**S01-07: Oral** Sensory monitoring of the ultrasonic welding process **Kornely Mike,** Rittmann Johannes, Kreutzbruck Marc
12h20 – 12h40	**S07-04: Oral** Modification of standard polyamides for blow molding **Dreier Julia,** Murillo Castellón Svenja, Bonten Christian	**S02-29: Oral** Optimization, validation and degeneration of plastics in the environment **Resch Julia,** Kreutzbruck Marc, Bonten Christian	**S03-55: Oral** Nonlinear Viscoelastic response of CNT-based Polymer Nanocomposites **Milad Kamkar,** Soheil Sadeghi, Mohammad Arjmand, Uttandaraman Sundararaj	**S04-05: Oral** In-line quality assurance of metal-plastic-hybrid parts by air-coupled ultrasound **Bernhardt Yannick,** Rittmann Johannes, Essig Wolfgang, Kreutzbruck Marc	**S01-10: Oral** Recycling of PA12 powder for selective lasersintering **Weinmann Sandra,** Bonten Christian
12h40 – 13h00	**S07-08: Oral** Three-dimensional modelling of the thermoplastic PA6 in-situ-pultrusion **Celik Alptekin,** Bonten Christian	**S02-53: Oral** Adhesive based upon polyvinyl alcohol and chemical modified oca (Oxalis tuberosa) starch Borja Samantha Daniela, Molina Pamela Yomaira, **Valle Vladimir Daniela**	**S03-57: Oral** Wrinkle Motifs: patterning to applications **Ghosh Anik Kumar,** Knapp André, Wießner Sven, Das Amit, Fery Andreas	**S04-06: Oral** In-line flaw detection of pultruded profiles by air-coupled ultrasound **Reichle Daniel,** Bernhardt Yannick, Thieleke Philipp, Essig Wolfgang, Kreutzbruck Marc	**S01-26: Oral** Development of a novel extruder for the processing of a filament for robot-based 3D printing **Klis Laura,** Thieleke Philipp, Bonten Christian
13h00 – 13h20	**S07-09: Oral** Recyclates made of cast polyamide 6 and carboxylic Acid **Grebhardt Axel,** Formisano Benjamino, Bonten Christian	**S02-59: Oral** Assessment of recyclability of polylactide and characterization of the influence of multi-processing on properties of polylactide **Radusch Hans-Joachim,** Wutzler Andre, Fiedler Lothar, Modi Naman	**S03-103: Oral** Energy Storage Potential of Monolayered Boron: Mini Review **Adekoya Gbolahan Joseph,** Sadiku Rotimi Emmanuel, Yskandar Hamam, Suprakas Sinha Ray, Adekoya Oluwasegun Chijoke, Olajide Jimmy Lolu, Oladipo Folorunso, Biotidara Olusesan Frank, Awosanya Abayomi, Ichetaonye Ikechukwu Simon	**S04-16: Oral** Fracture mechanic examinations using the EWF-method in combination with digital image correlation **Kaiser Johannes,** Bonten Christian	**S01-71: Oral** Additively manufactured soft tools in comparison to conventionally manufactured hard tools **Mitterlehner Thomas,** Polixmair Mario, Kaynak Baris, Steinbichler Georg

13h20 – 14h00 Lunch Break, Outdoor Deck (Poster set-up, Foyer)

