

## MONDAY, OCTOBER 11<sup>TH</sup> – MORNING

08:45 **Opening Ceremony**  
*V. Nassiet (FR) – Chair of the Steering Committee EURADH 2021*

### SOFT / Soft Matter

Plenary Room – Chair: V. Nassiet (FR)

09:00 Adhesion rupture of soft polymers: instabilities and dissipation  
*Plenary lecture*  
**E. Barthel** - SIMM, CNRS, INP, ESPCI Paris (FR)

### SOFT 1 / Soft Matter

Room A – Chair: G. Miquelard-Garnier (FR)

09:50 Detachment condition of PSA characterized by a probe tack test with several scales of contact areas

**K. Takahashi<sup>1</sup>, K. Inaba<sup>2</sup>, K. Kishimoto<sup>2</sup>**

<sup>1</sup> Hokkaido Univ. - Sapporo (JP)

<sup>2</sup> Tokyo Institute of Technology - Tokyo (JP)

10:10 Removal of an acrylic adhesive from the top of a micrometric pillar  
**C. Poulard, A. Duigou-Majumdar, P. Cortet**  
*Univ. Paris-Saclay (FR)*

10:30 **Break**

10:45 A microdomain structure and adhesive property of single lap joint bonded with polyurethanes  
**K. Kojio, K. Obayashi, C.W. Chu, A. Takahara**  
*Kyushu Univ. – Fukuoka (JP)*

11:05 Rate dependent dry and wet adhesion of a composite adhesive  
**K. Kuldeep<sup>1</sup>, A.G. Ghatak<sup>2</sup>**  
<sup>1</sup> Indian Institute of Technology - Kanpur (IN)  
<sup>2</sup> Indian Institute of Technology – New Delhi (IN)

11:25 Evaluation of adhesion strength by focusing on strain rate of PSA layer in PEEL test  
**M. Yamada<sup>1</sup>, K. Takahashi<sup>2</sup>, N. Fujimura<sup>2</sup>, T. Nakamura<sup>2</sup>**  
<sup>1</sup> Division of Mechanical and Space Engineering, Hokkaido Univ. - Sapporo (JP)  
<sup>2</sup> Division of Mechanical and Aerospace Engineering, Hokkaido Univ. - Sapporo (JP)

11:45 Mode I creep fracture of rubber-like adhesive joints controlled on constant crack driving force  
**P. Schrader, C. Schmandt, S. Marzi**  
*Institute of Mechanics and Materials, Technische Hochschule Mittelhessen – Giessen (DE)*

### SURF 1 / Surfaces

Room B – Chair: H. Terryn (BE)

09:50 Development of new surface pre-treatments for the adhesive bonding of aluminium surfaces  
**J. Layec<sup>1</sup>, F. Ansart<sup>1</sup>, S. Duluard<sup>1</sup>, V. Turq<sup>1</sup>, M.P. Labeau<sup>2</sup>**  
<sup>1</sup> CIRIMAT, Toulouse (FR)  
<sup>2</sup> Rhodia Operations, Aubervilliers (FR)

~~10:10 Role of the surface functionalization, texturation and crystallization for aluminium adhesion of plasma treated PEEK~~  **canceled**  
~~**J-F. Coulon<sup>1,2</sup>, M. Yengui<sup>1</sup>, F. Poncin-Epaillard<sup>2</sup>**~~  
~~<sup>1</sup> ECAM Rennes-Louis De Broglie – Rennes (FR)~~  
~~<sup>2</sup> Institut des Molécules et Matériaux du Mans – Le Mans (FR)~~

10:30 **Break**

## MONDAY, OCTOBER 11<sup>TH</sup> – MORNING

- 10:45 Instantaneously discriminating the best adhesion/corrosion compromise in polymer-based zirconium-conversions despite high surface energies  
**E. Chevallier<sup>1</sup>, L. Augée<sup>2</sup>, Q. Boyer<sup>2</sup>, M.P. Labeau<sup>2</sup>, P. Moreau<sup>2</sup>**  
<sup>1</sup> Solvay - Lyon (FR)  
<sup>2</sup> Solvay - Paris (FR)
- 11:05 Improvement of adhesion properties of polyamide 11 and 12 by atmospheric pressure plasma treatment  
**M. Bahrami<sup>1</sup>, J.A. Butenegro<sup>1</sup>, J. Abenojar<sup>1,2</sup>, M.A. Martínez<sup>1</sup>**  
<sup>1</sup> In-Service Materials Performance Group, Univ. Carlos III - Madrid (ES)  
<sup>2</sup> Mechanical Engineering Department, Univ. Pontificia Comillas - Madrid (ES)
- 11:25 Atmospheric reducing plasma modification of PTFE for adhesion improvement  
**R. Krumpolec<sup>1</sup>, J. Feng<sup>1</sup>, J. Kelar<sup>1</sup>, D. Kováčik<sup>1</sup>, M. Cernák<sup>1</sup>, T. Tölke<sup>2</sup>, O. Beier<sup>2</sup>, A. Pfuch<sup>2</sup>**  
<sup>1</sup> R&D Centre for Plasma and Nanotechnology Surface Modifications, Masaryk Univ.- Brno (CZ)  
<sup>2</sup> Innovent E.v. Technology Development - Jena (DE)
- 11:45 Atmospheric pressure plasma treatment and thin film deposition prior adhesive bonding on polymers  
**D. Ben Salem, M. Buske**  
Plasmatreat R&D - Steinhagen (DE)

### TOOL 1 / Novel Tools

Room C – Chair: N. Terasaki (JP)

