

## Programme of BJ2024

Author underlined → presenting author

\* Plenary lecture

<b>Thursday 5 December 2024</b>	
8:40	<b>BJ 2024 Opening (B032)</b>
	<b>Room B032</b>
9:00*	Bioinspired soft adhesives in biomedical applications ( <b>BJ24_1</b> ) <u>JF Mano</u> (University of Aveiro, Portugal)
	<b>Session 1A – Biomimetic adhesives (Chair: SN Gorb, JF Mano)</b>
	<b>Room B032</b>
9:40	Biomimetic adhesive microstructures as an approach to understand functioning biological systems ( <b>BJ24_3</b> ) <u>SN Gorb</u> (Kiel University, Germany)
10:00	Sea urchin bioadhesion: from characterization to emulation ( <b>BJ24_28</b> ) <u>R Santos</u> (University of Lisbon, Portugal)
10:20	Synergistic effect of combining biomimetic adhesive microstructures of different shapes and functions ( <b>BJ24_45</b> ) <u>H Kasem</u> (Azrieli College of Engineering, Israel), D Badler, R Goldsberg, A Abu-Ammar
<b>10:40-11:00</b>	<b>COFFEE BREAK</b>
	<b>Session 2A – Biological adhesives (Chair: AY Stark, U Rothbacher)</b>
	<b>Room B032</b>
11:00	Egg glue of the stinkbug <i>Nezara viridula</i> : Production site, chemo-mechanical properties, and adhesive strength on natural and artificial surfaces ( <b>BJ24_17</b> ) <u>A Baral</u> (University of Perugia, Italy), S Piersanti, S Caponi, M Mattarelli, S Gorb, G Salerno, M Reborà
11:20	Tunicate larval adhesion: Cells, species differences and analyses of their secretions ( <b>BJ24_25</b> ) <u>F Zeng</u> , <u>L Ciampa</u> , <u>U Rothbacher</u> (University Innsbruck, Austria)
11:40	Fish protein-based bio-adhesives for wooden structures ( <b>BJ24_26</b> ) <u>M Zouari</u> (InnoRenew CoE, Slovenia), J G Pečnik, M Schwarzkopf
12:00	Functional amyloids in adhesive secretions from a marine invertebrate? ( <b>BJ24_27</b> ) <u>P Flammang</u> (Université de Mons, Belgium), M Bonneel, E Moe, <u>A Whaite</u>
12:20	Biological adhesive systems in a changing world ( <b>BJ24_37</b> ) <u>AY Stark</u> (Villanova University, PA, USA)
<b>13:00-14:00</b>	<b>LUNCH BREAK</b>
	<b>Room B032</b>
14:00*	Bioinspired structured adhesives for various surfaces ( <b>BJ24_2</b> ) <u>L Xue</u> (Wuhan University, China)
	<b>Session 3A – Bioinspired interfaces and surfaces (Chair: E Pierro, KT Turner)</b>
	<b>Room B032</b>
14:40	On the micro-drilling of the rigid substrates: does it always improve adhesion? ( <b>BJ24_12</b> ) <u>E Pierro</u> (University of Basilicata, Italy), G Carbone
15:00	Exploiting disorder in the design of architected interfaces ( <b>BJ24_13</b> ) <u>S Fulco</u> , <u>M Budzik</u> , <u>KT Turner</u> (Aarhus University, Denmark)