VENUE	DIAMOND	RUBY	EMERALD	AMBER	AMETHYST
14h00 – 16h00	**Parallel Session I** Session Chairs: Prof. José A. Covas Prof. Marc Kreutzbruck Session Coordinator: Ms Raphaahle Mekoa	**Parallel Session II** Session Chairs: Dr. Saha Nabanita Dr. Maya John Session Coordinator: Ms. Clarity Ropafadzo	**Parallel Session III** Session Chairs: Prof. Frej Mighri Prof. Zhong-Ming Li Session Coordinator: Ms Nomfundo Bapela	**Parallel Session IV** Session Chairs: Prof. Altan M. Cengiz Prof. Tarun K. Mandal Session Coordinator: Ms Phumla Sapula	**Parallel Session V** Session Chairs: Prof. Hani E Naguib Dr. Virendra Kumar Gupta Session Coordinator: Ms Sinazo Sitshange
14h00 – 14h30	**S07-135: Keynote** Application of process simulation in polymer materials development **Kuehnert Ines,** Fischer Matthieu, Spoerer Yvonne, Fechter Reinhard, Liang Leijie	**S02-102: Keynote** Designed from recycled: Turning old plastics and biopolymers to property enhancers for bioplastics **Hakkarainen Minna**	**S03-73: Keynote** Polymer electrolyte membranes for fuel cell application – Role of nanostructured materials **Msomi Phumlani**	**S04-65: Keynote** Polymer structure and dynamics under confinement: The case of polymer nanocomposites **Anastasiadis Spiros H**	**S01-145: Keynote** Mathematical modeling of sintering of two cylinders in fused filament fabrication **Vlachopoulos John,** Polychronopoulos Nickolas
14h30 – 15h00	**S07-214: Keynote** New dimensions in layer multiplication co-extrusion: tubes, bags, pipes and bottles Schneider Tyler, **Maia Joao**	**S02-106: Keynote** A phenomenological model for characterizing the hydrolytic degradation of PLA and PLA modified with a chain extender Limsukon Wanwarang, **Auras Rafael A,** Selke Susan	**S03-120: Keynote** Nanofillers for material development **Leuteritz Andreas**	**S04-147: Keynote** Effects of adding chicken feather fibre on flame retardancy and mechanical properties of polymeric composites Jung Daeseung, **Bhattacharyya Debes**	**S01-154: Keynote** Graphene–polyamide-6 composite multifunctional components via material extrusion **Daver Fugen,** Lee Marcian Kok Peng
15h00 – 15h20	**S07-12: Oral** Approach for the description of PvT-behavior of thermoplastics at high cooling rates **Baumgärtner Felix,** Bonten Christian	**S02-109: Oral** Using synchrotron radiation to assess structural changes in protein-based thermoplastics under mechanical loading and thermal cycles **Verbeek Johan**	**S03-125: Oral** Modified logistic model for polymer-composites electrical conductivity prediction **Folorunso Oladipo,** Hamam Yskandar, Sadiku Rotimi, Ray Suprakas Sinha, Joseph Adekoya Gbolahan	**S04-19: Oral** Sensor data fusion of optically excited shearographic and thermographic data for optimized visualization of defects in carbon fiber reinforced plastics **Joas Sebastian,** Kreutzbruck Marc	**S01-92: Oral** A Study on ABS bonding and dimensional accuracy in fused filament fabrication **Carneiro O S,** Silva A F, Costa A E
15h20 – 15h40	**S07-13: Oral** Investigation of the impregnation quality of thermoplastic tapes using air-coupled ultrasound **Essig Wolfgang,** Kreutzbruck Marc	**S02-117: Oral** Electron induced reactive processing to toughening of polylactic acid **Müller Michael Thomas,** Huang Ying, Zschech Carsten, Gohs Uwe, Wiessner Sven	**S03-127: Oral** The influence of graphene oxide synthetises on the thermal and mechanical behaviour of polypropylene-graphene oxide nanocomposites **Andrade Ricardo,** de Oliviera Yuri, Amurin Leice, Valim Fernanda, Fechine Guilhermino	**S04-21: Oral** Influence of the contacting on the resistance heating of carbon fiber reinforced thermoplastics **Wellekötter Jochen,** Bonten Christian	**S01-108: Oral** Soft PDMS 3D printing: Enhancing the yield stress for very low Young modulus medical devices. **Perrinet Clément,** Fulchiron René, Courtial Edwin-Joeffrey, Marquette Christophe, Colly Arthur
15h40 – 16h00	**S07-14: Oral** Smart machines: A new approach for optimizing the residual cooling time in injection molding **Geyer Alexander,** Bonten Christian	**S02-156: Oral** Chemical modification of sugarcane bagasse with chitosan for the removal of phosphates in aqueous solution Manyatshe Alusani, **Balogun Mohammed,** Nkambule Thabo, Cele Zamani, Msagati Titus	**S03-130: Oral** Thermal reduced graphene (TRG)/molybdenum disulfide (MoS2) nano hybrid material for supercapacitor application **Jena Kishore Kumar,** Aihassan Saeed M	**S04-41: Oral** Thermally conductive epoxy nanocomposites with h-BN, graphene and hybrid filler systems **Mural Prasanna Kumar S,** P V Bindu Bhargavi, Chandran Akash M	**S01-190: Oral** 3D printable bio-based nano-composites filaments containing nanocellulose derived from forestry waste residues: Production and analysis **Agbakoba Victor Chike,** Muniyasamy Sudhakar, Hlangothi Percy C, Ofosu Osei, Mokhena Teboho C, John Maya Jacob

Tuesday, November 19 Continued

16h00 – 16h30 Coffee Break, Foyer (Poster set-up, Foyer)

	Parallel Session I	Parallel Session II	Parallel Session III	Parallel Session IV	Parallel Session V
VENUE	DIAMOND	RUBY	EMERALD	AMBER	AMETHYST
16h30 – 16h50	**S07-20: Oral** Investigation of temperature increase by microwave application in material drying **Schaible Tobias,** Kast Oliver, Bonten Christian	**S02-170: Oral** Improvement of mechanical properties of Biodegradable PHBH Fibers through High-Speed Melt Spinning Process Equipped with a Liquid Isothermal Bath **Takarada Wataru,** Miyao Yuki, Kikutani Takeshi	**S03-133: Oral** Development of chlorine resistant and anti-fouling water treatment membranes from chemically functionalized- graphene oxide and polyamide composite **Matshetshe Kabo Isaac,** Sikhwivhilu Keneiloe, Ndlovu Gebhu, Tetana Zikhona, Moloto Nosipho	**S04-62: Oral** Morphology development and mechanical properties of immiscible PA66/PPE blends: Effects of the mixing protocol and compatibilizer type **Aksit Alper,** Altstaedt Volker	**S07-206: Oral** Computational rheology et al. @ UMinho **Nóbrega Joao Miguel,** Fernandes Célio, Carneiro Olga Sousa
16h50 – 17h10	**S07-23: Oral** Investigation on the Processability of Sheets for Thermoforming **Müller Dominik,** Bonten Christian	**S02-175: Oral** Surface Modified Carbon Nanofillers in Poly (butylene Succinate): 'Dispersion versus Crystallization Kinetics **Ozkoc, Guralp**	**S03-144: Oral** Ternary metal layered double hydroxides (LDHs) by urea hydrolysis method, applications in polymer Naseem Sajid, Gevers Bianca, **J.W.J. Labuschagné Frederick,** Leuteritz Andreas	**S04-63: Oral** Simultaneous Realization of Conductive Segregation Network Microstructure and Minimal Surface Porous Macrostructure by SLS 3D Printing Xinpeng Gan, Jinzhi Wang, Zhanhua Wang, Guoxia Fei, **Hesheng Xia**	**S07-82: Oral** Hot gas welding – influences of the tool design **Albrecht Mirko,** Gehde Michael, Bialaschik Max, Schöppner Volker
17h10 – 17h30	**S07-24: Oral** Influence of the fiber preheating in in-situ pultrusion of continuous fiber-reinforced thermoplastic profiles **Thieleke Philipp,** Bonten Christian	**S02-184: Oral** Extruded cellulose/ionic liquid-based carbon scaffolds **Oosthuizen Hester,** du Toit Elizabeth, Focke Walter	**S03-150: Oral** The use of nanomedicine in improving herbal medicine active extracts **Mvango Sindisiwe,** Mthimkhulu Nompumelelo, Fonteh Pascaline, Pilcher Lynne, Balogun Mohammed	**S04-64: Oral** Exploring the potential of polyethylene/epoxy/ graphite composite as bipolar plate material for proton exchange membrane fuel cell **Alo Oluwaseun Ayotunde,** Otunniyi Iyiola Olatunji, Pienaar Christo	**S07-84: Oral** Application of machine learning in PVC profile extrusion **Prechtl Maximilian**
17h30 – 17h50	**S07-27: Oral** Calibration of models to predict the fiber microstructure of LFRT **Reitinger Philip,** Willems Fabian, Bonten Christian	**S02-210: Oral** Green materials from sustainable cellulose Araujo David, Castro Cidalia, **Machado Ana Vera**	**S03-176: Oral** Thermal stability of surfactant on polymer nanocomposite during melt processing **Khoza Mary**	**S04-68: Oral** Thermal post treatment of highly filled compounds for fuel cells **Kayser André**	**S07-136: Oral** Simulation of flow through an injection molding machine non-return valve; influence of material parameters **Fechter Reinhard,** Liang Leijie, Fischer Matthieu, Kuehnert Ines

