



EUROPEAN TECHNICAL COATINGS CONGRESS 2014

**New Functions and Sustainability –
Drivers for Future Coatings**

3 – 5 September 2014

Gürzenich · Cologne · Germany



BOOK OF ABSTRACTS

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SCIENTIFIC PROGRAMME

Wednesday, 3 September 2014	4
Thursday, 4 September 2014	7
Friday, 5 September 2014	10

POSTER PROGRAMME

13

LECTURE ABSTRACTS

17

Plenary Lectures	17
Functional coatings/Nano technology	21
Corrosion protection	45
Sustainability in the coatings field/Saving resources/Biobased coatings	57
Polymers, pigments and other raw materials	69
Advances in coatings and inks sciences/Crosslinking an hardening	87
Progress in production, application and processes	113
Measuring and testing/New optical properties in coatings	121

POSTER ABSTRACTS

137

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Layout/Typesetting: PM-GratikDesign, Wächtersbach, Germany
Print: Settersdruck GmbH, Setters/TS., Germany
(Date: August 11, 2014)

Isabellensaal

MEASURING AND TESTING

	Page
08:30 3.22 The effect of coating thickness on pendulum hardness M. Bosma, Wageningen/NL, E. R. Rensen, Wageningen/NL	135
09:00 3.23 Limit values for VOC emissions from decorative products around the globe M. Augustin, Gatten/DK, R. C. Oppi, Gatten/DK, S. I. Manson, Folsom/US, C. Laffague, Gatten/DK	136

POLYMERS, PIGMENTS AND OTHER RAW MATERIALS

09:30 3.24 Novel high efficient NISAT thickeners C. Felto Fraile, Cologne/DE	81
10:00 COFFEE BREAK	
10:30 3.25 Socal® UP: An innovative high performance precipitated calcium carbonate to reduce TiO₂ content in emulsion paints P. Fritzen, Rheinberg/DE, O. Persyn, Salin de Giraud/FR	82
11:00 3.26 Next generation silicone antifoams: Structure property relationships in low VOC binder systems J. C. Corcuera, Senefte/BE, B. Lenoble, Senefte/BE, G. Witucki, Midland/US	84
11:30 3.27 Life after pyrrolidones – achieving hard coatings without increasing VOCs C. Evans, Preston/GB, I. Martin, Preston/GB, C. Smart, Preston/GB	85
12:00 BREAK	
12:15 AWARDS AND CLOSING CEREMONY	

Großer Saal

Page

P01	Selectively functionalized mesoporous silica for pH-controlled delivery of aromatic amino acids N. V. Roik, Kiev/UA, L. A. Belyakova, Kiev/UA, M. O. Dziuzko, Kiev/UA	139
P02	TEXSHIELD – Environmental friendly and Durable Oil and Water Repellence Finish on Technical Textiles I. Garex, Gent/BE	140
P03	New generation of synthesis nanocrystalline biomaterials for coating on Ti-6Al-4V Implant with EPD A. Khazdani, Isfahan/IR, E. K. ... M. Bonakdarchian, Isfahan/IR, M. Kalantar Motamed, Isfahan/IR, P. Soltani, Isfahan/IR	141
P04	Reduced fluorine content oil and water repellent treatments for technical textiles S. Sundaram, Cambridge/GB, A. Taylor, Cambridge/GB	142
P05	Practical application of easy-to-clean coatings H. Van den Bul, Diepenbeek/BE, D. Dewulf, Diepenbeek/BE, J. Bosmans, Diepenbeek/BE	143
P06	How key variables affect hot tack of emulsion polymers G. Metselaar, Heerenveen/NL, J. Renema, Heerenveen/NL, C. van Sluijs, Heerenveen/NL, A. van Meer, Heerenveen/NL	144
P07	Patterned Hydrophilic/Hydrophobic Recycled Paper Modified by Tuned Graphene Oxide Reduction S. Sabury, Tehran/IR, H. Maneshrou, Tehran/IR, S. M. Kassarifa, Tehran/IR, F. Sharif, Tehran/IR	145
P08	Alternative Strategies for Permanent Easy-to-clean Effects in Exterior Coatings C. Deschamps, Langenfeld/DE, N. Simpson, Langenfeld/DE, H. Gibbs, Langenfeld/DE	147
P09	Producing a piano-black design with plastics – Comparison of coating and alternative technologies J. Guenther, Lüdenscheid/DE, R. Zahradnik, Lüdenscheid/DE	148
P10	Novel Non-Tin Catalysts for Polyurethane and Organosilane Applications M. Groenewoud, Waddinxveen/NL, J. Florio, Norwalk/US, E. Bekelov, Düsseldorf/DE	150
P11	Body and Gloss - Precipitated Calcium Carbonate supports sustainable coating performance H. N. Emmerich, Köln/DE, B. Schmid, Oftringen/CH, G. Bender, Köln/DE	151
P12	New driers for high solids alkyls paint J. Nasadova, Pardubice/CZ	152
P14	Develop your "Green" Waterbased DTM Coatings with Nubriox 300 E. Requijo, Barcelona/ES, P. Pérez, Barcelona/ES	153
P15	Effect of conductive polymers and amorphous chalcogenides on mechanical and corrosion properties of organic coatings with high metallic zinc particle contents M. Hejdová, Pardubice/CZ, A. Kalendová, Pardubice/CZ, P. Nemeš, Pardubice/CZ, M. Kohn, Pardubice/CZ	155

Title: TEXSHIELD – Environmental friendly and Durable Oil and Water Repellence Finish on Technical Textiles

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Abstract

In the current market, the well-known brands of technical textiles, including protective textile are coated- finished with perfluorocarbon chemistry (PFCs) to possess highly durable oil and water repellent (OWR) properties. PFCs and PFOA are the main chemicals belonging to the family of perfluorochemicals also known as C8 chemistry. However, healthy and environmental issues are causes for the potential banning of these products. Moreover, recent studies have found PFC-C8 present in the blood, tissues and foetal-cords of human and its bio-persistence and bioaccumulation in the environment has caused significant concerns. Notably, due to these concerns, 3M withdrew Scotchguard from the market in 2000. C8 Fluorocarbons are currently under high regulatory pressure (2006/122/EC) and it's outlawed in favour of C6 or C4 chemistry, which performs lower to meet the industries durability and repellence standards.

There is a strong demand for replacing the C8 chemistry with an equally performing chemistry. The European TEX-SHIELD-project aims to develop a novel, multifunctional molecular structure with silica backbone that is chemically bondable to the fibre/filament to achieve a highly durable textile finish that is resistant against the oil/grease/powder stains by biological route. The reasonable silica content in it will replace the C8 chemistry while providing equal performance. In addition the project evaluates also suitable deposition techniques. TEX-SHIELD will provide the textile industry with a cost effective and environmentally safe OWR-finish on textiles, revolutionising the current market place, whilst resolving the concerns of the current PFC-C8 based stain-resistant coatings. This will profoundly reduce water consumption during washing for the consumers.

References:

- [1] Project Results of FP7-SME-2012-315497-TEX-SHIELD

New generation of synthesis nanocrystalline biomaterials for coating on Ti-6Al-4V Implant with EPD technique

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