

DAY 1 | 3rd September 2018

9h00
9h30

Opening Session

Keynote Lecture

European Defence Trends in Materials and Structures Technologies

Giuseppe Daquino
European Defense Agency

		Room 1	Room 2	Room 3		
10h15	Session 8 - Impact, Ballistic and Blast Performance	12 Lead-Free Primary Explosives based on Transition Metal Coordination Compounds Jörg Stierstorfer University of Munich (LMU) Germany	33 Raw and Processed Materials Used in the European Defence Industry Claudiu Pavel Joint Research Centre, European Commission Netherlands	73 Reduced Graphene Oxide Coating for Electromagnetic Interference Shielding Application Ricardo Andrade MackGraphe Brazil		
10h30		20 Ballistic Impacts Experiments and Modeling of Plastilina/Protection Systems Lionel Gilson Royal Military Academy Belgium			39 A Dynamic Mechanical Analysis of T2 Copper at High Strain Rates Shuai Chen ZNDY of Ministerial Key Laboratory, University of Science and Technology China	35 Smart Acclimatisation Textile Systems for Defense Gilda Santos CITEVE - Technological Centre for the Textile and Clothing Industry of Portugal Portugal
10h45		29 Alternatives for Protection of Structures and Components Under Near Field Blast Loadings Daniel Ambrosini University of Cuyo, CONICET Argentina				
11h00 – 11h30	COFFEE BREAK					

11h30	<p>16 Invited Lecture Molecularly Imprinted Polymers and Optical Fiber Sensors for Security Applications Nunzio Cennamo University of Campania Luigi Vanvitelli Italy</p>
11h45	
12h00	<p>21 Experimental and Numerical Characterization of 3D-Printed PLA under Uniaxial High Strain-Rate Loading Hugo B. Rebelo CINAMIL, Military Academy and CERIS, ICIST and Department of Civil Engineering, Faculty of Science and Technology, Nova University of Lisbon Portugal</p>
12h15	<p>36 Propellant based on Sustainable Polymers from Succinic Acid Nicolis Araujo Federal University of Rio de Janeiro Brazil</p>
12h30	<p>45 Modification the Polyamide 6 Film with Silver Selenide Remigijus Ivanauskas Kaunas University of Technology Lithuania</p>
12:45	<p>50 Textile Electrodes for Heart Rate Measurement: a Comparative Study for Firefighters' Monitoring André G. Ferreira University of Minho Portugal</p>

Session 4 - Advanced Polymers, Fibrous and Textile Materials

<p>2 Invited Lecture Solving Vexing Defense Challenges with Nano-Armored Enzyme-Based Materials Alan Russel Carnegie Mellon University USA</p>
<p>11 Lanthanum Hydroxide Nanoparticles / Multi-Wall Carbon Nanotubes Nanocomposite Arvind Kumar Bhakta University of Namur Belgium</p>
<p>43 Graphene-Based Nanocomposites with Improved Mechanical and Ballistic Protection Properties Israel Gago Technical University of Cartagena, Chemical and Environmental Engineering Department Spain</p>
<p>38 Application Argonium Plasma Jet with Frequency 10 khz in Atmospheric Environment Luis Madson Costa Technical Institute of Aeronautics Brazil</p>
<p>80 Ballistic Resistance of Magnesium Alloy, AZ31B Reinforced with Carbon Nanotube and Lead under Gas Gun Simulation Mohamad Faizal Abdullah National Defense University of Malaysia Malaysia</p>

Session 6 - Nanomaterials and Nanostructures for Defense

<p>15 Comparison of the Ballistic Stability of Composites based on Carbide of Boron, Corund, and Glass-Ceramics (Armored Sitall) Yurii Merkulov Independent scientist Russian Federation</p>
<p>18 Integrity of Carbon Fibre-Reinforced Polymer Composites during Impact whilst under Fire Conditions Robert Chapple Institute for Materials Research and Innovation, University of Bolton United Kingdom</p>
<p>23 Abrasive Waterjet Machining of Aluminium / Boron Carbide Composite Kanthababu M Department of Manufacturing Engineering, College of Engineering Guindy, Anna University India</p>
<p>25 Damage Investigation Over Upper Skin Composite Panels of the Eurofighter Aircraft Michele Buonsanti Department Diceam Mediterranean University of Reggio Calabria Italy</p>
<p>27 Reinforced cork composites developed for helmet liner with improved damping performance Francisco J. Galindo-Rosales Transport Phenomena Research Center, Faculty of Engineering, University of Porto Portugal</p>
<p>34 A Hierarchical Impact Force Reconstruction Method for Aerospace Composites Mario Emanuele de Simone University of Bath United Kingdom</p>