17h50 – 18h00 Drinks, Foyer

18h00 – 19h30 RUBY

SAASTA FameLab Heat (Science Communication Competition)
Coordinator: Ms Hulde Fischer
Topic: Polymer Processing Changing the World around Us
This is a joint initiative with SAASTA

19h30 – 21h30 Outdoor Deck

Social with South African BBQ

07h30 – 16h30	Registration	Foyer
07h30 – 08h30	Breakfast	Foyer
08h30 – 10h20	Plenary & Special Lectures	Diamond
10h20 – 10h40	Coffee Break (Poster Setup at Foyer)	Foyer
10h40 – 13h30	Parallel Sessions	
13h20 – 14h00	Lunch	Outdoor Deck
14h00 – 15h30	Parallel Sessions	
15h30 – 16h00	Coffee Break	
16h30 – 18h00	Parallel Sessions	
18h00 – 19h30	Poster Presentation with light refreshment	Foyer
19h30 – 21h30	Conference Gala Dinner	At CSIR ICC Dining Hall

Plenary and Special Lectures Sponsored by

Conference Gala Dinner Sponsored by

PLENARY AND SPECIAL LECTURES, DIAMOND

08h30 – 10h20	**Plenary and Special Lectures** Session Chair: Professor Sati N. Bhattacharya Session Coordinator: Dr. Reza Salehiyan
08h30 – 09h10	**Plenary III:** Nanocellular materials with environmental impact: From insulating foams to "smart" membranes Professor G. Julius Vancso, University of Twente, The Netherlands
09h10 – 09h50	**Plenary IV:** Polymer Nanocomposites Professor Sanat Kumar, Columbia University, United States of America
09h50 – 10h20	**Special Lecture Series II:** Invigorating translational R&D in South Africa Polymer Industry: A case of DST/CSIR Nanomaterials Industrial Development Facility Dr. Vincent Ojijo, Council for Scientific and Industrial Research, South Africa

10h20 to 10h40 Coffee Break, Foyer

VENUE	DIAMOND	RUBY	EMERALD	AMBER	AMETHYST
10h40 – 13h20	**Parallel Session I** Session Chairs: Dr. Ines Kuehnert Dr. Prasanna Kumar S Mural Session Coordinator: Dr. Tladi Mofokeng	**Parallel Session II** Session Chairs: Prof. Minna Hakkarainen Prof. Rafael A. Auras Session Coordinator: Dr. Kuruma Malkappa	**Parallel Session III** Session Chairs: Dr. Andreas Leuteritz Dr. Phumlani Msomi Session Coordinator Dr. Neeraj Kumar	**Parallel Session IV** Session Chairs: Prof. Spiros Anastasiadis Prof. Debes Bhattacharyya Session Coordinator: Mr Sifiso Skosana	**Parallel Session V** Session Chairs: Prof. John Vlachopoulos Prof. Fugen Daver Session Coordinator: Ms Muano Mukununde
10h40 – 11h10	**S07-226: Keynote** Film blowing of PHA-based systems for home compostable food packaging films Teixeira Paulo F, Covas José A, Hilliou Loic	**S02-112: Keynote** Environmentally friendly and animal free leather: Fabrication and characterization Saha Nabanita, Ngwabebhoh Fahanwi Asabuwa, Nguyen HauTrung, Saha Petr	**S03-221: Keynote** Hydrothermally synthesized nanostructures for water treatment and forensic applications Pillay Kriveshini	**S04-204: Keynote** Moisture Absorption and Degradation of Micro- and Nanocomposite Laminates Altan M. Cengiz, Guloglu Gorkem E.	**S09-1: Keynote** Advanced materials from deprotinized natural rubber latex with silica Trung Nghia Phan