- 09:50 Piezo actuator-based method for evaluating dynamic nanometre-scale shear properties and effect of adherend surface state in pressure-sensitive adhesives  
**Z. Miyagi, Y. Takami**  
Meiji Univ., Department of Mechanical Engineering - Kawasaki (JP)
- 10:10 Interfacial characterization of consolidated CF/PEKK composites manufactured under Vacuum Bag Only (VBO)  
**R. Arquier, G. Régnier, G. Miquelard-Garnier, I. Iliopoulos**  
Laboratoire PIMM, Arts et Métiers Institute of Technology, CNRS, CNAM, Hesam Univ. - Paris (FR)

10:30

Break

- 10:45 Piezoresistive adhesives for timber constructions  
**C. Winkler<sup>1</sup>, D. Steinhäuser<sup>2</sup>, U. Schwarz<sup>1</sup>, M. Jahreis<sup>1</sup>**  
<sup>1</sup> Eberswalde Univ. for Sustainable Development - Eberswalde (DE)  
<sup>2</sup> Univ. Applied Sciences, Erfurt (DE)
- 11:05 Monitoring ageing of a bonded joint by fiber optic sensor based on Fresnel reflection to map the local water content field  
**R. Grangeat, M. Girard, C. Lupi, D. Leduc, F. Jacquemin**  
Univ. Nantes-Gem - Saint Nazaire (FR)
- 11:25 Laser shock adhesion test and scratch-test: a comparative study for thin metallic PVD coatings  
**A. Michau<sup>1</sup>, V. Guipont<sup>2</sup>**  
<sup>1</sup> Univ. Paris-Saclay, CEA, Service d'Etudes Analytiques et de Réactivité des Surfaces - Gif-sur-Yvette (FR)  
<sup>2</sup> MAT-Centre Des Matériaux, CNRS UMR 7633, Mines ParisTech - PSL Univ. - Evry (FR)
- 11:45 Novel method of adhesive analysis by means of in-situ CT measurements  
**E. Stammen, J. Philipp, K. Dilger**  
Tu Braunschweig, Institute of Joining and Welding - Braunschweig (DE)

12:05

Lunch Break

## MONDAY, OCTOBER 11<sup>TH</sup> – AFTERNOON

### NCHEM 1 / Novel Chemistry

Room A – Chair: J.C. Del Real Romero (ES)

- 13:30 Structural adhesives – fully biobased  
**A. Hartwig<sup>1</sup>, K. Richter<sup>1</sup>, S. Wellmann<sup>2</sup>, M. Blumenstein<sup>3</sup>**  
<sup>1</sup> Fraunhofer IFAM - Bremen (DE)  
<sup>2</sup> Colltech R&d Center GmbH - Maxdorf (DE)  
<sup>3</sup> Hobum Oleochemicals GmbH - Hamburg (DE)
- 13:50 Chemorheological analysis and rheokinetic study of carbohydrate-hydroxymethylfurfural-amine adhesives  
**C. Thoma<sup>1,2</sup>, P. Solt<sup>1</sup>, W. Sailer-Kronlachner<sup>1,2</sup>, T. Rosenau<sup>3</sup>, A. Potthast<sup>3</sup>, J. Konnerth<sup>2</sup>, A. Pellis<sup>4</sup>, H.W.G. Van Herwijnen<sup>1,2</sup>**  
<sup>1</sup> Wood K Plus-Competence Center of Wood, Tulln an der Donau (AT)  
<sup>2</sup> Institute of Wood Technology and Renewable Materials, BOKU Univ. Wien, Tulln (AT)  
<sup>3</sup> Institute of Chemistry of Renewable Resources, BOKU Univ. Wien (AT)  
<sup>4</sup> Institute of Environmental Biotechnology, BOKU Univ. Wien, Tulln (AT)
- 14:10 Isocyanate-filled kraft lignin microcapsules synthesized by pickering emulsion: a novel method for the development of one component adhesives  
**A. Braga Santos, J. Rocha Gouveia, D. Justino Carastan, D. Jackson Dos Santos**  
Federal Univ. ABC (UFABC) - São Paulo (BR)
- 14:30 Sustainable reactive polyurethane hot melt adhesives based on vegetable polyols for footwear industry  
**M.P. Carbonell-Blasco, F. Arán-Aís, M.Á. Pérez-Limiñana, E. Orgilés-Calpena**  
Footwear Technological Institute - Elda (ES)
- 14:50 Toughened matrices for carbon fiber reinforced polymers: fiber-matrix adhesion  
**J. Butenegro García<sup>1</sup>, M. Bahrami<sup>1</sup>, M.Á. Martínez Casanova<sup>1</sup>, J. Abenojar Buendía<sup>1,2</sup>**  
<sup>1</sup> In-Service Materials Performance Group, Univ. Carlos III - Madrid (ES)  
<sup>2</sup> Mechanical Engineering Department, Univ. Pontificia Comillas - Madrid (ES)
- 15:10 **Break**
- 15:30 Macromolecular engineering at the service of adhesion science  
*Keynote lecture*  
**E. Drockenmuller** - Univ. Claude Bernard, Lyon (FR)

### SURF 2 / Surfaces

Room B – Chair: D. Mercier (FR)

- 13:30 Studying the impact of the density of surface hydroxyl groups in epoxy adhesives using Self-Assembled Monolayers (SAMs)  
**L. David Tomasovic<sup>1,2</sup>, F. Gilbert<sup>1</sup>, D. Jacquet<sup>1</sup>, F. Bally Le-Gall<sup>2</sup>, A. Ponche<sup>2</sup>**  
<sup>1</sup> Arcelormittal Altantique et Lorraine - Montataire (FR)  
<sup>2</sup> Institut de Sciences des Matériaux de Mulhouse (IS2M) (FR)
- 13:50 Structuring management of surfaces for designing new slippery polymer surfaces  
**A. Teissonniere, J. Duchet-Rumeau, J.F. Gérard**  
Ingénierie des Matériaux Polymères-UMR 5223-INSA Lyon - Univ. Lyon – Villeurbanne (FR)

