

Session Topics:	Characterisation and testing of materials & products	Material Developments	Sustainability	Modelling	Smart Materials	Elastomer Product Innovations	Material Processing
	Chairs: Jorge Lacayo Pineda, Ulrich Giese, Toshio Tada, Erick Sharp	Chairs: Anke Blume, Fabian Grunert	Chairs: Martyn Bennett, Ulrich Giese	Chairs: Keizo Akutagawa, Toshio Tada	Chairs: Leif Kari, Khai Nguyen	Chairs: Abilash Nair, Izaak Watson	Chairs: Abilash Nair, Lewis Tunncliffe, Izaak Watson

9/5/2023

John McIntyre Conference Centre						South Hall Complex	
Pentland			Prestonfield	St Trinneans		South Hall	Kirkland
09:00 - 17:00			Poster Board Setup				
19:00 - 19:20			Conference Registration & Welcome Reception				
19:20 - 19:30			Welcome Address: Martyn Bennett				
19:30 - 20:30			Welcome Reception Cont. & Poster Pitch Session		Shell Scheme Setup		

10/5/2023

	John McIntyre Conference Centre						South Hall Complex			
	Pentland East		Pentland West		Prestonfield		St Trinneans		South Hall	Kirkland
Capacity	160		160		135		50		300	
08:30 - 08:50	Registration								Morning Coffee	
08:50 - 09:00	Welcome Address: James Busfield, Queen Mary University of London & IOM3 Elastomer Group									
09:00 - 09:30	Plenary Session 1: Ligu Zhang, Beijing University of Chemical Technology Advanced Elastomer Nanocomposites Aiming At Carbon Peaking And Carbon Neutrality Goals (16)									
09:30 - 10:00	Plenary Session 2: Jorge Lacayo-Pineda, Continental Tires Evaluating rCB Capabilities for Rubber Reinforcement (6)									
10:00 - 10:20	Pentland Dividing into Pentland East & West				Poster Session				Refreshments & Networking	
10:20 - 10:45										
10:45 - 11:10	Chair: Ulrich Giese	Vishal Patil, UPM Biochemicals GmbH UPM BioMotion™ Renewable Functional Fillers (RFF) for a Lighter and more Sustainable Future (8)	Chair: Erick Sharp	Christoph Gögelein, ARLANXEO Deutschland GmbH Strain-Induced Crystallization Of HNBR (2)	Chair: Fabian Grunert	Chaoying Wan, University of Warwick VAT Photopolymerisation 3D printing of elastomer vitrimers (13)	Chair: Keizo Akutsu	Mokarram Hossain, Swansea University On the influence of time-dependent behaviour of elastomeric wave energy harvesting membranes (9)		
11:10 - 11:35		Yusuf Guner, Standard Profil A.S. Developing EPDM Based Compound by Using Sustainable Carbonaceous Material (11)		William Mars, Endurica LLC Virtual qualification of elastomeric engine mount with recorded multi-channel road load input (3)		Anke Blume, University of Twente Comparison of the reactivity of mercaptosilane and sulfursilane in a model study (45)		Laurent Guy, Solvay How Silane could react on the Silica surface and the water role ? – Computer modeling as an advanced tool to link with our experiments (15)		
11:35 - 12:00		Cristian Oprisoni, LANXESS Germany GmbH Sustainable Solutions for the Rubber Industry (12)		Judith Hirsch, Hyundai Motor Europe Technical Center GmbH Identification of test parameter to evaluate the wear of rubber in aged chassis bushes (42)		Priyanka Sekar, University of Twente* Understanding the raspberry-like Filler Cluster Formation of Bis-(triethoxypropyl) tetrasulfide modified Hydrothermally treated lignin in an SSB/BR rubber matrix (48)		Fanzhu Li, Beijing University of Chemical Technology A comparative study of hyperelastic constitutive models and thermo-mechanical coupling analysis for an edge-cracked rubber specimen (19)		
12:00 - 12:25		Natalia Gajos, Solvay Solvay Precipitated Silica: Sustainable Solutions To Improve Tire Rubber Performances To Reduce Environmental Footprint And Increase Circularity (34)		Katsuhiko Tsunoda, Bridgestone Corporation New insight of the effect of micro/macro structure for SIC and related strength on poly isoprene rubber (46)		Poster Session				
12:25 - 13:35							Lunch & Networking			
13:35 - 14:00	Poster Session				Marie Yrieix, Hutchinson Thermo-oxidation, ozonation and fatigue degradation of rubbers: how to replace 6PPD? (53)					
14:00 - 14:25	Chair: Anke Blume	Zenen Zepeda Rodríguez, Instituto de Ciencia y Tecnología de Polímeros Structural Characterization Of Thermo-Mechanical Devulcanized Rubber From End-Of-Life Tires (39)	Chair: Jorge Pineda	Seiichi Kawahara, Nagaoka University of Technology Analyses of Crosslinking Junction, Strain-induced Crystallization and Mechanical Properties of Vulcanized Natural Rubber (51)	Chair: Anke Blume	Xiao Hu, University of Warwick* Damping properties of Butyl rubber vitrimers (65)	Chair: Toshio Tada	Noah Mentges, Institute for Plastics Processing (IKV) Modelling the effects of process induced phase morphology on the mechanical response of thermoplastic vulcanisates under quasi-static loading using representative volume elements (29)		