Wednesday, November 20

	Parallel Session I	Parallel Session II	Parallel Session III	Parallel Session IV	Parallel Session V
VENUE	DIAMOND	RUBY	EMERALD	AMBER	AMETHYST
11h10 – 11h40	**S07-174: Keynote** High energy electrons – an innovative activator in reactive compounding processes, an overview of chances and challenges Mueller Michael Thomas, Zschech Carsten, Gohs Uwe, **Wagenknecht Udo**	**S02-187: Keynote** Multiphase polylactide-based systems with enhanced processability and extended applications **Nofar Mohammadreza**	**S08-33: Keynote** Review on tube model based constitutive equations for polydisperse linear and long-chain branched polymer melts **Narimissa Esmaeil**	**S04-209: Keynote** Biomimetic nanocoatings with exceptional mechanical, barrier, and flame retardant properties Ding Fuchuan, Liu Jingjing, Chavez Sonia E., LaChance Anna Marie, Shaw Montgomery T., **Sun Luyi**	**S09-47: Keynote** Piezoresistivity – A novel and powerful tool to monitor the behavior of filler networks in rubber **Wiessner Sven,** Bhagavatheswaran Eshwaran Subramani, Das Amit, Heinrich Gert
11h40 – 12h00	**S07-138: Oral** Data Driven Modeling in Polymer Recycling – Modeling the Pressure Loss of Non-Newtonian Polymer Melt Flows in Melt Filtration Systems **Pachner Sophie,** Roland Wolfgang, Aigner Michael, Stritzinger Ursula, Miethlinger Jürgen	**S02-247: Invited Oral** Starch modification with lipids to change the material properties **Mohammad Naushad Emmambux**	**S03-207: Oral** Endowing carboneous materials with reactive amine functionalities Zimmerer Cordelia, Silva Cláudia, Pötschke Petra, **Simon Frank**	**S04-98: Oral** Mechanical properties of cellulose nanofiber reinforced polypropylene **Genoyer Julie,** Mustapha Rihab, Favre Manon, Demarquette Nicole Raymonde, Lentzakis Helen, Khadri Diallo Abdou	**S09-52: Oral** Nitrile rubber as an alternative accelerator's activator in sulphur vulcanisation system **Hait Sakrit,** Valentín Juan Lopez, Stöckelhuber Klaus Werner, Wiessner Sven, Heinrich Gert, Das Amit
12h00 – 12h20	**S07-28: Oral** Influence of injection molding parameters on the quality of structured surfaces **Schönlein Richard,** Schaible Tobias, Bonten Christian	**S02-229: Oral** Biobased pro-oxidant additive technology for packaging ecological solutions **Gada Abongile,** Muniyasamy Sudhakar, Hoyo Catherine, Hlangothi Percy, Melariri Paula, Bonner Jamie	**S02-219: Oral** Biodegradability of biopolymers, their blends and biocomposites in natural environments **Muniyasamy Sudhakar,** Nomadolo Nomvuyo, Mtibe Asanda, Ofosu Osei	**S04-100: Oral** Understanding the influence of manufacturing and material parameters on the mechanical properties of polymer-clay composites: An exploratory statistical analysis **Botha Natasha,** Coetzer Roelof, Inglis Helen, Labuschagne Johan	**S09-162: Invited Oral** A comparison of new generation lab-scale twin-screw micro-compounders with conventional rubber compounding devices Yazici Nazlı, Tabak Ceren, Kodal Mehmet, **Ozkoc Guralp**
12h20 – 12h40	**S07-30: Oral** Application of the immersed boundary surface method in openFOAM **Kettemann Jochen,** Bonten Christian	**S02-244: Oral** Bio-based polymeric systems for UV-assisted 3D printing Anda Barkane, Sergejs Gaidukovs, Oskars Platnieks, Nejib Kasmi, **Youssef Habibi**	**S07-56: Oral** Heated tool welding of thick-walled components **Friedrich Fabian**	**S04-132: Oral** Thermal and mechanical properties of investment casting pattern material based on paraffin wax fortified with LLDPE and filled with PMMA **Tewo Robert Kimutai,** Rutto Hilary Limo, Focke Walter Wilhelm, Ramjee Shatish, Seodigeng Tumisang	**S10-25: Oral** Biobased smart materials for processing via fused layer modeling **Kliem Silvia,** Cheng Tiffany, T ahouni Yasaman, Tewo Robert Kimutai, Rutto Hilary Limo, Focke Walter Wilhelm, Ramjee Shatish, Seodigeng Tumisang
12h40 - 13h00	**S07-31: Oral** Numerical 3D simulation of a co-kneader in openFOAM **Kattinger Julian,** Kettemann Jochen, Bonten Christian	**S02-245: Oral** Hydrophobization of cellulose nanofibres from saw dust using canola oil **Mokhena T.C.** and John M.J.	**S07-194: Oral** Predictive maintenance using classification and regression methods for non-return values in injection molding machines **Zhao Chen-Liang,** Knott Johannes, Schiffers Reinhard	**S04-179: Oral** Modeling of the thermomechanical behavior of shape memory polymers Rieder Richard, **Kallel Achraf,** Mehrle Andreas, Tcharkhtchi Abbas	**S10-252: Invited Oral** Simultaneous Realization of Conductive Segregation Network Microstructure and Minimal Surface Porous Macrostructure by SLS 3D Printing Xinpeng Gan, Jinzhi Wang, Zhanhua Wang, Guoxia Fei, **Hesheng Xia**