Session 1 - Advanced Composites for Defense Applications

13h00 – 14h00		LUNCH									
14h00	Session 3 - CBRN Protection	8 Development of a Low-Cost Device for Detection of Explosives Vapors Liliana Martelo Higher Technical Institute – University of Lisbon Portugal	135 Invited Lecture Auxetic Materials: Potential for Defense Applications Sohel Rana Fibrenamics, University of Minho Portugal	101 Increased Energy Absorption and Reliability of Beams by Improved Web-Flange Junctions Nandan Khokar Biteam AB Sweden							
14h30		22 Biological Protective Clothing Materials Gang Sun University of California, Davis United States			83 Smart Textile Solutions Lisandra Vilaça Smart Innovation Portugal						
14h45		41 Rapid Deactivation of Organophosphorus Nerve Agents by Reactive Adsorbents Based on Nanocrystalline Metal (Hydr)Oxides Jiri Henych Institute of Inorganic Chemistry of the Czech Academy of Sciences Czech Republic				42 Indentation and Impact in Dome-Shaped Auxetic Honeycombs Yousef Dobah University of Bristol United Kingdom	36 Propellant Based on Sustainable Polymers from Succinic Acid Nicolis Araujo Federal University of Rio de Janeiro Brazil				
15h00		68 Chemical and Biological Warfare Protection and Self-Decontaminating Fabrics based on Oxide Nanoparticles João F. Pereira Fibrenamics Portugal						136 Development and Characterization of High Performance Auxetic Fabrics Produced Using Purl Knitted Structures Rui Magalhães Centre for Textile Science and Technology (2C2T), University of Minho Portugal	45 Modification the Polyamide 6 Film with Silver Selenide Remigijus Ivanauskas Kaunas University of Technology Lithuania		
15h15		90 Selection of Chemical Protective Suits by Users: Are the Standard Tests Results Sufficient? Denis Josse Alpes-Maritimes Fire and Rescue Services France								100 Development of High Performance Auxetic Composites for Application in Protection Area Fernanda Steffens Federal University of Santa Catarina Brazil	50 Textile Electrodes for Heart Rate Measurement: A Comparative Study for Firefighters' Monitoring André G. Ferreira University of Minho Portugal
15h30		96 Passive and Active Chemical Protection Ana Leitão Center for Textile Science and Technology, University of Minho Portugal									
	Session 7 - Auxetic Materials		Session 4 - Advanced Polymers, Fibrous and Textile Materials								

15h45		<p>99 Non-Releasing Biocidal Coatings: A New Eco-Friendly Strategy to Prevent Marine Biofouling Amaya Igartua ik4-tekniker Spain</p>		<p>137 Characterization Of Auxetic And Mechanical Behaviours Of Auxetic Composites Developed Using Star Knitted Structures Clara Gonçalves Institute for Polymers and Composites (IPC), University of Minho Portugal</p>		<p>67 Soldier Monitoring Systems: The Potential of Natural Fibres and Metal Oxide Nanoparticles Sofia Costa Fibrenamics, University of Minho Portugal</p>
15h45 – 16h15	COFFEE BREAK					
16h15	Session 9 - Advanced Materials and Technologies for Defense	<p>70 Invited Lecture Bioinspired Materials Templates by Nature Species Di Zhang State Key Lab of Metal Matrix Composites, Shanghai Jiao Tong University China</p>	Session 8 - Impact, Ballistic and Blast Performance	<p>32 Development of A New Technology to Manufacture an Additional Ballistic Protection Panel (Add On) for the New Brazilian Armored Personnel Carrier (GUARANI) Julio Dolce Brazilian Army Brazil</p>	Session 5 - Design and Analysis of Protection Materials and Composites	<p>69 Invited Lecture Molecular Modeling of Mechanical Properties of Semicrystalline Polyethylene Jan Andzelm U.S. Army Research Laboratory United States</p>
16h30				<p>46 Manufacture and Ballistic Testing of Sheared Dyneema® Plates Behjat Ansari University of Bristol United Kingdom</p>		
16h45		<p>53 Facilities, Skills and Competence in Advanced Materials Studies for Defense at C2T António Pereira Gonçalves Center for Nuclear Sciences and Technologies (C2TN), Higher Technical Institute, University of Lisbon Portugal</p>		<p>47 Experimental Evaluation of Impact Resistant Composite Solutions for Commercial Aircraft Fuselage Ricardo Rocha INEGI Portugal</p>		<p>6 Experimental and Numerical Analysis of Combat Helmet Ballistic Performance Marcos Rodriguez-Millán University Carlos III of Madrid Spain</p>
17h00		<p>79 A New Approach to Dual Use Research – Janus Project Costas Charitidis National Technical University of Athens, School of Chemical Engineering Greece</p>		<p>51 Mapping Ballistic Penetration Resistance of Hard Ceramic Targets Joaquim M. Vieira Department of Materials and Ceramic Engineering (DEMaC) and CICECO, University of Aveiro Portugal</p>		<p>28 Characterization and Constitutive Modelling of Crushable Foams - Application to Highly Demanding Thermomechanical Loading Cases Paulo Antunes Critical Materials Portugal</p>

