

DIMECC BSA and HYBRIDS Final Seminar Advanced materials for industrial applications

16.5.2017, 9:00-17:00, Konetekniikka 1 building, hall 216, Otakaari 4, Espoo

PROGRAM

- 08:30 **Registration and coffee**
- 09:00 **Introduction: Application-driven digitalized materials R&D renewing industries,**
Markku Heino, BSA and HYBRIDS Program Manager, Spinverse
- 09:15 **Session 1: Multifunctional thin coatings (HYBRIDS P1)**
- **Project Overview:** Combining performance with appearance in thin coatings, Erkki Levänen, TUT
 - **Result Highlight:** Supercritical CO₂ treatments to create artificial patina on hot-dip galvanized steel, Antti Markkula, SSAB Europe
 - **Result Highlight:** Corrosion protection of steel by hybrid PVD/ALD coatings, Jarmo Leppäniemi, Aalto
 - **Company comments:** Toni Luoto, LM-Dental and Juha Pimiä, Fiskars
- 09:45 **Session 2: Material challenges from emerging processes and applications (BSA P1)**
- **Project Overview:** Material challenges from emerging processes and applications, Pekka Pohjanne, VTT
 - **Result Highlight:** Crevice corrosion modelling, Jukka Vaari, VTT
 - **Result Highlight:** Mastering corrosion, Mari Lindgren, Outotec
 - **Company comments**
- 10:15 **Break**
- 10:35 **Session 3: Multifunctional thick coatings and composites (HYBRIDS P2)**
- **Project Overview:** Multifunctional thick coatings and composites, Petri Vuoristo, TUT
 - **Result Highlight:** Multifunctional coatings by high-kinetic thermal spraying, Ville Matikanen, TUT
 - **Result Highlight:** Improved coating solution to challenging applications - Valmet cases, Ulla Kanerva, Valmet Technologies Oyj
 - **Company comments:** Jari Knuuttila, Millidyne and Sauli Seppänen, Abloy
- 11:05 **Session 4: Novel steel concepts (BSA P3)**
- **Project Overview:** Breakthrough steels and applications- towards stronger and more sustainable world, Pasi Suikkanen, SSAB Europe
 - **Result Highlight:** Novel sustainable stainless steels, Severi Anttila, Outokumpu
 - **Result Highlight:** Superior bendability of S900MC, Antti Kaijalainen, University of Oulu
 - **Company comments**
- 11:35 **Session 5: Light multifunctional hybrid structures (HYBRIDS P3)**
- **Project Overview:** Light multifunctional hybrid structures, Kim-Niklas Antin, Aalto University
 - **Result Highlight:** KONE case - Performance and safety boosting with NDT, Petteri Valjus, Kone
 - **Result Highlight:** Improved polymer hybrid structures, Mira Juutilainen, Teknikum
 - **Company comments:** Mikko Lassila, Exel Composites and Marke Kallio, Metso (video)
- 12:05 **Lunch (Note! Lunch is served in two restaurants: Sodexo downstairs and Alvari in Otakaari 1 D)**
- 13:05 **Digitalizing Materials Development and PhD Education, Mikko Hokka, TUT**
- 13:30 **Session 6: Design beyond current codes (BSA P2)**
- **Project Overview:** Design beyond current codes, Pertti Mikkonen, SSAB Europe
 - **Result Highlight:** Relevance of laboratory wear experiments for the evaluation of in-service performance of materials, Kati Valtonen, TUT
 - **Result Highlight:** High power density gears, Gabor Szanti, Ata Gears Ltd
 - **Result Highlight:** Neural network-based models for estimation of SCF of welded joints, Mohammad Dabiri, LUT
 - **Result Highlight:** Possibilities of High Strength Steels in Marine Applications, Ingrid Lillemäe-Avi, Meyer Turku
 - **Company comments:** Jukka Kempainen, Protolab
- 14:10 **Coffee break**
- 14:30 **Session 7: Polymer multifunctional sliding materials (HYBRIDS P4)**
- **Project Overview:** Performance of polymeric and multilayer materials on dry and lubricated contacts under heavy operating conditions, Helena Ronkainen, VTT
 - **Result Highlight:** Lubricated multilayer journal bearings for demanding operating conditions in combustion engines, Sven Söchting, Wärtsilä Finland Oy
 - **Result Highlight:** Lubricated hybrid sliding bearings for demanding operating conditions, Arto Lehtovaara, TUT
 - **Company comments:** Tommi Ajoiviita, Nokian Renkaat Oyj, Perttu Rintala, Carbodeon Ltd Oy and Jani Turunen, Valmet
- 15:00 **Greetings from Tekes, Kimmo Kanto, Director, Networking businesses and research, Tekes**
- 15:10 **Next Steps within DIMECC, Harri Kulmala, DIMECC**
- 15:30-17:00 **Networking session**