	Parallel Session I	Parallel Session II	Parallel Session III	Parallel Session IV	Parallel Session V
VENUE	DIAMOND	RUBY	EMERALD	AMBER	AMETHYST
13h00 – 13h20	**S07-32: Oral** Benchmark study of the weathering of engineering resins Alkarri Saleh	**S05-158: Oral** Rapid degradation of Methyl Orange dye using trimetallic Fe/Cu/Ag nanoparticles Kgatle Masaku, Sikhwivhilu Keneiloe, Ndlovu Gebhu, Moloto Nosipho	**S07-153: Oral** Upscaling of a continuous electron induced reactive processing for high-performance polymers Zschech Carsten, Wagenknecht Udo, Pech Mathias, Müller Michael, Wießner Sven, Gohs Uwe	**S04-225: Oral** Gas sensing performance of zinc oxide and zinc oxide/carbon nanotubes composite Chauke Hleko, Nyembe Sanele, Malinga Soraya, Moothi Kapil	**S10-198: Oral** Hybrid stimuli responsive polymers for soft robotic applications Sun Yu-Chen, Naguib Hani E
13h20 – 14h00 Lunch, Outdoor Deck					
VENUE	DIAMOND	RUBY	EMERALD	AMBER	AMETHYST
14h00 – 15h30	**Parallel Session I** Session Chairs: Prof. Christian Hopmann Prof. Julien Ville Session Coordinator: Ms Lesego Maubane	**Parallel Session II** Session Chairs: Prof. Ica Manas-Zloczower Prof. Christian Bonten Session Coordinator: Ms Koena Selatile	**Parallel Session III** Session Chairs: Prof. Volker Altstädt Dr. Pötschke Petra Session Coordinator: Ms Rudo Bhembe	**Parallel Session IV** Session Chairs: Prof. Dimitrios Bikiaris Prof. Tushar Jana Session Coordinator: Ms Thembisile Patience	**Parallel Session V** Session Chairs: Prof. Manfred Schmid Prof. Youssef Habibi Session Coordinator: Mr Mondle A. Masanabo
14h00 – 14h30	**S07-232: Keynote** Modern approaches to determine the Fiber Orientation in reinforced thermoplastics Marc Kreutzbruck	**S05-69: Keynote** Orientation, Nanocomposites and Renwable Materials for Sustainable Packaging Ajji Abdellah	**S06-229: Keynote** Exfoliation of GnPs in PP/GnP Nanocomposites with Low Expansion Ratios Using Supercritical CO2 Jun Wang, Chongxiang Zhao, Lun Howe Mark, Xiaoyan Wang, Ruosong Li, Nima Moghimian, Chul B. Park	**S08-104: Keynote** Piezoelectric behavior improvement of polyethylene ferroelectrets Hamdi Ouassim, Mighri Frej, Rodrigue Denis	**S02-196: Keynote** Prospective and challenges of natural fiber based composite Anwer Muhammad, Naguib Hani E
14h30 – 15h00	**S07-230: Keynote** Advanced Polyolefin Materials: Key for Sustainability Virendra Kumar Gupta	**S05-115: Keynote** Antistatic fibers for high-visibility workwear Hufenus Rudolf	**S06-248: Keynote** Rapid Crystallization of Bisphenol A Polycarbonate Induced Synergistically by Pressure and Flow Xi-Xi Zhang, Zhong-Ming Li	**S08-58: Keynote** An analysis of transcrystallinity in polymers on various substrates Boyer Severine A.E., Haudin Jean-Marc, Billon Noelle, Freire Lionel, Combeaud Christelle, Navard Patrick, Peuvrel-Disdier Edith	**S02-215: Keynote** Biodegradable plastics: Is a solution or problem Ramesh Babu P
15h00 – 15h30	**S07-253: Keynote** Numerical process simulation for extrusion using correlated stochastic shear viscosity data F. Desplentere, W. Six, S. Deceura	**S05-211: Keynote** Development of polylactide fibers consisting of highly oriented stereo-complex crystals through bicomponent melt spinning of PLLA and PDLA Roungpaisan Nanjaporn, Takarada Wataru, Kikutani Takeshi	**S10-36: Keynote** Viscoelastic hydrogel substrates regulate breast cancer metastasis and epithelial–mesenchymal transition Okamoto Masami, Ishikawa Yuma, Sasaki Rie	**S10-38: Keynote** Ionic UCST polymers: Thermosensitive dispersants for layered nanomaterials Mandal Tarun K	**S02-231: Keynote** Preparation of eco-friendly electronic packaging materials based on polylactide/poly (ε-caprolactone)/graphene oxide-based composites James Ramontja

