

Programme of BJ2024

Author underlined → presenting author

* Plenary lecture

Thursday 5 December 2024	
8:40	BJ 2024 Opening (B032)
	Room B032
9:00*	Bioinspired soft adhesives in biomedical applications (BJ24_1) <u>JF Mano</u> (University of Aveiro, Portugal)
	Session 1 – Biomimetic adhesives (Chair: SN Gorb, JF Mano)
	Room B032
9:40	Biomimetic adhesive microstructures as an approach to understand functioning biological systems (BJ24_3) <u>SN Gorb</u> (Kiel University, Germany)
10:00	Sea urchin bioadhesion: from characterization to emulation (BJ24_28) <u>R Santos</u> (University of Lisbon, Portugal)
10:20	Design and manufacture of bio-inspired combined attachment mechanisms (BJ24_39) <u>M Jafarpour</u> (Kiel University, Germany), SN Gorb
10:40-11:00	COFFEE BREAK
	Session 2 – Biological adhesives (Chair: AY Stark, U Rothbacher)
	Room B032
11:00	Egg glue of the stinkbug <i>Nezara viridula</i> : Production site, chemo-mechanical properties, and adhesive strength on natural and artificial surfaces (BJ24_17) <u>A Baral</u> (University of Perugia, Italy), S Piersanti, S Caponi, M Mattarelli, S Gorb, G Salerno, M Reborá
11:20	Tunicate larval adhesion: Cells, species differences and analyses of their secretions (BJ24_25) <u>F Zeng</u> , L Ciampa, <u>U Rothbacher</u> (University Innsbruck, Austria)
11:40	Fish protein-based bio-adhesives for wooden structures (BJ24_26) <u>M Zouari</u> (InnoRenew CoE, Slovenia), J G Pečnik, M Schwarzkopf
12:00	Functional amyloids in adhesive secretions from a marine invertebrate? (BJ24_27) <u>P Flammang</u> (Université de Mons, Belgium), M Bonneel, E Moe, A Whaite
12:20	Biological adhesive systems in a changing world (BJ24_37) <u>AY Stark</u> (Villanova University, PA, USA)
13:00-14:00	LUNCH BREAK
	Room B032
14:00*	Bioinspired structured adhesives for various surfaces (BJ24_2) <u>L Xue</u> (Wuhan University, China)
	Session 3 – Bioinspired interfaces and surfaces (Chair: E Pierro, KT Turner)
	Room B032
14:40	On the micro-drilling of the rigid substrates: does it always improve adhesion? (BJ24_12) <u>E Pierro</u> (University of Basilicata, Italy), G Carbone
15:00	Exploiting disorder in the design of architected interfaces (BJ24_13) S Fulco, M Budzik, <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 (BJ24_30) <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 (BJ24_31) <u>T Volders</u> (University of Liege, Belgium), M Contino, F Passoni, L Andena, D Ruffoni	
16:00-16:20	COFFEE BREAK	
	Session 4 – Bioadhesion (Chair: S Wang, EV Gorb)	
	Room B032	
16:20	Delamination-induced pattern formations of tree bark (BJ24_14) <u>T Yamaguchi</u> (The University of Tokyo, Japan), Y Uenobu	
16:40	Nanoscale chemical-mechanical characterization of interphase and bondline (BJ24_18) <u>S Wang</u> (University of Tennessee, USA)	
17:00	Solid lubrication at the micro-scale: the case of insect joints (BJ24_34) <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? (BJ24_35) <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 (BJ24_36) <u>C Barrera</u> (University of Vienna, Austria), T Wollesen	
19:00	Poster session and RECEPTION (Room under the Auditorium)	
Joining of natural materials		
Poster 1	Strength improvements of wooden joints by using tough layer technique (BJ24_6)	<u>S Jalali</u> (INEGI, Portugal), EAS Marques, RJC Carbas, LFM da Silva
Biologically inspired joints		
Poster 1	Bio-inspired composite adherends: enhancing adhesive joint toughness under high-rate four-point bending (BJ24_4)	<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 (BJ24_38)	<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 (BJ24_24)	<u>EAS Marques</u> (University of Porto, Portugal), M Kasaei, S Jalali, RJC Carbas, LFM da Silva
Adhesion and adhesives in veterinary		
Poster 4	Adhesives in veterinary medicine: a review (BJ24_8)	<u>CMC Ferreira</u> (INEGI, Portugal), BD Simões, EAS Marques, RJC Carbas, LFM da Silva
Bioadhesion		
Poster 5	Attachment ability of <i>Coccinella septempunctata</i> male and female beetles to a smooth substrate (BJ24_9)	<u>EV Gorb</u> (Kiel University, Germany), SN Gorb

Friday 6 December 2024	
8:40*	Bio-based adhesives from wood sources - liquefied wood, lignin and tannin (BJ24_14) <u>M Šernek</u> (University of Ljubljana, Slovenia)
	Session 5 – Joining of wood I (Chair: M Šernek, LH Carvalho)
	Room B032
9:20	Evaluating the mechanical properties of bio-based polyurethane adhesives in zero-thickness bond applications (BJ24_5) <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 (14) <u>M Šernek</u> (University of Ljubljana, Slovenia)
10:00	Impact of tannins type on their performance as binder in the production of particleboards (BJ24_19) <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 (BJ24_20) <u>B-D Park</u> (Kyungpook National University, Republic of Korea), <u>ES Wibowo</u> , <u>S Ghahri</u> , <u>EC Watumlawar</u>
10:40-11:00	COFFEE BREAK
	Session 6 – Joining of wood II (Chair: T Yamaguchi, LFM da Silva)
	Room B032
11:00	A path for increasing the sustainability of vehicle structural design supported by adhesive bonding (BJ24_23) <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 (BJ24_29) <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 (BJ24_40) <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 (BJ24_41) <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 (BJ24_42) <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>
13:00-14:00	LUNCH BREAK
14:00*	Rationalizing surface preparations, complexity and eventual outcomes tied to adhesion in dental materials (BJ24_43) <u>B Love</u> (The University of Michigan, USA)

	Session 7 – Adhesion and adhesives in dentistry (Chair: B Love, T Pinho)
	Room B032
14:40	Effect of ageing on the mechanical properties of dental resin with and without Bisphenol A (BJ24_32) <u>L Lopes-Rocha</u> (CESPU, Portugal), RJC Carbas, LFM da Silva
15:00	Alternative materials in mechanical tests: Impact in dental adhesion protocols (BJ24_33) <u>MJ Calheiros-Lobo</u> (CESPU, Portugal), M Calheiros-Lobo, RJC Carbas, LFM da Silva, T Pinho
16:00-16:20	COFFEE BREAK
	Session 8 – Adhesion and adhesives in veterinary and medicine (Chair: JC del Real Romero, F Arán Ais)
	Room B032
16:20	Characterization of mechanical properties of a commercial adhesive applied in the equestrian sector (BJ24_7) <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 (BJ24_16) <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 (BJ24_21) <u>DS Martínez</u> , <u>JC del Real Romero</u> (Comillas Pontifical University, Spain), <u>FL-O Muñoz</u>
17:20	Bioadhesion and cytotoxicity in-vitro evaluation of different 3D printed polymeric biomaterials (BJ24_22) <u>MS Lozano</u> , <u>MIA Sánchez</u> , <u>MIM López</u> , <u>F Arán Ais</u> (INESCOP Centre for innovation and technology)
20:00	BJ2024 BANQUET at Porto Caves