14:25 - 14:50	Chair: Maryn Bennett David Kiroski, HF Mixing Group Farrel Ltd <i>Experimental Approach to Quantify the Energy Aspects of Mixing (54)</i>	Chair: Jorge Lacayo Thomas Rauschmann, Bareiss Prüfgerätebau GmbH <i>Steady shear viscosity measurements of filled rubber compounds using new enhanced RPA technology (68)</i>	Chair: Ulrich Giese Ulrich Giese, Deutsches Institut für Kautschuktechnologie e.V. <i>Role and mechanisms of coagents in peroxide crosslinking optimizing the properties (80)</i>	Chair: Lena Tarrach Lena Tarrach, University of Wuppertal* <i>Model-Based Approach to Reinforcement by Filler and Rupture in Strain-Crystallizing Elastomer Networks (37)</i>		
14:50 - 15:15	Kamvar Alavi, Naphthenics <i>Sustainability In Rubber Compounds:Nynas Conventional And Biobased Rubber Plasticisers (59)</i>	Jens Meier, Deutsches Institut für Kautschuktechnologie e.V. <i>Pressure dependent viscosity of an EPDM/CB compound and relevance for injection molding (71)</i>	Yulan Lyu, University of Nottingham <i>Fracture path modelling of hyperelastic porous structures inspired by mussel plaques (94)</i>	Nico Stortini, Sapienza University of Rome* <i>Predicting crack speed propagation in elastomeric membranes (38)</i>		
15:15 - 16:00	Refreshments & Networking					
16:00 - 16:25	Chair: Maryn Bennett Jukka Koskinen, Tampere University* <i>Effect Of Lignin Dispersion To Abrasion Rate In Polybutadiene Rubber (78)</i>	Chair: Jorge Lacayo Andrei Lang, Deutsches Institut für Kautschuktechnologie e.V. <i>Abrasion Characteristics of Elastomer Materials based on Tyre Tread Compounds (77)</i>	Chair: Fabian Grunert Daigo Matsuoka, Asahi Kasei Europe GmbH <i>Introduction to Asahi Kasei's next-rubber SEBB (107)</i>	Chair: Toshio Tada Aaron Duncan, Queen Mary University of London* <i>Versatile New Model to Predict Ageing in Rubber Composites (61)</i>		
16:25 - 16:50	Stefan Frosch, THWS* <i>Sulfur Migration In Recycled Ground Rubber Containing Compounds And Its Impact On Dynamic-Mechanical Properties (95)</i>	Vasileios Koutsos, The University of Edinburgh <i>Rubber adhesion and friction: nanoscale mechanisms (83)</i>	Luca Giannini, Pirelli Tyre SpA <i>Exploration of novel S-free Curatives for tyre compounds: Thermally Activable Bistetrazoles (113)</i>	Merve Pehlivan, Yildiz Technical University <i>Experimental Investigation And Modelling Of Adhesion Between Textile Cords And Rubber Compounds (87)</i>		
16:50 - 17:00	Close of Day 1 Sessions					
	Pentland East	Pentland West	Prestonfield	St Trinneans	South Hall	Kirkland
19:30 - 01:00	Conference Dinner at The Caves, Edinburgh (8-10 Niddry St S, Edinburgh EH1 1NS)					