15h30 – 16h00 Coffee Break, Foyer					
	Parallel Session I	**Parallel Session II**	**Parallel Session III**	**Parallel Session IV**	**Parallel Session V**
VENUE	**DIAMOND**	**RUBY**	**EMERALD**	**AMBER**	**AMETHYST**
16h00 – 16h20	**S07-45: Oral** Rheology and simulation studies on single-screw extrusion of wood-polymer composites **Wilczy´nski Krzysztof,** Buziak Kamila, Lewandowski Adrian, Wilczyński Krzysztof J, Nastaj Andrzej	**S05-66: Oral** Lead acid batteries: The role of silica interface in the enhancement of the accessible porosity by the electrolyte in a UHMWPE-silica separator composite. **Abou Taha Mohammad,** Fulchiron René, Bounor-Legaré Véronique, Fumagalli Matthieu, Schlegel Brice, Sierra Salazar Andrés Felipe, Chaussée Thomas, Valente Jules, Pinault Anne-Laure	**S06-70: Oral** A critical view on the role of dynamic solubility limits and large gas contents in injection foam molding **Kastner Clemens**	**S08-15: Oral** Rigid amorphous fraction caused by particle-polymer-interaction in highly filled plastics **Benz Johannes,** Bonten Christian	**S02-186: Oral** Dextrin nanocomposites as matrices for solid dosage forms Venter Jaco-Louis, **Phillips Justin,** Oosthuizen Hester, Emmambux Naushad, du Toit Elizabeth, Focke Walter
16h20 – 16h40	**S07-48: Oral** A hybrid modeling approach to predicting the flow in single-screw extruders: Part A. Model development **Roland Wolfgang,** Marschik Christian, Miethlinger Juergen, Steinbichler Georg	**S05-101: Oral** Design and characterization of PE/PA6 mutlinanolayer films: effect of layer size on structural and transport properties **Lozay Quentin,** Follain Nadège, Guinault Alain, Sollogoub Cyrille, Beuguel Quentin, Lebrun Laurent, Dargent Eric, Marais Stéphane	**S06-74: Oral** Welding of foam injection molded parts – Analysis of the process – material – structure – property relations **Hofmann Karoline,** Gehde Michael, Altstädt Volker	**S08-123: Oral** Understanding the link between orientation and anisotropy in the thermal conductivity of polymers: A molecular dynamics study. **Nieto Simavilla David** Verbeeten Wilco M.H., Theodorou Doros N.	**S07-235: Oral** Reactive Interphase Formation and its Molecular Characterization as Key Points to design reactive processing technology of Polycarbonate **C. Zimmerer,** Frank Simon, A. Janke, K. Arnhold
16h40 – 17h00	**S07-46: Oral** A hybrid modeling approach to predicting the flow in single-screw extruders: Part B. Model validation **Marschik Christian,** Roland Wolfgang, Miethlinger Juergen, Steinbichler Georg	**S05-110: Oral** Melt-spun DEET-containing bicomponent poly(lactic acid) filaments **Ferreira Ignatius,** Leuteritz Andreas, Brünig Harald, Focke Walter	**S06-81: Oral** Controlling the morphology of thermoplastic polymer foams by supramolecular foam nucleating agents **Schmidt Hans-Werner**	**S08-126: Oral** Microinjection molding simulation - New insights into process-morphology-property correlations **Fischer Matthieu,** Kuehnert Ines	**S11-17: Oral** Reactive compounding of intrinsically flame-resistant polyamides **Pagel Sinja,** Benz Johannes, Mourgas Georgios, Buchmeiser Michael, Bonten Christian
17h00 – 17h20	**S07-49: Oral** The moving least square aided finite element method (MLS-FEM): a powerful means to evaluate mixing phenomena in fully filled polymer mixing devices **Mostafaiyan Mehdi,** Wiessner Sven, Heinrich Gert	**S05-114: Oral** Fabrication of novel nanogenerator from PVDF nanocomposites encompassing hybrid silanized MWNTs **Mural Prasanna Kumar S,** Chandran Akash M, S Varun	**S06-89: Oral** Rigid polyurethane foams as cryogenic insulation obtained from renewable raw materials and modified with nanocrystalline cellulose **Cabulis Ugis**	**S08-128: Oral** Investigation on crystallization kinetics and injection-molding induced crystallization of isotactic polypropylene **Spoerer Yvonne,** Boldt Regine, Androsch René, K uehnert Ines	**S11-247: Oral** Preparation and Modification of Repeatedly Processable Polymer under Low Temperature **Jun Lei,** Jia-Ning Qiao, Zhong-Ming Li

	Parallel Session I	Parallel Session II	Parallel Session III	Parallel Session IV	Parallel Session V
VENUE	DIAMOND	RUBY	EMERALD	AMBER	AMETHYST
17h20 – 17h40	**S07-78: Oral** A novel method for efficient engineering design of sheet dies by means of fluid dynamics **Celik Alptekin,** Bonten Christian	**S05-143: Oral** The glass transition temperature of Polymers of Intrinsic Microporosity (PIMs) as determined by fast scanning calorimetry **Boehning Martin,** Yin Huajie, Chua Yeong Zen, Yang Bin, Schick Christoph, Schoenhals Andreas	**S06-161: Oral** Identification of the polyurethane viscosity during foaming **Agassant Jean-François,** Laure Patrice, Vincent Michel, Raimbault Clement, Boyer Severine, Francois Guillaume, Royer Vincent	**S08-140: Oral** Addressing ESC with FNCT enhanced by optical fracture surface analysis **Schilling Markus,** Niebergall Ute, Böhning Martin	**S11-18: Oral** Reactive extrusion of cast polyamide **Pagel Sinja,** Bonten Christian
17h40 – 18h00	**S07-80: Oral** Application of a convolutional neural network in polymer injection foam molding **Kobler Eva Maria,** Kastner Clemens, Steinbichler Georg	**S05-195: Oral** Removal of heavy metal ions from acid mine drainage (AMD) using thin film nano-composite (TFN) membranes **Ramokgopa Selaelo Kholofelo**	**S06-239: Invited Oral** Online cure monitoring using DEA **i.A. Dr. Tobias Pflock**	**S08-243: Oral** Enhanced oxidation stability of highly crosslinked ultrahigh molecular weight polyethylene by using tea polyphenols for total joint implants Yue Ren, **Jia-Zhuang Xu,** Zhong-Ming Li	**S11-85: Oral** Characterisation of infrared heat-moisture treated maize starch with stearic acid **Mapengo Clarity Ropafadzo**
18h00 – 19h30 FOYER					
Poster Presentation and Poster Judgment with Light Refreshment					
19h30 – 21h30 CSIR ICC Dining Hall					
Conference Dinner					

Thursday, November 21

08h00 – 10h30	Registration	Foyer
08h00 – 09h00	Breakfast	Foyer
09h00 – 11h20	Plenary & Special Lectures	Diamond
11h20 – 12h00	Coffee Break	Foyer
12h00 – 13h30	Parallel Sessions	
13h30 – 14h30	Lunch	Outdoor Deck
14h30 – 15h00	Prize Distribution and Conference closing Ceremony	Ruby
15h00 – 18h00	**Site Visit:** Centre for Nanostructures and Advanced Materials (CeNAM), DSI-CSIR Nanotechnology Innovation Centre, Council for Scientific and Industrial Research	CSIR Campus, Building 14C/D; 19/A/B/C; 23
15h00 – 18h00	PPS Executive Committee Meetimg	CeNAM

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PLENARY AND SPECIAL LECTURES, DIAMOND

