



CAETS

EDITOR-IN-CHIEF'S FOREWORD



Dear Readers,

I am very pleased and proud to present to you, in this new issue of our Bulletin „Engineering Power“, the contributions of the distinguished members of our Academy and their coworkers: Prof. Emer. Ana Marija Grancarić, Ph. D., Prof. Emer. Ivo Soljačić, Ph. D., Prof. Tanja Pušić, Ph. D., Prof. Sandra Bischof, Ph. D., Katia Grgić, Dipl. Eng., Ivona Jerković, Dipl. Eng., all from the Faculty of Textile Technology, University of Zagreb, Croatia and Prof. Vladan Končar, Ph. D., Director of GEMTEX Research Laboratory in Roubaix, France.

Prof. Ana Marija Grancarić, Ph. D., Member of the Academy in the Department of Textile Technology and Professor Emeritus at the Faculty of Textile Technology, University of Zagreb, is the Guest Editor of this issue of the Engineering Power.

You can also learn more on the HATZ News and Activities in 2015 on the last pages of this Bulletin issue.

Vladimir Androšec
Editor-in-Chief

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GUEST EDITOR'S WORD



Dear Readers,

The issue of this Engineering Power edition is a part of the contribution of the University of Zagreb, Faculty of Textile Technology (TTF) to the European research area for growth and innovation in textiles through ten projects from the European funds (FP7, E!, LLP, IPA and ERASMUS+). These projects are mostly supported by AUTEX (Association of Textiles Universities), which belongs to EURATEX (European Apparel & Textile Confederation in Brussels, before ETP - European Textile Platform). The most important target of EURATEX are development of long-term strategic research agenda growth and innovation within this industry, the securing of the necessary finance for R&D, innovation, technology transfers, training for the textile and clothing sector. Important textile markets that have been identified consist of the next generation of intelligent personnel protection clothing and equipment, medical textiles for the future, a new light, highstrength building materials for low-weight construction, safe and energy-efficient transport systems, buildings and infrastructure. It is to point out that EURATEX regularly supports the dissemination of collaborative research results to industry.

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The European textile industry is a very strong player on a global scale and it is the second one after China. This industry should be looked from a value perspective and is much diversified, so it is feeding strongly into the entire major end applications, fashion, home/interiors and technical textiles which is a very unique position compared to other countries. Relating to research activity, we are proud of the TTF research excellence and long-standing experience in the field of textile, which resulted in its experts involved in the ETP working groups for dealing with major topics in drafting of the European Research Strategy till 2020. This edition issue presents the papers belonging to the three FP7 projects recently realized at TTF.

The first TTF project funded by the European Commission was FP7-SME-2007-217809: *Sustainable Measures for Industrial Laundry Expansion Strategies (SMILES): SMART Laundry-2015*. In the frame of this project the Croatian partner, Professor Tanja Pušić and co-authors present a part of systematic investigations of detergent components and their impact on the environment by analysing the laundering performance of detergent containing environmentally favourable peracetic acid (PAA) in variation of pH and finishing parameters.

The second FP7 project was coordinated by TTF and funded within the call FP7-REGPOT-2008-1, with grant 2298011, entitled: *Unlocking the Croatian Textile Research Potentials (T-Pot)*. In the present paper this project coordinator, Professor Sandra Bischof presents the review of the project activities such as purchase of top class equipment, training of researchers and industrial representatives and know-how transfer from the experts from the EU partnering institutions. One of the project results was upgrading of Textile Science Research Centre (TSRC) potential and participation of Croatian SMEs and crafts as valuable entities in the research activities of the European Research Area.

For the third project TTF was a project partner, too. It was funded through the project NMP-FP7-2010-3.4-1-263159-2015 entitled: *One-shot Manufacturing on large scale of 3D up graded panels and stiffeners for lightweight thermoplastic textile composite structures (MAPICC 3D)*. The Croatian project partner Professor Ana Marija Grancarić and co-authors present here the high performance textile reinforced composites and textile sensors. These sensors are developed from E-glass/polypropylene (GF/PP) commingled yarn and implemented during the weaving of 2D structures at the ARM loom due to checking the thermo-forming consolidation behaviour as important factor for several future applications. Co-author of presented paper is MAPICC 3D Research Coordinator, Professor Vladan Končar from ENSAIT (Roubaix, France).

Wishing you a pleasant reading!
Sincerely

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PERACETIC ACID EFFECTIVENESS IN LAUNDERING OF COTTON FABRICS

Abstract

Selection of proper chemicals in laundering should meet numerous requirements, e.g. efficient removal of various soils at low temperature and short time with minimal water consumption. Environmental considerations have a considerable influence in contemporary detergent formulations. Systematic investigations of detergent components and their impact on the environment have shown

that some of them, in despite of their beneficial activity in laundering, are characterised by poor biodegradation, and present a considerable load on waste waters, either directly or through their interactions with other waste products in water. The aim of the study was to analyse laundering performance of detergent containing environmentally favourable peracetic acid (PAA) in variation of pH and finishing.

Keywords: cotton, laundering, detergent, peracetic acid