11/5/2023						
11/5/2023	John McIntyre Conference Centre				South Hall Complex	
	Pentland East	Pentland West	Prestonfield	St Trinneans	South Hall	Kirkland
08:15 - 09:00					Morning Coffee	
09:00 - 09:25	Chair: Ulrich Giese Maurizio Galimberti, Politecnico di Milano <i>A BiobasedJanus Molecule As Universal Coupling Agent In Rubber Compounds (111)</i>	Chair: Eric Sharp Manar Ramram, Technetics Group France <i>Silicone rubber gaskets for application under steam and high temperature environment: characterization of chemical structure and ageing study under critical conditions (88)</i>	Chair: Fabian Grunert Lewis Tunnicliffe, Birla Carbon <i>The Influence of Carbon Black on Electrical Properties of Rubber and Compound Development Approaches for High Resistivity Applications (116)</i>	Chair: Keizo Akutagawa Akihiro Matsuda, University of Tsukuba <i>Voxel-Based Finite Element Analysis of Polymer Foam with Micro-CT data (106)</i>		
09:25 - 09:50	Subhradeep Mandal, Leibniz-Institut für Polymerforschung Dresden e.V.* <i>Transformation of epoxidized natural rubber into ionomer with imidazole as a sustainable material with self-healing functionality (114)</i>	Ben Murphy, Heriot-Watt University* <i>Study of elastomer blend dynamics for improved tire performance (85)</i>	Laura Neumann, Leibniz-Institut für Polymerforschung Dresden e.V. <i>Coupled vulcanization and cellularization modeling for rubber foam injection molding (117)</i>	Juan Itriago, MINES Paris - PSL Research University, CEMEF – Centre de Mise en Forme des Matériaux* <i>Coupled vulcanization and cellularization modeling for rubber foam injection molding (126)</i>		
09:50 - 10:15	Silvia Guerra, Pirelli Tyre SpA <i>Eco-Tyre With A Low Environmental Impact (124)</i>	Evangelos Koliolios, Queen Mary University of London* <i>Chemical Characterisation of Smear Wear: A key to understanding tyre tread wear performance (89)</i>	Fabian Grunert, University of Twente <i>Investigation of the post-hardening effect of silica filled NR compounds (127)</i>	Chair: Izaak Jonathan Hodges, Wave Energy Scotland <i>Flexible Dielectric Elastomers For Wave Energy Generation - A Cross-Sector R&D Opportunity (40)</i>		
10:15 - 10:50					Refreshments & Networking	
10:50 - 11:15	Chair: Maryn Bennett Vincenzina Barbera, Politecnico di Milano <i>Biobased Janus Molecules For The Universal Functionalization of sp2 Carbon Allotropes, Silica And Boron Nitride, Fillers of Elastomeric Composites (136)</i>	Chair: Anke Josef Ludwig, Ludwig Nano Präzision GmbH <i>Spatially resolved, temperature-dependent determination of elastomer material properties using micro-indentation (91)</i>	Michael Warskulat, Orion Engineered Carbons <i>Beyond N330: Alternative Rubber Carbon Blacks to Comply with Regulations, to Enhance Performance or to Move towards Sustainability (132)</i>	Chair: Izaak Watson Andreas Kaiser, Arlanxeo Deutschland GmbH <i>Improving Elastomer Compounds for Hydrogen Applications (69)</i>		
11:15 - 11:40	Larissa Gschwind, University of Applied Sciences <i>Investigation of Aging Behavior of Recycled EPDM Rubber Waste (140)</i>	Chair: Eric Sharp Ilya Yakovlev, European Synchrotron Radiation Facility <i>Cavity formation during deformation of silica-filled rubber compounds observed by Ultra Small-Angle X-Ray Scattering (92)</i>	Ján Kruželák, Slovak University of Technology <i>Physical-mechanical properties and EMI absorption shielding performance of rubber composites (28)</i>	Ondrej Farkas, Universität der Bundeswehr München <i>Frequency Domain Viscoelasticity - On The Experimental And Numerical Investigation Of Elastomeric Vibration Isolators Under Dynamic Loading (75)</i>		