09h00	**Plenary and Special Lectures** Session Chair: Professor Sadhan C. Jana Session Coordinator: Dr. Reza Salehiyan
09h00 – 09h40	**Plenary V:** Mission of the Century - Resource Efficiency with Plastics and Plastics Technology Professor Christian Bonten, University of Stuttgart, Germany
09h40 – 10h20	**Plenary VI:** Understanding Processability for Translational Research and High-end Applications Development Professor Anup K. Ghosh, Indian Institute of Technology Delhi, India
10h20 – 10h50	**Special Lecture Series III:** Essential Characteristics and the Importance of Polymeric NanoMaterials in Biological, BioMedical & Medical Applications in Modern-Day Health Delivery Systems Professor Emmanuel Sadiku, Tshwane University of Technology, South Africa
10h50 – 11h20	**Special Lecture Series IV:** Melt-mixed thermoplastic polymer-CNT composites as thermoelectric materials for energy conversion Dr. Pötschke Petra, IPF Dresden, Germany
11h20 – 12h00	Coffee Break, Foyer

VENUE	DIAMOND	RUBY	EMERALD	AMBER
12h00 – 12h30	**Parallel Session I** Session Chair: Prof. Okamoto Masami Session Co-ordinator: Dr. Nishu Hooda	**Parallel Session II** Session Chair: Prof. Takeshi Kikutani Session Co-ordinator: Dr. Rashi Gusani	**Parallel Session III** Session Chair: Session Coordinator: Ms Andrea Josiah	**Parallel Session IV** Session Chair: Prof. James Ramontja Session Coordinator: Dr. Neeraj Kumar
12h30 – 13h00	**S07-139: Oral** Inline material characterisation for mechanical recycling of polymers Haider Stephanie, Aigner Michael, Kammerer Lukas, Kronberger Gabriel, Hild Sabine **S07-163: Oral** Comparison of feature selection methods for machine learning based injection molding quality prediction Schulze Struchtrup Alexander, Kvaktun Dimitri, Schiffers Reinhard	**S05-224: Keynote** Fabrication of novel nanocomposites as modifiers in polyethersulfone UF/NF membranes for wasterwater reclamation Matebese Funeka Motlhaletsi, Moutloali Richard Motlhaletsi	**S10-105: Keynote** Anisotropic hydrogels formed by magnetically-oriented nanoclay suspensions for wound dressings Yook Sungho, Shams Es-Haghi Siamak, Yildirim Armen, Mutlu Zeynep, Cakmak Mukerrem	**S11-173: Keynote** Segmented polyurethanes of metal linked polybutadie Jana Tushar
13h00 – 13h30	**S07-169: Oral** Condition monitoring for injection molding screws Fruth Sebastian, Kruppa Stefan, Schiffers Reinhard **S07-172: Oral** An experimental study on process-oriented scale-up / scale-down in blown film extrusion Dohm Christoph, Schiffers Reinhard **S07-197: Oral** The influence of processing on the mechanical properties and emissions of a recycled polyolefin Höftberger Thomas, Burgstaller Christoph	**S05-246: Keynote** Insecticide blooming polyethylene films and meshes António B Mapossa, Walter W Focke, René Androsch	**S07-249: Keynote** Effect of the feedstock composition on the processing and final properties of ceramics produced by fused filament fabrication Santiago Cano, Joamin Gonzalez-Gutierrez, Philipp Huber, Christian Kukla, Stephan Schuschnigg, Ali Gooneie, Tanja Lube, Alberto Gallego, Gemma Herranz, Clemens Holzer	**S09-253: Keynote** Flow Visualization of Rubber Compounds Evan Mitsoulis, Sebastian Stieger, Roman Kerschbaumer, Walter Friesenbichler
13h30 – 14h30 Lunch, Outdoor Deck				
14h30 – 15h00 RUBY				
Prize Distribution and Conference Closing Ceremony				
15h00 to 18h00 Site Visit: Centre for Nanostructures and Advanced Materials (CeNAM), DSI-CSIR Nanotechnology Innovation Centre International Polymer Processing Society Executive Committee Meeting, CeNAM				

Poster Presentation Schedule Continued

Poster Setup	Tuesday 19th November – 10h30 onward
Poster Presentation	Wednesday 20th November – 18h00 to 19h30
Poster Removal	After Presentation
Venue	Foyer
Session Coordinators	Dr. Thomas Malwale, Dr. Rashi Gusain, Dr. Nishu Hooda, and Mr John Letwaba