## MONDAY, OCTOBER 11<sup>TH</sup> – AFTERNOON

- 14:10 Dynamic wetting of droplets on vibrated complex surfaces  
**E. Contraires<sup>1</sup>, L. Fu<sup>2</sup>, M. Boussenna<sup>1</sup>, M. Guibert<sup>3</sup>, A. Le Bot<sup>1</sup>, S. Benayoun<sup>1</sup>**  
<sup>1</sup> *Laboratoire de Tribologie et Dynamique des Systèmes - Ecully (FR)*  
<sup>2</sup> *Institut de Physique de Nice (FR)*  
<sup>3</sup> *Centre de Recherche en Astrophysique de Lyon (FR)*
- 14:30 Direct evidence of amine-flax fibre reaction in epoxy systems: an in situ calorimetry study of the interphase formation  
**M. Aufray<sup>1</sup>, N. Canavy<sup>1</sup>, C. Thouron<sup>1</sup>, M. Boutin<sup>2</sup>, A. Rouilly<sup>2</sup>, C. Drouet<sup>1</sup>**  
<sup>1</sup> *CIRIMAT, Toulouse Univ. (FR)*  
<sup>2</sup> *LCA, Toulouse Univ. (FR)*
- 14:50 **Break**
- 15:30 How to study interfacial reactions at the buried interface between organic coatings and metals  
*Keynote lecture*  
**H. Terryn - VUB Brussels (BE)**

### DURA 1 / Durability

**Room C – Chair: J. Sena Cruz (PT)**

- 13:30 Influence of accelerated corrosion tests on mechanical properties of 1k epoxy structural adhesives  
**T. Bruckner<sup>1</sup>, T. Singewald<sup>1</sup>, L. Hader-Kregl<sup>1</sup>, I. Traxler<sup>1</sup>, S. Poeller<sup>2</sup>, G. Luckeneder<sup>3</sup>, C. Kern<sup>3</sup>, B. Strauss<sup>3</sup>, M. Hafner<sup>4</sup>, C. Paulik<sup>5</sup>**  
<sup>1</sup> *CEST Competence Center for Electrochemical Surface Technology, Wiener Neustadt (AT)*  
<sup>2</sup> *Henkel AG & Co. KGaA, Düsseldorf (DE)*  
<sup>3</sup> *Voestalpine Stahl GmbH, Linz (AT)*  
<sup>4</sup> *Amag Rolling GmbH, Ranshofen (AT)*  
<sup>5</sup> *Johannes Kepler Univ., Institute for Chemical Technology of Organic Materials, Linz (AT)*
- 13:50 Durability of label adherence for pipe traceability in the oil&gas industry  
**A. Francois-Heude, C. Fabas, B. Sottiaux**  
*Vallourec - Aulnoye-Aymeries (FR)*
- 14:10 Local ageing and delamination performance of EVSi/aluminium-laminates under superimposed mechanical and environmental loads  
**G. Riedl, R. Pugstaller, G. Wallner**  
*Institute of Polymeric Materials and Testing, Johannes Kepler Univ. - Linz (AT)*
- 14:30 Effects of hygrothermal ageing and surface treatments on a repaired 3D woven composite material  
**C. Gillet<sup>1,2</sup>, V. Nassiet<sup>1</sup>, B. Hassoune-Rhabbour<sup>1</sup>, F. Poncin-Epaillard<sup>3</sup>, T. Tchalla<sup>2</sup>**  
<sup>1</sup> *Laboratoire Génie de Production, INP-ENIT, Univ. Toulouse - Tarbes (FR)*  
<sup>2</sup> *Safran Aircraft Engines, Villaroche Site - Moissy-Cramayel (FR)*  
<sup>3</sup> *Institut des Molécules et Matériaux du Mans, Le Mans (FR)*
- 14:50 Co-bonded thermoplastic for rain erosion protection of wind turbine blades  
**J. Seyyed Monfared Zanjani, O. Erartsin, I. Baran, R. Akkerman**  
*Faculty of Engineering Technology, Univ. Twente - Enschede (NL)*
- 15:10 **Break**
- 15:30 Superimposed mechanical-environmental durability of polymeric hybrid laminates  
*Keynote lecture*  
**G.M. Wallner - IPMT, Johannes Kepler Univ, Linz (AT)**

## TUESDAY, OCTOBER 12<sup>TH</sup> – MORNING

### BOND / Structural Bonding

Plenary Room – Chair: V. Nassiet (FR)

- 09:00 Bonding XXL  
*Plenary lecture*  
**T. Vallée** – Fraunhofer IFAM, Bremen (DE)

### SURF 3 / Surfaces

Room A – Chair: E. Contraires (FR)

- 09:50 Linking adhesion force to degree of molecular contact measured by fret methods  
**M. Simoes, G. Usrtoger, R. Schennach, U. Hirn**  
<sup>1</sup> Institute of Bioproducts and Paper Technology, Graz Univ. (AT)  
<sup>2</sup> Institute of Solid-State Physics, Graz Univ. (AT)
- 10:10 A molecular dynamics simulation on polymer-metal system – effects of nanostructure at interface  
**T. Miura<sup>1</sup>, M. Funada<sup>2</sup>, Y. Shimo<sup>1</sup>, H. Morita<sup>1</sup>**  
<sup>1</sup> National Institute of Advanced Industrial Science and Technology (AIST) - Tsukuba (JP)  
<sup>2</sup> Innovative Structural Materials Association (ISMA) - Tsukuba (JP)