17h15	<p>92 Activities at Onera on Materials and Structures for Defence Applications Stefan Drawin ONERA France</p>	<p>55 Vibration Analysis of High Pressure Composite Carbon Fiber Vessel Subjected to Mechanical Impact Maciej Panek Wrocław University of Science and Technology Poland</p>	<p>48 Comparison between Finite Element Models and Simplified Energetic Models for High Velocity Impacts on an Aluminium Plate Énio Chambel Military Academy Portugal</p>
17h30	<p>104 Joining Methods Of High Entropy Alloys Used For Ballistic Targets Ionelia Voiculescu University Politehnica of Bucharest Romania</p>	<p>57 Modified Pendulum Impact Test on Uhpfrc with Coarse Basalt Aggregate H.J.H. Brouwers Eindhoven University of Technology Netherlands</p>	<p>49 Comparison of Numerical Modelling Methods of Innovative Materials for Ballistic Shields Adrianna Mackiewicz Department of Mechanics, Materials Science and Engineering, Wrocław University of Science and Technology Poland</p>
<p>18h00 CLOSING</p>			
<p>19h00 SOCIAL PROGRAM - WELCOME RECEPTION Palace of the Marquis of Pombal - visit the palace wine cellar and taste four of the best Portuguese wines grown in this region</p>			

DAY 2 | 4th September 2018

9h00 - 9h15 Conference Announcements

Keynote Lecture

Multifunctional Coatings based on Two-Dimensional Materials for Defense Applications

JunLou

Rice University, USA

Room 1		Room 2	
10h10	88 Energy of Micro Crystalline Cellulose- Carbon Nanotubes Reinforced Hybrid Cementitious Composites Shama Parveen Fibrenamics, University of Minho Portugal	Session 5 - Design and Analysis of Protection Materials and Composites	54 Reactive Molecular Dynamics Simulation of the Detonation Pressure of Plastic Explosive – PBX Fausto Mendonca Aeronautics Institute of Technology Brazil
10h15	94 Environmental Stimuli-Responsive Electrospun Composite Nanofibres for Textile Based Advanced Defense Applications Shah M Reduwan Billah Department of Chemistry, Durham University United Kingdom		59 Behind-Helmet Blunt Trauma: Matching Measurement to Injury Using Finite Element Modelling Ana Ferreira Azevedo Royal Military Academy Belgium
10h30	107 Ballistic Composites Reinforced with Inorganic Nanotubes of Tungsten Disulfide Danica Simić Military Technical Institute Serbia		75 A Reduced-Order Modeling Based Design and Optimization for a Lightweight Multilayer Armor Plate against Blast and Impact Weiran Jiang University of Michigan, Ann Arbor USA
10h45	134 Nanocarbon Reinforced Metal Matrix Composites Fabricated by A Bioinspired Bottom-Up Process Zhiqiang Li Shanghai Jiao Tong University China		78 Simulation of Ballistic Impacts On Concrete with New Damage Luís Pereira Portuguese Air Force Academy Portugal