15:20	Tuning the mechanical properties of architected materials: from sandwich beams to triply periodic minimal surface composite lattices <b>(BJ24_30)</b> <u>Q Grossman</u> (University of Liège, Belgium), M Lê, L D'Andrea, D Gastaldi, P Vena, D Ruffoni	
15:40	Interface thickness and orientation in 3D printed fiber-reinforced composites <b>(BJ24_31)</b> <u>T Volders</u> (University of Liege, Belgium), M Contino, F Passoni, L Andena, D Ruffoni	
<b>16:00-16:20</b>	<b>COFFEE BREAK</b>	
	<b>Session 4A – Bioadhesion (Chair: S Wang, EV Gorb)</b>	
	<b>Room B032</b>	
16:20	Delamination-induced pattern formations of tree bark <b>(BJ24_14)</b> <u>T Yamaguchi</u> (The University of Tokyo, Japan), Y Uenobu	
16:40	Nanoscale chemical-mechanical characterization of interphase and bondline <b>(BJ24_18)</b> <u>S Wang</u> (University of Tennessee, USA)	
17:00	Solid lubrication at the micro-scale: the case of insect joints <b>(BJ24_34)</b> <u>C Putignano</u> (University of Kiel, Germany), K Nadein, J Thomas, A Kovalev, SN Gorb	
17:20	Can hydrogels mimic cartilage to lubricate soft joints? <b>(BJ24_35)</b> <u>C Putignano</u> (University of Kiel, Germany), G Carbone	
17:40	Unveiling the adhesion mechanisms of an arrow worm (Spadella cephaloptera): Insights into bioadhesives and development <b>(BJ24_36)</b> <u>C Barrera</u> (University of Vienna, Austria), T Wollesen	
18:00	Damage quantification of thin films on soft substrate <b>(BJ24_10)</b> A Singh, <u>R Santoprete</u> (L'Oréal Research and Innovation, France), GS Luengo, C Creton, M Ciccotti	
19:00	<b>Poster session and RECEPTION (Room under the Auditorium)</b>	
	<b>Joining of natural materials</b>	
Poster 1	Strength improvements of wooden joints by using tough layer technique <b>(BJ24_6)</b>	<u>S Jalali</u> (INEGI, Portugal), EAS Marques, RJC Carbas, LFM da Silva
	<b>Biologically inspired joints</b>	
Poster 1	Bio-inspired composite adherends: enhancing adhesive joint toughness under high-rate four-point bending <b>(BJ24_4)</b>	<u>H Malekinejad</u> (INEGI, Portugal), RCJ Carbas, EAS Marques, LFM da Silva
Poster 2	Bio-inspired helicoidal CFRP composite behaviour under bending and out of plane loading <b>(BJ24_38)</b>	<u>H Malekinejad</u> (INEGI, Portugal), RCJ Carbas, EAS Marques, LFM da Silva
Poster 3	Sustainable design of impact resistant vehicle structures through tailored material and design <b>(BJ24_24)</b>	<u>EAS Marques</u> (University of Porto, Portugal), M Kasaei, S Jalali, RJC Carbas, LFM da Silva
	<b>Adhesion and adhesives in veterinary</b>	
Poster 4	Adhesives in veterinary medicine: a review <b>(BJ24_8)</b>	<u>CMC Ferreira</u> (INEGI, Portugal), BD Simões, EAS Marques, RJC Carbas, LFM da Silva
	<b>Bioadhesion</b>	
Poster 5	Attachment ability of <i>Coccinella septempunctata</i> male and female beetles to a smooth substrate <b>(BJ24_9)</b>	<u>EV Gorb</u> (Kiel University, Germany), SN Gorb

Poster 6	Characterisation of the byssus of an economically important pearl-producing bivalve <b>(BJ24_48)</b>	<u>A Whaite</u> (University of Mons, Belgium), A Elizur, S Cummins
<b>Adhesion and adhesives in dentistry</b>		
Poster 7	Microscopic inspection at occlusal pits and fissures sealants to enamel interfaces <b>(BJ24_46)</b>	R Fidalgo-Pereira, D Abrantes, N Veiga, B Henriques, M Özcan, <u>JCM Souza</u> (Universidade Católica Portuguesa, Portugal)
<b>Biomimetic adhesives</b>		
Poster 8	Attach, resist, defend and immobilise: how marine invertebrates inspire biomimicry <b>(BJ24_47)</b>	<u>A Whaite</u> (University of Mons, Belgium), E Duthoo, E Hennebert, P Flammang