10:30 **Break**

- 10:45 Dynamical wetting of textured surfaces using the capillary bridge technique  
**L. Betti, Y. Bouret, X. Noblin, C. Cohen**  
*Institut de Physique de Nice, Univ. Côte d'Azur, Nice (FR)*
- 11:05 Effect of laser texturing environment on wetting of biomimetic superhydrophobic surfaces textured by femtosecond laser pulses  
**S. Basset<sup>1, 2</sup>, G. Heisbourg<sup>1</sup>, A. Pascale-Hamri<sup>3</sup>, S. Benayoun<sup>2</sup>, S. Valette<sup>2</sup>**  
<sup>1</sup> EDF R&D, Lab Les Renardières - Moret-Loing-Et-Orvanne (FR)  
<sup>2</sup> Laboratory of Tribology and System Dynamics, Ecole Centrale de Lyon - Écully (FR)  
<sup>3</sup> Manutech Usd - Saint-Etienne (FR)
- 11:25 Adhesion mechanisms between cyanoacrylates and surfaces of Au, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub> and TiO<sub>2</sub>  
**P. Moritz<sup>1</sup>, L. Wegewitz<sup>1</sup>, O. Hoefft<sup>2</sup>, W. Maus-Friedrichs<sup>1</sup>.**  
<sup>1</sup> Clausthal Centre for Material Technology, Clausthal Univ., Clausthal-Zellerfeld (DE)  
<sup>2</sup> Institute of Electrochemistry, Clausthal Univ., Clausthal-Zellerfeld (DE)

## TUESDAY, OCTOBER 12<sup>TH</sup> – MORNING

### BOND 1 / Structural Bonding

Room B – Chair: V. Mantic (ES)

- 09:50 Study of the adhesion mechanisms in a titanium Ti-6Al-4V\_composite bonded joint & Effect of environmental aging  
**C. Perderiset<sup>1</sup>, F. Georgi<sup>1</sup>, J.L. Bouvard<sup>1</sup>, P. Montmitonnet<sup>1</sup>, A. Grunenwald<sup>2</sup>, F. Rasselet<sup>2</sup>, J.B. Charpentier<sup>1</sup>**  
<sup>1</sup> CEMEF, CNRS, Mines ParisTech PSL – Sophia-Antipolis (FR)  
<sup>2</sup> Safran Aircraft Engines - Villaroche (FR)
- 10:10 Investigations of structural adhesives for the automotive industry with focus on interfacial delamination and water absorption using EIS and SKP  
**T. Singewald<sup>1</sup>, G. Schimo-Aichhorn<sup>1</sup>, T. Bruckner<sup>1</sup>, L. Hader-Kregl<sup>1</sup>, S. Pöller<sup>2</sup>, C. Kern<sup>3</sup>, G. Luckeneder<sup>3</sup>, K.H. Stellnberger<sup>3</sup>, M. Hafner<sup>4</sup>, M. Valtiner<sup>5</sup>**  
<sup>1</sup> CEST Competence Center for Electrochemical Surface Technology, Wiener Neustadt (AT)  
<sup>2</sup> Henkel AG & Co. KGaA - Düsseldorf (DE)  
<sup>3</sup> Voestalpine Stahl GmbH - Linz (AT)  
<sup>4</sup> Amag Rolling GmbH - Braunau-Ranshofen (AT)  
<sup>5</sup> Institute of Applied Physics, Univ. Vienna (AT)
- 10:30 **Break**
- 10:45 Fatigue crack propagation in adhesively-bonded assemblies under mixed-mode ratios  
**C. Bernolin<sup>1</sup>, G. Stamoulis<sup>2</sup>, P. Bidaud<sup>1</sup>, N. Dagorn<sup>3</sup>, W. Albouy<sup>3</sup>, D. Thévenet<sup>1</sup>**  
<sup>1</sup> ENSTA Bretagne, UMR CNRS 6027, IRDL, Brest (FR)  
<sup>2</sup> Univ. Bretagne Occidentale, UMR CNRS 6027, IRDL, Brest (FR)  
<sup>3</sup> Safran Composites, Itteville (FR)
- 11:05 Temperature dependent fatigue crack growth in electrical steel laminates with micrometer-thick epoxy layers  
**R. Pugstaller, G.M. Wallner**  
*Institute of Polymeric Materials and Testing, CDL-Agepol, Johannes Kepler Univ., Linz (AT)*
- 11:25 Accelerated curing of adhesively bonded G-FRP tube connections  
**T. Vallée<sup>1</sup>, M. Voss<sup>1</sup>, M. Kaufmann<sup>1</sup>, M. Albiez<sup>2</sup>**  
<sup>1</sup> Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Bremen (DE)  
<sup>2</sup> Karlsruher Institut für Technologie, Steel and Lightweight Structures – Karlsruhe (DE)
- ~~11:45 Remanufacture of recycled composites by using adhesives **B. Adams**  
*Univ. Oxford (UK)*~~ **canceled**

## TUESDAY, OCTOBER 12<sup>TH</sup> – MORNING

### **NCHEM 2 / Novel Chemistry**

**Room C – Chair: A. Hartwig (DE)**

- 10:45 Debondable adhesives without decomposition of cured adhesive polymers  
**E. Sato, S. Okada, K. Katagi**  
*Osaka City Univ. (JP)*
- 11:05 Development and characterization of water-borne model epoxy varnishes for thin coating layers on electrical steel  
**C. Marchfelder<sup>1</sup>, R. Pugstaller<sup>1</sup>, G. Wallner<sup>1</sup>, O. Brüggemann<sup>2</sup>**  
<sup>1</sup>*Institute of Polymeric Materials and Testing, CDL-Agepol, Johannes Kepler Univ. - Linz (AT)*  
<sup>2</sup>*Institute of Polymer Chemistry, Johannes Kepler Univ. - Linz (AT)*
- 11:25 Reversible bonding for structural dismantling application  
**S. Padilla<sup>1</sup>, B. Hassoune-Rhabbour<sup>1</sup>, V. Nassiet<sup>1</sup>, T. Mérian<sup>1</sup>, S. Roy<sup>2</sup>, N. Mignard<sup>3</sup>, C. Pillon<sup>3</sup>**  
<sup>1</sup>*ENIT - Tarbes (FR)*  
<sup>2</sup>*ENIT - Nanterre (FR)*  
<sup>3</sup>*ENIT - Saint-Etienne (FR)*
- 11:45 Optimization of the curing process of dual-hardening adhesive used in thermoplastic injection molded housings  
**A. Hallak**  
*Microsystems Engineering - Freiburg Im Breisgau (DE)*