11:40 - 12:05	Chair: Leif Kai	<u>James Innes, University of Bradford</u> The Devulcanization and Revulcanization Of Waste Tyre Rubber (144)	<u>Aaron Graham, University of Oxford</u> On the use of the Virtual Fields Method for material characterisation (97)	Chair: Leif Kai	<u>Prashant Saxena, University of Glasgow</u> Modelling extreme deformation and resulting instabilities in thin electro-active and magneto-active elastomer membranes and shells (36)	Chair: Abilash Nair	<u>Debabrata Ganguly, Indian Institute of Technology Kharagpur</u> Cement-Carbon Black Dual Filler Based Hnbr Composite For Low Cost, Light Weight, Flexible, And Efficient Radiation Shielding Materials (105)			
12:05 - 12:30	Poster Session				<u>Wei Tan, Queen Mary University of London</u> Inverse design of shape-morphing structures based on functionally graded elastomer composites (57)		<u>Hikaru Hashimoto, NOK Corporation</u> Characterization On The Crosslink Reaction Of Fkm Rubber By Using Nmr And Tga (123)	Lunch & Networking		
12:30 - 13:35										
13:35 - 14:00	Chair: Ulrich Giese	<u>Chris Norris, Murfitts Industries</u> Demonstrating the Performance Potential of rCB in Rubber Formulations (146)	<u>Eathan Plaschka, Queen Mary University of London*</u> The Influence of Temperature on Friction and Wear Behaviour of Tyre Tread Compounds (98)	Poster Session						
14:00 - 14:25	Chair: TBC		<u>Anmol Aggarwal, University of Twente*</u> Investigation Of Different Interactions In Silica-Filled SSBR Compounds Contributing To The Cure Torque (99)	Chair: Khai Nguyen	<u>Sara Naderizadeh, Queen Mary University of London</u> Piezoresistive Elastomer Composites Used for Pressure Sensing (81)	Chair: TunniciLiffe	<u>Leo Nijhof, Nouryon</u> Crosslinking Peroxides for Silicone Rubbers (21)			
14:25 - 14:50		<u>Sustainibility Panel Discussion</u>	<u>Takahiro Anzai, NOK Corporation</u> Visualizaton Of Nanoscale Mechanical Properties Of Fatigue Rubber By AFM (112)		<u>Santanu Chattopadhyay, Indian Institute of Technology Kharagpur</u> Smart specialty elastomer composites using ceramic waste with triple percolation characteristics (104)		<u>Patrick Frenzel, Technical University of Vienna</u> Experimental Analysis Of The Residence Time Distribution In A Single Screw Rubber Extruder Using A Digital Image Processing Method (35)			
14:50 - 15:15			<u>Richard Moon, Artis</u> Investigation into the Impact Carbon Black Grades have on the Permeation Resistance of Butyl Rubbers (115)		<u>Jishnu Nirmala Suresh, Leibniz-Institut für Polymerforschung Dresden e.V.*</u> Developing liquid rubber's electromechanical actuation capabilities for soft robotic applications. (118)		<u>Ameva Karmarkar, Hyundai Motor Europe Technical Center GmbH</u> Investigation Into The Application Of Additive Manufacturing Technology For Chassis And Powertrain Tuning Bushes (43)			
15:15 - 16:00									Refreshments & Networking	
16:00 - 16:25	Chair: Toshio Tada		<u>William Amoako Kyei Manu, Queen Mary, University of London*</u> The Effect Of Carbon Black Morphology On The Fatigue Crack Growth Behavior Of Rubber Compounds (125)	Chair: Khai	<u>Carmela Mangone, University of Twente*</u> Enabling interfacial adhesion between conductive rubber and piezoelectric polymer for energy harvesting applications (130)	Chair: Abilash Nair	<u>Eva Peláez-Álvarez, Cranfield University</u> A Novel 3D Printing Technology For Elastomeric Products From Rubber Latex (55)	Shell Scheme Breakdown		
16:25 - 16:50			<u>Natalia Cano Murillo, Bundesanstalt für Materialforschung und -prüfung (BAM)</u> Effect Of High-Pressure Ahydrogen Environment On The Physical And Mechanical Properties Of Different Kinds Of Carbon Black Filled Elastomers (142)				<u>Kento Watanabe, Chemicals Evaluation and Research Institute, Japan</u> The Effect Of Zinc Oxide On The Structure And Mechanical Properties Of Carbon Black Filled Rubber (60)			
16:50 - 17:15	Close of Conference Address & Awards Announced									
	Pentland East		Pentland West		Prestonfield		St Trinneans			
							South Hall			
							Kirkland			