11h00 - 11h30 COFFEE BREAK

11h30	Special Session on Graphene	111 Electrically Conductive Polymer Based Composites for Thermoelectric Applications Petra Pötschke Leibniz Institute of Polymer Research Dresden Germany	Special Session on Ballistic Performance	19 Microstructural Analysis On Ballistic Tested Armour Steel Joints Fabricated Using Low Hydrogen Ferritic Consumables for Capping Pass Balakrishnan M. The Institute for Sustainability and Innovations in Structural Engineering (ISISE), Department of Mechanical Engineering, University of Coimbra Portugal
-------	------------------------------------	---	---	--

11h45					<p>62 Effect of Welding Consumables On Ballistic Performance of Shielded Metal Arc Welded Quenched & Tempered (Q&T) Armour Grade Steel Joints Balasubramanian V Cemajor India</p>	
12h00		<p>113 Graphene Nanocomposites for Defense Applications Robert J Young National Graphene Institute and School of Materials, University of Manchester United Kingdom</p>			<p>63 Ballistic Performance of Air Cooled and Water Cooled Friction Stir Welded High Strength Armour Grade Aa2519-T87 Aluminum Alloy Joints Malarvizhi S Cemajor India</p>	
12h15					<p>64 Ballistic Performance of Shielded Metal Arc Welded Dissimilar Joints of Armour Grade Steels Balasubramanian V Cemajor India</p>	
12h30		<p>126 Waterborne Polyurethane Composites with Few Layer Graphene for High Performance Coatings Maria da Conceição Paiva University of Minho Portugal</p>			<p>65 Effect of Metal Transfer Modes On Ballistic Performance of Gas Metal Arc Welded Rolled Homogenized Armour Steel Joints Malarvizhi S Cemajor India</p>	
12h45	LUNCH					
13h00 – 14h00						
14h00	Session 4 - Advanced Polymers, Fibrous and Textile Materials	<p>72 Invited Lecture Armours Ballistic Performance of Nonwoven Fabrics for Lightweight Armours Javier Llorca IMDEA Materials Institute & Technical University of Madrid Spain</p>	Session 1 - Advanced Composites for Defense Applications	<p>10 Invited Lecture Carbon Nanotube/ Fiber Reinforced Ceramic Composites Shijie Wang Institute of Materials Research and Engineering (IMRE), A*STAR (Agency for Science, Technology, and Research) Singapore</p>	Special Session on AuxDefense	<p>138 Study of the Energy Absorption Capability of Para-Aramid Fabrics Sónia Costa Fibrenamics, University of Minho Portugal</p>
14h30				<p>139 Influence of Carbon Nanotubes in the Performance of a Ballistic Helmets Fernando Cunha Fibrenamics, University of Minho Portugal</p>		

14h45	<p>76 Investigating The Mechanical Behaviours of 3d Warp Interlock Fabrics for Soft Body Armour Design François Boussu ENSAIT France</p>	<p>74 Multi-Impact Response of Composite Sandwiches Incorporating Cork Cores Paulo Reis University of Beira Interior Portugal</p>	<p>140 Study of the Influence of the Polymer Matrix on the Energy Absorption in Reinforced Composites with Three-Dimensional Auxetic Meshes João Bessa Fibrenamics, University of Minho Portugal</p>
15h00	<p>85 Flexible Textile Supercapacitors based on Nitrogen-Doped Carbon Nanomaterials Rui Costa Faculty of Sciences, University of Porto Portugal</p>	<p>77 Influence of The Consolidation Pressure On the Shock Wave Propagation in UHMWPE Composites Torsten R Lässig Fraunhofer Ernst-Mach-Institut, Freiburg Germany</p>	<p>141 Influence of Different Loading Rates on Energy Absorption Capability of Para-Aramid Fabrics Juliana Cruz Fibrenamics, University of Minho Portugal</p>
15h15	<p>102 Functionalization of a Non-Newtonian Fluid Composed of Silica Nanoparticles into Cotton Substrates for Anti-Stab Protection Filipa Fernandes Ooze Nanotech Portugal</p>	<p>87 Novel Multi-Scale Cimentitious Composites Developed Using Microcrystalline Cellulose (MCC) and Sisal Fibers Shama Parveen FIBRENAMICS, University of Minho Portugal</p>	<p>142 Development of Fibrous Interfaces to Improve Comfort on Bullet Proof Vest Ana Leitão Fibrenamics, University of Minho Portugal</p>
15h30	<p>120 Electrically Conductive Peek Filaments for Additive Manufacturing by FDM José Covas University of Minho Portugal</p>	<p>121 Deep Penetration of Ultra-High Molecular Weight Polyethylene Composites by a Sharp-Tipped Punch Burigede Liu Department of Engineering, University of Cambridge United Kingdom</p>	<p>143 Study on the Usability of Innovative Knee and Elbow Pads based on Auxetic Composites Marta Brito Fibrenamics, University of Minho Portugal</p>
15h45	<p>125 Functionalised Fabrics for Organic Compounds Degradation Ana Maria Ferraria CQFM (IN and IBB) Higher Technical Institute Portugal</p>	<p>58 Effects of Inclination Angle On Pullout Performance of Hooked End Fiber Embedded in Uhpc Y.Y.Y. Cao Eindhoven University of Technology Netherlands</p>	<p>144 Designing Novel Soldier Systems Elements based on Biomimetics Filipe Moreira Fibrenamics, University of Minho Portugal</p>
15h45 – 16h15	COFFEE BREAK		