12:05

**Lunch Break**

## TUESDAY, OCTOBER 12<sup>TH</sup> – AFTERNOON

### PROC 1 / Advances in process

Room A – Chair: S. Chaignaud (FR)

- 13:30 Under water application of secondary elements for offshore structures by adhesive bonding  
**S. Myslicki<sup>1</sup>, A. Knape<sup>1</sup>, T. Tom<sup>2</sup>, L. Linda<sup>2</sup>, J. Jakob<sup>3</sup>, M. Albiez<sup>3</sup>**  
<sup>1</sup> Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM - Bremen (DE)  
<sup>2</sup> Fraunhofer Institute for Large Structures in Production Engineering IGP - Rostock (DE)  
<sup>3</sup> Kit Steel and Lightweight Construction; Research Institute for Steel, Wood and Stone - Karlsruhe (DE)
- 13:50 On the adhesion of ceramic composite encapsulations  
**T. Kohler<sup>1,2</sup>, S. Henneck<sup>1</sup>, G. Hejtmann<sup>1</sup>, M.J. Hoffmann<sup>2</sup>**  
<sup>1</sup> Robert Bosch GmbH  
<sup>2</sup> Karlsruher Institut für Technologie
- 14:10 Laser surface preparation for adhesive bonding of aluminium  
**J. Lecomte, N. Cuvillier, P. Lespade, B. Martin, M. Péron**  
IRT Saint Exupéry - Bordeaux (FR)
- 14:30 Application of sealants in next generation redox flow batteries  
**D. Jannes, L. Hörl**  
Univ. Stuttgart (DE)
- 14:50 Filament stretching of adhesives  
**H. Fricke<sup>1</sup>, E. Stammen<sup>2</sup>, S. Koch<sup>2</sup>, F. Fassbender<sup>3</sup>**  
<sup>1</sup> Fraunhofer IFAM - Bremen (DE)  
<sup>2</sup> IFS TU Braunschweig (DE)  
<sup>3</sup> Dymax Europe GmbH - Wiesbaden (DE)

### BOND 2 / Structural Bonding

Room B – Chair: L. Goglio (IT)

- 13:30 A novel test for mechanical strength evaluation of high thickness and high elongation adhesive beads applied to Flat-Plate Solar (FPS) collectors  
**P. Guimarães Lacerda Neto<sup>1,2</sup>, J. Jumel<sup>2</sup>**  
<sup>1</sup> Univ. Bordeaux, CNRS, Arts et Métiers Institute of Technology, Bordeaux INP, INRAE, I2M Bordeaux, Talence (FR)  
<sup>2</sup> ENSTA Bretagne, UMR CNRS 6027, IRDL, Brest (FR)
- 13:50 Experimental investigations on pre-tensioned hybrid joints for structural steel applications  
**T. Vallée<sup>1</sup>, S. Myslicki<sup>1</sup>, C. Denkert<sup>2</sup>, G. Thomas<sup>2</sup>**  
<sup>1</sup> Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Wiener – Bremen (DE)  
<sup>2</sup> Fraunhofer Research Institution for Large Structures in Production Engineering IGP, Rostock (DE)
- 14:10 Development of a creep mechanical frame adapted to adhesive joints using Arcan sample  
**M. Loiseau<sup>1,2</sup>, S. Chataigner<sup>2</sup>, R. Créac'hcadec<sup>1</sup>, J.P. Court<sup>3</sup>, M.O. Quéméré<sup>3</sup>**  
<sup>1</sup> ENSTA Bretagne, Institut de Recherche Dupuy de Lôme (IRDL), UMR CNRS 6027 - Brest (FR)  
<sup>2</sup> MAST-SMC, Univ. Gustave Eiffel, Campus de Nantes - Bouguenais (FR)  
<sup>3</sup> Cold Pad - Paris (FR)
- 14:30 An overview of mechanical characterization and numerical modelling techniques for supporting the design of bonded automotive structures under impact loads  
**E. Marques<sup>1</sup>, P. Nunes<sup>1</sup>, A. Akhavan-Safar<sup>1</sup>, R. Carbas<sup>1</sup>, L. Da Silva<sup>2</sup>**  
<sup>1</sup> INEGI – Institute of Science and Innovation in Mechanical and Industrial Engineering, Porto (PT)  
<sup>2</sup> Faculdade de Engenharia, Univ. Porto (PT)
- 14:50 Implementation of mechanical metamaterials as anti-fouling surfaces  
**Z. Azimi Dijvejin, K. Golovin**  
Okanagan Polymer Engineering Research & Applications Lab., Univ. British Columbia, Kelowna (CA)



## TUESDAY, OCTOBER 12<sup>TH</sup> – AFTERNOON

### SOFT 2 / Soft Matter

Room C – Chair: C. Poulard (FR)