<b>Friday 6 December 2024</b>	
8:40*	Bio-based adhesives from wood sources - liquefied wood, lignin and tannin ( <b>BJ24_14</b> ) <u>M Šernek</u> (University of Ljubljana, Slovenia)
	<b>Session 5 – Joining of wood I (Chair: M Šernek, LH Carvalho)</b>
	<b>Room B032</b>
9:20	Evaluating the mechanical properties of bio-based polyurethane adhesives in zero-thickness bond applications ( <b>BJ24_5</b> ) <u>S Jalali</u> (INEGI, Portugal), <u>RJC Carbas</u> , <u>EAS Marques</u> , <u>LFM da Silva</u>
9:40	Curing of bio-based adhesives from tannin and lignin, determined by ABES ( <b>BJ24_11</b> ) <u>M Šernek</u> (University of Ljubljana, Slovenia)
10:00	Impact of tannins type on their performance as binder in the production of particleboards ( <b>BJ24_19</b> ) <u>RA Fernandes</u> (Associação Rede Competência em Polímeros, Portugal), <u>N Ferreira</u> , <u>S Lopes</u> , <u>J Santos</u> , <u>JM Martins</u> , <u>LH Carvalho</u>
10:20	Self-crosslinking of lignin as bio-based adhesives for bio-joining of wood ( <b>BJ24_20</b> ) <u>B-D Park</u> (Kyungpook National University, Republic of Korea), <u>ES Wibowo</u> , <u>S Ghahri</u> , <u>EC Watumlawar</u>
<b>10:40-11:00</b>	<b>COFFEE BREAK</b>
	<b>Session 6 – Joining of wood II (Chair: T Yamaguchi, LFM da Silva)</b>
	<b>Room B032</b>
11:00	A path for increasing the sustainability of vehicle structural design supported by adhesive bonding ( <b>BJ24_23</b> ) <u>EAS Marques</u> (University of Porto, Portugal), <u>S Jalali</u> , <u>RJC Carbas</u> , <u>M Kasaei</u> , <u>LFM da Silva</u>
11:20	Collagen obtained from the byproduct of the fur industry as an adhesive for wood ( <b>BJ24_29</b> ) <u>S Monteiro</u> (Associação Rede Competência em Polímeros, Portugal), <u>R Fernandes</u> , <u>A Sous</u> , <u>FD Magalhães</u> , <u>J Martins</u> , <u>L Carvalho</u>
11:40	Impact of bioadhesives on formaldehyde and VOC emissions from wood-based panels ( <b>BJ24_40</b> ) <u>ML Almeida</u> , <u>NT Paiva</u> , <u>JM Martins</u> , <u>FD Magalhães</u> , <u>S Adamopoulos</u> , <u>RM Ramos</u> (University of Porto, Portugal), <u>LH Carvalho</u>
12:00	Graphene quantum dots/polyethylenimine as a versatile crosslinker for starch-based adhesives ( <b>BJ24_41</b> ) <u>V Silveira</u> (Swedish University of Agricultural Sciences, Sweden), <u>S Adamopoulos</u> , <u>R Papadakis</u>
12:20	Application of non-conventional Pinus radiata bark extraction methods in the design of bioadhesives for wood-based products ( <b>BJ24_42</b> ) <u>J Santos</u> (Associação Rede Competência em Polímeros, Portugal), <u>D Escobar-Avello</u> , <u>T Oñate-Valdés</u> , <u>V Ferrer</u> , <u>RA Fernandes</u> , <u>C Fuentealba</u> , <u>JM Martins</u> , <u>LH Carvalho</u>
12:40	Re-bondable bio-base structural adhesive ( <b>BJ24_49</b> ) <u>N Terasaki</u> (National Institute of Advanced Industrial Science and Technology (AIST), Japan), <u>M Shibakami</u> , <u>T Himiyama</u>
<b>13:00-14:00</b>	<b>LUNCH BREAK</b>

14:00*	Rationalizing surface preparations, complexity and eventual outcomes tied to adhesion in dental materials ( <b>BJ24_43</b> ) <u>B Love</u> (The University of Michigan, USA)
	<b>Session 7 – Adhesion and adhesives in dentistry (Chair: B Love, T Pinho)</b>
	<b>Room B032</b>
14:40	Effect of ageing on the mechanical properties of dental resin with and without Bisphenol A ( <b>BJ24_32</b> ) <u>L Lopes-Rocha</u> (CESPU, Portugal), RJC Carbas, LFM da Silva
15:00	Alternative materials in mechanical tests: Impact in dental adhesion protocols ( <b>BJ24_33</b> ) <u>MJ Calheiros-Lobo</u> (CESPU, Portugal), M Calheiros-Lobo, RJC Carbas, LFM da Silva, T Pinho
15:20	Adhesive interface of resin-matrix composite and cements for restorative dentistry: An in vitro study ( <b>BJ24_44</b> ) <u>R Fidalgo-Pereira</u> (Universidade Católica Portuguesa, Portugal), Ó Carvalho, S Catarino, JCM Souza
15:40	
<b>16:00-16:20</b>	<b>COFFEE BREAK</b>
	<b>Session 8 – Adhesion and adhesives in veterinary and medicine (Chair: JC del Real Romero, F Arán Ais)</b>
	<b>Room B032</b>
16:20	Characterization of mechanical properties of a commercial adhesive applied in the equestrian sector ( <b>BJ24_7</b> ) <u>CMC Ferreira</u> (INEGI, Portugal), BD Simões, EAS Marques, RJC Carbas, LFM da Silva
16:40	Electro-adhesive performance of double network hydrogels based on acrylamide and sodium alginate ( <b>BJ24_16</b> ) <u>S Jalali</u> (University of Alberta, Canada), H-J Chung, D Sameoto
17:00	Comparative biomechanical analysis of two tension band wiring methods for transverse patellar fracture fixation ( <b>BJ24_21</b> ) <u>DS Martínez</u> , <u>JC del Real Romero</u> (Comillas Pontifical University, Spain), FL-O Muñoz
17:20	Bioadhesion and cytotoxicity in-vitro evaluation of different 3D printed polymeric biomaterials ( <b>BJ24_22</b> ) <u>MS Lozano</u> , <u>MIA Sánchez</u> , <u>MIM López</u> , <u>F Arán Ais</u> (INESCOP Centre for innovation and technology, Spain)
20:00	<b>BJ2024 BANQUET at Porto Caves</b>