16h15	Session 9 - Advanced Materials and Technologies for Defense	31 Invited Lecture IR-Signatures of Low Flying Aircraft and Their Engine-Embedded Fuselage's Emissivity Shripad Mahulikar Indian Institute of Technology Bombay India	Session 8 - Impact, Ballistic and Blast Performance	37 Thermal Isolation/Barriers for Small Caliber Weapon Applications Adam Foltz US Army Ardec Picatinny Arsenal United States
16h30		61 Mechanical Properties of Ultra High Performance Fiber Concrete and its Response to Impact Loading Anna Mina Department of Civil and Environmental Engineering, University of Cyprus and School of Civil Engineering, National Technical University of Athens Cyprus		81 Different Composite Behaviours Under Blast Loading Arthur Voisin Renault Trucks Defense / GEMTEX France
16h45		105 SHM TB30 – Methodology and Tools for Assessing the Structural Health and Life Extension of Legacy Aircraft Paulo Antunes Critical Materials Portugal		86 Performance of Structural Blast Mitigation Measure for Oil and Gas Industrial Facilities Damjan Cekerevac Institute for Sustainability and Innovation in Structural Engineering Portugal
17h00		108 Plasma Electrolytic Oxidation Coatings for Engine Components of Light Armored Vehicles Igartua Amaya Fundacion TEKNIKER Spain		103 UHPFRC Resistance to Projectile Impact in Dependence on Fibre Content Jindřich Fornůsek CTU in Prague Czech Republic
17h15		114 An Overview of Mechanical Behaviour of Cellular Metals as Fillers in Thin-Walled Structures Isabel Duarte University of Aveiro Portugal		98 Spallation Observed in Hard Metals During Taylor- Impact Tests Torsten Lässig Fraunhofer Institut für Kurzezeitdynamik, Ernst-Mach-Institut (EMI) Germany
17h30		117 Influence of Silane Coupling Agent on Shear Thickening Fluids (STF) Thiago Santos Federal University of Rio Grande do Norte – PPGET Brazil		89 Hybrid Ballistic Solutions Pedro Mimoso INEGI Portugal
17h45	93 Quality Metrics Parameters of Personal Protection Equipment Inese Zimmele Gerster TechTex Germany			

18h00

CLOSING

20h00

SOCIAL PROGRAM - CONFERENCE DINNER
Vila Galé Collection Palácio dos Arcos

DAY 1 & 2 | 3rd - 4th September 2018

Poster Session	<p>9h00 – 18h00</p>	<p>84 Peculiarities of The Silver Selenide Layers Formation On the Different Nature Fibers Surface Daiva Milasiene Kaunas University of Technology Lithuania</p>
	<p>97 Dyeing of Meta-Aramid Fibres Previously Functionalized with PDDACI Fernando Ribeiro Oliveira Federal University of Santa Catarina Brazil</p>	
	<p>b106 Military Textiles – Protection Mechanisms Fernanda Steffens Federal University of Santa Catarina Brazil</p>	
	<p>112 The Thermal Colour and The Emissivity of Printed Pigments On Knitted Fabrics for Application in Diurnal Thermal Camouflage Garments Catarina Pimenta Centre for Textile Science and Technology (2C2T), University of Minho Portugal</p>	
	<p>116 Trends in Camouflage Danielle Beduschi University of Minho Portugal</p>	
	<p>127 Novoloid Composites Created in Electric Field Wieslawa Urbaniak-Domagala Lodz University of Technology Poland</p>	