- 13:30 Micromechanics and molecular interpretation of cavitation in soft polymer layers  
**F-M. Le Menn, C. Creton, E. Barthel**  
*SIMM, ESPCI Paris, Univ. PSL, CNRS, Sorbonne Univ., Paris (FR)*
- 13:50 Macroscopic evidence of the liquid-like nature of polydimethylsiloxane (PDMS) brushes  
**X. Zhao, K. Golovin**  
*Univ. British Columbia - Kelowna (CA)*
- 14:10 Role of damage by sacrificial bonds: intrinsic differences between fatigue and toughness mechanisms in multiple network elastomers  
*Keynote lecture*  
**X. Morelle, G.E. Sanoja, J. Comtet, J. Yeh, M. Ciccotti, C. Creton**  
*SIMM-ESPCI-Sorbonne Univ. PSL - Paris (FR)*

14:40 *Break*

15:30 **Poster session #1**

## WEDNESDAY, OCTOBER 13<sup>TH</sup> – MORNING

### SURF 4 / Surfaces

Room A – Chairs: V. Nassiet (FR) & L. Da Silva (PT)

- 09:00 Structural adhesive bonding of polymers - Surface characteristics and adhesion mechanism  
*Keynote lecture (Adhesion Innovation Award 2020 winner)*  
**E. Arikan**  
*WIWeb, Erding (DE)*
- 09:30 Designing durable and scalable metal-based icephobic surface using plate buckling  
**K. Alasvand Zarasvand, K. Golovin**  
*The Univ. British Columbia-Okanagan Campus, Kelowna (CA)*
- 09:50 Adhesion optimization between incompatible polymers by interfacial engineering  
**F. Mashayekhi<sup>1</sup>, F. Addiego<sup>2</sup>, S. Westermann<sup>2</sup>**  
<sup>1</sup> *Luxembourg Institute of Science and Technology + Univ. Luxembourg - Esch-Sur-Alzette (LU)*  
<sup>2</sup> *Luxembourg Institute of Science and Technology - Esch-Sur-Alzette (LU)*
- 10:10 Tailoring glass fiber surface for the polymerization and crystallization of anionic PA6  
**A. Belkhiri<sup>1</sup>, O. De Almeida<sup>2</sup>, F. Chabert<sup>1</sup>, N. Virgilio<sup>3</sup>, H. Weleman<sup>1</sup>, V. Nassiet<sup>1</sup>**  
<sup>1</sup> *LGP-ENIT-INPT, Univ. Toulouse, Tarbes (FR)*  
<sup>2</sup> *Institut Clément Ader (ICA), Univ. Toulouse-CNRS UMR 5312-IMT Mines, Albi (FR)*  
<sup>3</sup> *Department of Chemical Engineering, Polytechnique Montréal, Québec (CA)*

### BOND 3 / Structural Bonding

Room B – Chair: T. Vallée (DE)

- 09:00 New results on the asymptotic behaviour of stresses near the tips of corners and cracks with spring boundary conditions  
*Keynote lecture*  
**V. Mantic**  
*Univ. Sevilla (ES)*
- 09:30 The control of the stress concentrations due to edge effects by a modulus function in adhesively bonded assemblies  
**A. Benali<sup>1,2</sup>, R. Créac'hcadec<sup>1</sup>, L. Sohier<sup>3</sup>, C. Cellard<sup>3</sup>, A. Moretti<sup>2</sup>**  
<sup>1</sup> *ENSTA Bretagne, UMR CNRS 6027, IRDL - Brest (FR)*  
<sup>2</sup> *Engineering Conception Maintenance, ECM - Paris (FR)*  
<sup>3</sup> *Univ. Bretagne Occidentale, UMR CNRS 6027, IRDL - Brest (FR)*
- 09:50 Development of structural adhesive characterization tests and environmental effects assessment  
**J. Bourbon<sup>1</sup>, J. Jumel<sup>2</sup>, S. Touzain<sup>3</sup>, J. El Yagoubi<sup>1</sup>**  
<sup>1</sup> *I2M UMR5295 - Talence (FR)*  
<sup>2</sup> *IRLD UMR6027 - Brest (FR)*  
<sup>3</sup> *LASIE UMR7356 - La Rochelle (FR)*
- 10:10 Numerical investigation of self-similar crack propagation along viscous interface during DCB test  
**J. Marquez Costa, J. Jumel**  
*IRDL-Institut de Recherche Dupuy de Lôme, ENSTA-Bretagne - Brest (FR)*

## WEDNESDAY, OCTOBER 13<sup>TH</sup> – MORNING

**DURA 2 / Durability**

**Room C – Chair: G.M. Wallner (AT)**

09:00 Adhesively bonded connections of composites/concrete structures: behaviour, durability and design

*Keynote lecture*

**J. Sena Cruz**

*ISISE, Univ. Minho, Guimarães (PT)*

09:30 Analysis of the local elastic modulus of an epoxy adhesive as a function of its water content

**R. Grangeat, M. Girard, C. Lupi, F. Jacquemin**

*Univ. Nantes - GEM - Nantes (FR)*

09:50 Re-usable thermally reversible crosslinked adhesives from robust Diels-Alder networks

**A. Slark, J. Wilson, J. Gregg**

*Univ. Sheffield (UK)*

10:10

*Break*

10:45 **Poster session #2**

12:15

*Lunch Break*

## WEDNESDAY, OCTOBER 13<sup>TH</sup> – AFTERNOON

### SURF / Surfaces

Plenary Room – Chair: C. Creton (FR)

- 13:30 Strategies for smart and slippery surfaces  
*Plenary lecture*  
**G. McHale** – Univ. Edinburgh (UK)

### SURF 5 / Surfaces

Room A – Chair: C. Creton (FR)