Poster Presentation Supported By

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S01-60	How to go to a better understanding of defaults in 3D printed bio-polymers **BOYER Severine A.E.**, BURR Alain
S01-77	The printability of chocolate shapes in 3D-gel printer **BOYER Severine A.E.**, BURR Alain
S01-93	A 3D printing route targeting shoe comfort improvement **Carneiro O S,** Silva A F, Oliveira J, Nóbrega J M, Teixeira R
S01-119	3D printed ferromagnetic composites for microwave applications Arbaoui Younès, Agaciak Philippe, Chevalier Alexis, Laur Vincent, Maalouf Azar, **Ville Julien,** Roquefort Philippe, Aubry Thierry, Queffelec Patrick
S01-200	Smart polymeric materials applied to Industry 4.0: a review on electrochromic textiles Ramlow Heloisa, Andrade Karina Luzia, Marangoni Cintia, **Machado Ricardo**
S02-86	Preparation and characterization of curcumin-loaded chitosan nanoparticles incorporated in collagen scaffolds for the transdermal treatment of psoriasis **Terzopoulou Zoi,** Michopoulou Anna, Palamidi Artemis, Bikiaris Dimitrios
S02-97	Development of bacterial resistance electrospun polylactide membrane for air filtration application: effect of reduction methods and their loadings **Selatile Mantsopa Koena,** Ray Suprakas Sinha, Ojijo Vincent
S02-111	Synthesis and study of a novel bio-based unsaturated polyester resin based on succinic acid **Chrissafis Konstantinos**
S02-116	Structure and properties of poly (lactic acid)/poly (ε-caprolactone) blends containing cellulose nanocrystals-The influence of filler concentration on thermal, rheological, and mechanical properties **Motloung Mpho Phillip,** Ojijo Vincent, Bandyopadhyay Jayita, Sinha Ray Suprakas
S02-155	Synthesis and environmental performance of bio-polyols from tall oil fatty acids suitable for polyurethane production **Fridrihsone Anda**
S02-167	Dealing with time-changing materials using random-frequency sweeps **Shaw Montgomery**
S02-171	Mechanical, thermal and viscoelastic properties of poly (butylene succinate) and thermoplastics protein blends **Mtibe Asanda**
S02-178	Formulation and material properties of thermoplastic maize starch-zein composite films manufactured by melt blending under alkaline conditions **Masanabo Mondli Abednicko,** Emmambux Mohammad Naushad, Ray Suprakas Sinha
S02-203	Processing of polymers and essential oil in supercritical carbon dioxide – A Taguchi experimental design approach **Akolade Jubril Olayinka,** Swanepoel Andri, Balogun Mohammed, Yusuf Abdullahi Ahmed, Onyenekwe Paul Chidozie, Labuschagne Philip
S02-220	Environmental biodegradation of biopolymers and biopolymer blends in soil and compost environments **Nomadolo Nomvuyo**
S02-241	Processing and characterization of biodegradable and bio-based polyesters/cellulose composites Oskars Platnieks, Anda Barkane, Inese Filipova, **Youssef Habibi,** Sergejs Gaidukovs
S03-37	Enhanced thermo-mechanical stiffness, thermal stability, and fire retardant performance of surface-modified 2D MoS2 nanosheet-reinforced polyurethane composites **Kuruma, Malkappa**
S03-55	Removal of silver from water using thiol-modified magnetic polypyrrole nanocomposites and subsequent re-use of secondary waste for bacteria inactivation **Mahlangu Thembisile Patience,** Maity Arjun, Sihna Ray Suprakas, Onyango Maurice
S03-113	Viscoelastic behavior of calcium phosphate packed bacterial cellulose -polyvinylpyrrolidone based hydrogel scaffolds at human fever temperature Basu Probal, **Saha Nabanita,** Zaandra Oyunchimeg, Saha Petr
S03-159	Electrochemical characterization of nanoparticles and non-enzymatic glucose detection on in-house produced screen printed electrodes (SPEs) **Mphuthi Ntsoaki**
S03-168	Mosquito repellent microporous polyolefin strands **Mapossa António Benjamim**
S03-177	Multifunctional polyamide composite films attractive for flexible packaging applications **Botlhoko Orebotse**
S03-180	Combined effect of supramolecular poly(cyclotriphosphazene-co-4,4'-sulfonyl diphenol)-functionalised melamine cyanurate hybrid nanosheets on the enhanced fire-retardant performance of polyamide 6 composites **Kuruma, Malkappa**
S03-185	Thermal Properties and Non-isothermal Crystallization Kinetics of Polypropylene nanocomposite **Bandyopadhyay Jayita,** Sinha Ray Suprakas, Mekoa Raphaahle, Skosana Sifiso
S03-189	Interfacial rheology of oil-(polymers/aqueous nanofluids) **Kamkar Milad,** Fuller Gerald G, Sundararaj Uttandaraman
S03-199	A Demonstration of the circularity concept for water purification using bionanocomposite hydrogel **Kumar Neeraj,** Mittal Hemant, Alhassan Saeed M., Ray Suprakas Sinha
S03-223	Catalytic filtration membranes for textile wastewater treatment **Kayumba Banielle**
S04-90	Crosslinked polyethylene composites with graphite-based fillers for geothermal pipe applications **Bikiaris Dimitrios,** Terzopoulou Zoi, Kourtidou Dimitra, Tarani Evangelia, Chrissafis Konstantinos

S04-121	Use of PCC cellulose fiber hybrids as filler in polypropylene based compounds Lutsch Birgit, Zahel Martin, Arndt Tiemo, Kuehnert Ines, **Leuteritz Andreas**
S04-134	Influence of carbon nanotube migration on the rheological, electrical conductivity and electromagnetic interference shielding properties of polylactide/poly(vinylidene fluoride) blend nanocomposites **Salehiyan, Reza**
S04-151	The influence of nanoclay localization on morphological development, thermal and rheological properties of PP/LDPE/clay nanocomposites **Mofokeng Tladi Gideon,** Ojijo Vincent, Ray Suprakas Sinha
S04-157	Strong and multifunctional nanocomposites enabled by cellulose derived carbon dots **Adolfsson Karin H.,** Erdal Nejla B., Wu Huan, Hakkarainen Minna
S04-191	Influence of dynamic revulcanization of ground tire rubber in the blends composed of high-density polyethylene/ground tire rubber devulcanized by microwaves **de Sousa Fabiula Danielli Bastos,** Scuracchio Carlos Henrique
S04-192	Influence of the addition of clays in dynamically revulcanized blends composed of high-density polyethylene/ground tire rubber devulcanized by microwaves **de Sousa Fabiula Danielli Bastos,** Scuracchio Carlos Henrique
S04-213	A study of the morphology and impact strength of rice husk/low density polyethene composites **Abdullahi Zakari,** K Sunmonu O, S Ishiaku U, Benjamin Dauda, Gabi Baba
S04-217	Determination of thermal conductivity of compound based bipolar plates for HT-PEM fuel cells with different measuring methods **Stannek Paul,** Grundler Marco
S05-149	The reaction mechanism and thermal analysis of poly vinyl butyral cast films with different organic solvents **Motlatle Abesach Moshalagae,** Bothloko Orebotse Joseph, Scriba Manfred R, Ojijo Vincent, Ray Suprakas Sinha
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