- 14:20 Self-transportation of low surface tension liquids elicited by low-hysteresis surface coatings  
**M. Soltaniyan, K. Golovin**  
*DREAM Laboratory, Department of Mechanical & Industrial Engineering, Univ. Toronto (CA)*
- 14:40 Anisotropic wetting behavior on polymeric textured surfaces  
**Q. Legrand, S. Benayoun, S. Valette**  
*LTDS, Ecole Centrale de Lyon, UMR CNRS 5513 - Écully (FR)*
- 15:00 Improving adhesion properties of polymeric soling materials by plasma technologies for a sustainable footwear industry  
**C. Ruzafa Silvestre, F. Arán Aís, E. Orgilés Calpena, M.Á. Pérez Limiñana**  
*Inescop. Footwear Technological Centre - Elda (ES)*
- 15:20 Liquid-like layers for ubiquitous solid and liquid repellency  
*Keynote lecture*  
**K. Golovin**  
*Univ. Toronto (CA)*

### BOND 4 / Structural Bonding

Room B – Chair: J. Jumel (FR)

- 14:20 Single-lap joints of similar and dissimilar adherends bonded with a polyurethane adhesive used in the automotive industry  
**L. Goglio<sup>1</sup>, R. Ciardiello<sup>1</sup>, C. Boursier Niutta<sup>1</sup>, F. Di Sciullo<sup>2</sup>**  
<sup>1</sup> *Politecnico Di Torino (IT)*  
<sup>2</sup> *CRF-FIAT Research Centre - Torino (IT)*
- 14:40 Hybrid bonded joints combining organic and anorganic adhesives  
**S. Myslicki<sup>1</sup>, M. Albiez<sup>2</sup>, T. Vallée<sup>1</sup>, T. Ummenhofer<sup>2</sup>**  
<sup>1</sup> *Fraunhofer Institute for Manufacturing Technology and Advanced Materials (IFAM) - Bremen (DE)*  
<sup>2</sup> *Kit Steel & Lightweight Structures – Research Center for Steel, Timber & Masonry - Karlsruhe (DE)*
- 15:00 Preliminary assessment of the fatigue strength of hybrid (bolted/bonded) joints as a function of the visco-elastic properties of the adhesive layer  
**M. To<sup>1,2,3</sup>, É. Paroissien<sup>1</sup>, F. Lachaud<sup>1</sup>, V. Nassiet<sup>2</sup>, B. Hassoune<sup>2</sup>, M. Aufray<sup>3</sup>, H. Weleman<sup>2</sup>**  
<sup>1</sup> *Institut Clément Ader (ICA), Univ. Toulouse, ISAE-SUPAERO, INSA, IMT Mines, Albi (FR)*  
<sup>2</sup> *Laboratoire Génie de Production (LGP), Univ. Toulouse, INP-ENIT, Tarbes (FR)*  
<sup>3</sup> *CIRIMAT, CNRS, INPT, UPS Toulouse (FR)*
- 15:20 Modelling and strength prediction of pre-tensioned hybrid joints for structural steel applications  
**T. Vallée<sup>1</sup>, S. Myslicki<sup>1</sup>, C. Denkert<sup>2</sup>, T. Gerke<sup>2</sup>**  
<sup>1</sup> *Fraunhofer Institute for Manufacturing Technology and Advanced Materials (IFAM), Bremen (DE)*  
<sup>2</sup> *Fraunhofer Research Institution for Large Structures in Production Engineering (IGP), Rostock (DE)*

## THURSDAY, OCTOBER 14<sup>TH</sup> – MORNING

### BIOAD / Bioadhesion

Plenary Room – Chair: C. Creton (FR)

09:00 ~~Bioinspired interfaces and adhesion in complex wet and icy environments~~

~~Plenary lecture~~

~~canceled~~

~~A. Synytska – Bavarian Polymer Institute (BPI), Univ. Bayreuth (DE)~~

09:45 Presentation of the next EURADH conference – A. Hartwig (DE)

### BIOAD / Bioadhesion

Room A – Chair: M. Aufray (FR)

09:55 Role of the extracellular polymeric substances in the early stages of biofilm formation on chromium surfaces

**D. Mercier<sup>1</sup>, E. Gardin<sup>2</sup>, S. Zanna<sup>1</sup>, A. Allion-Maurer<sup>2</sup>, P. Marcus<sup>1</sup>**

<sup>1</sup> Chimie ParisTech-CNRS, PSL Research Univ., Institut de Recherche de Chimie Paris (FR)

<sup>2</sup> APERAM - Isbergues (FR)

10:15 Test method for the characterization of bone-bone adhesive bonds

**V. Lührs<sup>1,2,3</sup>, S. Stösslein<sup>3</sup>, K. Thiel<sup>1</sup>, I. Grunwald<sup>3,4</sup>, A. Hartwig<sup>1,2</sup>**

<sup>1</sup> Fraunhofer Institute for Manufacturing Technology and Advanced Materials (IFAM) - Bremen (DE)

<sup>2</sup> Univ. Bremen (DE)

<sup>3</sup> Purenum GmbH - Bremen (DE)

<sup>4</sup> Hochschule Bremen-City Univ. of Applied Sciences - Bremen (DE)

10:35

Break

11:10 Coated membranes for the design of surgical adhesives

**M. Roquart<sup>1,2</sup>, E. Paliere<sup>2</sup>, N. Golse<sup>3</sup>, E. Vibert<sup>3</sup>, M. Manassero<sup>4,5</sup>, S. Norvez<sup>2</sup>, L. Corté<sup>1,2</sup>**

<sup>1</sup> Centre des Matériaux, CNRS, Mines ParisTech, PSL Univ. - Paris (FR)

<sup>2</sup> Molecular, Macromolecular Chemistry and Materials, ESPCI Paris, PSL Univ. - Paris (FR)

<sup>3</sup> Centre Hépatobiliaire, Hôpital Paul-Brousse - Villejuif (FR)

<sup>4</sup> Service De Chirurgie, Ecole Nationale Vétérinaire de Maisons-Alfort (FR)

<sup>5</sup> Biologie, Bioingénierie et Bioimagerie Ostéo-Articulaires, CNRS - Paris (FR)

11:30 Bioinspired complex coacervate-based adhesives

Keynote lecture

**M. Kamperman**

Zernike Institute for Advanced Materials, Univ. Groningen (NL)

### PROC 2 / Advances in progress

Room B – Chair: V. Nassiet (FR)

09:55 Use of UV-curing adhesive systems on non-transparent joining parts by using woven polymer optical fibre fabrics

**R. Seewald<sup>1</sup>, J. Kallweit<sup>2</sup>, A. Schiebahn<sup>1</sup>, U. Reisgen<sup>1</sup>, T. Gries<sup>2</sup>**

<sup>1</sup> ISF - Welding and Joining Institute of RWTH Aachen Univ. - Aachen (DE)

<sup>2</sup> ITA - Institut für Textiltechnik of RWTH Aachen Univ. - Aachen (DE)

10:15 Mechanical and electrical properties of cyanoacrylate adhesives by addition of graphene and graphene nanoplatelets nanofillers

**J. Del Real-Romero<sup>1</sup>, P. Carbonell-Blasco<sup>2</sup>, F. Aran-Ais<sup>2</sup>, E. Orgilés-Calpena<sup>2</sup>,**

**Y. Ballesteros-Iglesias<sup>1</sup>, E. Paz<sup>1</sup>**

<sup>1</sup> Univ. Pontificia Comillas - Madrid (ES)

<sup>2</sup> Inescop. Centre for Innovation and Technology - Madrid (ES)

10:35

Break

## THURSDAY, OCTOBER 14<sup>TH</sup> – MORNING

- 10:50 Self-adhesion at the interface between two polytetrafluoroethylene (PTFE) films  
**A. Mocellin<sup>1,2,3</sup>, G. Régnier<sup>1</sup>, J. Peixinho<sup>1</sup>, N. Schmitt<sup>2</sup>, S. Roux<sup>2</sup>**  
<sup>1</sup> PIMM, Arts et Métiers Institute of Technology, CNRS, CNAM, Hesam Univ. - Paris (FR)  
<sup>2</sup> LMT, ENS Paris-Saclay, Univ. Paris-Saclay, CNRS, - Gif-Sur-Yvette (FR)  
<sup>3</sup> Saint-Gobain Research Paris - Aubervilliers (FR)
- 11:10 Process data for efficient laser beam pre-treatment of fiber-reinforced plastics for adhesive bonding  
**C. Beier<sup>1</sup>, H. Dittmar<sup>2</sup>, J. Weiland<sup>1</sup>, A. Schiebahn<sup>1</sup>, P. Jäschke<sup>2</sup>, L. Overmeyer<sup>2</sup>, U. Reisgen<sup>1</sup>**  
<sup>1</sup> ISF-Welding and Joining Institute of RWTH Aachen Univ. - Aachen (DE)  
<sup>2</sup> Laser Zentrum Hannover E.v. - Hannover (DE)
- 11:30 Fracture behavior of unidirectional and woven fabric C/PEKK – titanium hybrid joints  
*Keynote lecture*  
**V. Marinosci<sup>1,2</sup>, W. Groupe<sup>2</sup>, M. De Rooij<sup>2</sup>, S. Wijskamp<sup>1</sup>, R. Akkerman<sup>1,2</sup>**  
<sup>1</sup> Thermoplastic Composites Research Center (TPRC) - Enschede (NL)  
<sup>2</sup> Univ. Twente, Engineering Technology - Enschede (NL)

### TOOL 2 / Novel Tools

Room C – Chair: L. Goglio (IT)

- 09:55 Further insight on amine-metal reaction in epoxy systems  
**Z. Fritah, C. Drouet, F. Salles, O. Marsan, C. Thouron, M. Aufray**  
CIRIMAT - Toulouse (FR)
- 10:15 A hybrid compliance calibration methodology for automated fatigue characterization  
**I. Leciñana Arregui<sup>1</sup>, J. Manterola<sup>1</sup>, J. Renart<sup>2</sup>, A. Turon<sup>2</sup>, J. Zurbitu<sup>1</sup>**  
<sup>1</sup> Ikerlan Technology Research Centre, BRTA, Arrasate-Mondragon (ES)  
<sup>2</sup> Amade, Univ. Girona, Arrasate-Mondragon (ES)
- 10:35 *Break*
- 10:50 Rheological properties of multilayer films in the presence of compatibilized interphase  
**G. Miquelard-Garnier<sup>1</sup>, Q. Beuguel<sup>2</sup>, A. Guinault<sup>2</sup>, C. Sollogoub<sup>2</sup>**  
<sup>1</sup> Laboratoire PIMM, UMR8006 - Paris (FR)  
<sup>2</sup> Laboratoire PIMM - Paris (FR)
- 11:10 Load- and path-controlled determination of bonding strength of butt joints - comparison between tensile testing machine and centrifuge technology  
**U. Rietz<sup>1</sup>, D. Lerche<sup>1</sup>, S. Hielscher<sup>2</sup>, J. Kubitzki<sup>2</sup>, U. Beck<sup>2</sup>**  
<sup>1</sup> LUM GmbH - Berlin (DE)  
<sup>2</sup> BAM Federal Institute for Materials Research and Testing - Berlin (DE)
- 11:30 Mechanoluminescence visualization of mechanical behavior at adhesive joint toward smart evaluation, design and prediction  
*Keynote lecture*  
**N. Terasaki**  
AIST, Tsukuba (JP)
- 12:00 **Closing ceremony**  
**SFV Michel Cantarel grants**