



Sveučilište u Zagrebu / University of Zagreb
Tekstilno-tehnološki fakultet
Faculty of Textile Technology



Textile Science Research Centre (TSRC)
University of Zagreb, Faculty of Textile Technology



presents research potentials through a topic

**Textiles – an essential life companion and
powerful protector**

EVENT

Location: Technical museum, small hall, Savska cesta 18, Zagreb

Date: September, 16th 2014

Time: according to the event schedule

Organizer: University of Zagreb, Faculty of Textile Technology

TSRC head: Tanja Pušić

Textile Science Research Centre, TSRC, which exists since 2008 at the University of Zagreb, Faculty of Textile Technology, on this occasion presents research potentials and promotes the textile science through the topic *Textiles - essential life companion and powerful protector*. Topic will be presented through morning lectures according to the attached programme and TSRC promenade in the afternoon session when participants will be introduced to the research capacities of TSRC equipment located in Savska 16/9. In the framework of the promenade will be organized workshop, dedicated to connection between a tradition and contemporary textile science.

PROGRAMME

9,00-12,45	Lectures
9,00-9,15	Harmonisation of Development Strategy of University of Zagreb Faculty of Textile Technology (TTF) with European Research Area (ERA)
9,15-9,30	Advanced textile materials by targeted surface modification - ADVANCETEX, project funded under the Croatian Science Fundation
9,30-9,45	Harry Potter – Science Fiction in the Closet
9,45-10,00	SEM – <i>big brother</i> in the science
10,00-10,15	Physic and Textile – Magic Shades of Colour
10,15-10,30	The power of fluorescence in aesthetics and protection
10,30-10,45	Textiles as a powerful protector
10,45-11,00	Protective clothing in accident situations
11,00-11,15	The Wisdom of the Thermal Mannequin Wearing a Intelligent Clothing
	<i>Break with refreshment</i>
11,45-12,00	<i>Wellness</i> – reality and prediction
12,00-12,15	Sustainable raw materials <i>made in Croatia</i>
12,15-12,30	Natural dyestuffs
12,30-12,45	Natural washing agents
12,45-14,00	Discussion with refreshment
14,00-16,00	TSRC promenade, Savska 16/building 9

Read more.....

9,00-12,45	LECTURES	
9,00-9,15	<p>Harmonisation of Development Strategy of University of Zagreb Faculty of Textile Technology (TTF) with European Research Area (ERA)</p> <p>TTF is the leading science-research institution in the area of textile technology with a 50 year long tradition, during which many science-research and technological projects were realised, resulting in numerous advancements in the area of materials and technological processes. TTF is the main component of the Zagreb University concerning the number of patents. TSRC has interdisciplinary network of partnering institutions in Croatia and abroad and his activities are harmonised with development strategy of European Research Area.</p>	Sandra Bischof

9,15-9,30	<p>Advanced textile materials by targeted surface modification - ADVANCETEX, project funded under the Croatian Science Foundation</p> <p>Development of advanced materials requires interdisciplinary approach to research, which is especially highlighted in the development of textile materials and clothing, requiring knowledge about fibres, advanced process technologies (including biotechnology and nanotechnology) and knowledge about requirements posed on specific textile purposes (technical, medical and/or protective). Additional specific demands imposed on textiles, such as multifunctionality, high efficiency, comfortableness, biodegradability, compatibility of sensory, actuator and intelligent function requires collaboration of scientists from different areas of science and art in research and development of new materials. The development of materials has been acknowledged as one of the most important generators of the economic development since it is found in almost every industrial sector.</p>	Sandra Bischof
9,30-9,45	<p>Harry Potter – Science Fiction in the Closet</p> <p>On the entrance of the 21st century word textiles mean a new paradigm. New materials and modern technology have enabled the traditional textile assumes a characteristic of smart and / or intelligent, and thus bring, something that was science fiction before into our closet.</p>	Edita Vujasinović Marijana Pavunc
9,45-10,00	<p>SEM - big brother in the science</p> <p>Scanning electron microscopy (SEM) is one of the most common methods in the material surface characterization. Beside the investigation of material morfological characteristics, precisely determination of its chemical composition nearby its surface is also possible. SEM technique is often used as effective tool in the scientific research inside the field of textile technology for monitoring uniformity of the treatment on the material surface and penetration of the same inside the structure. SEM is also used for testing of material surface defects after the various preceding test methods such as: flammability test, washing resistance test, etc.</p>	Zorana Kovačević Sandra Bischof
10,00-10,15	<p>Physic and Textile – Magic Shades of Colour</p> <p>In this lecture, the specificity of interaction of textile surface and lightness will be pointed out. This specific interaction causes the sense of colour of an observer. The appearance of colour, respectively the visual experience of colour parameters – lightness, chroma and hue, will depend on amount and direction of reflection, absorption and scattering, which are happening simultaneously in a moment when incident light is coming to a certain surface, and amount, direction and relationship of those phenomena will depend exactly on a textile surface structure. In this lecture will be showed how those phenomena can be objectively evaluated by means of instrumental measurement and objective, numerical colour evaluation, and how certain changes of colour characteristics that are happening due to a textile surface structure changes, can be predicted. Such evaluation and analyses are carrying out in a scope of research – scientific activities in TSRC Laboratory for colour measurement.</p>	Martinia Ira Glogar Đurđica Parac-Osterman

10,15-10,30	<p>The power of fluorescence in aesthetics and protection</p> <p>White is used as a symbol of purity and chastity, symbolizes many phenomena that makes our world better. Today it is impossible to imagine the thousands of different white products which arise from the whiteness based on physic-chemical phenomenon - fluorescence. Optical brighteners are colorless or weakly colored fluorescent compounds that have the ability to absorb UV-A radiation and emit it in the blue end of the spectrum. By its application it is relatively easy to achieve high whiteness of the material, and the excellent protection against UV radiation. Additionally, fluorescent reflective strips and phosphorescent materials are used in protective clothing - for vests, pants, coats and jackets with sleeves, overalls, etc.</p>	<p>Anita Tarbuk</p> <p>Ana Marija Grancarić</p>
10,30-10,45	<p>Textiles as a powerful protector</p> <p>Impact of progress in the technology greatly reflected on the textile finishing processes as well as research possibilities to obtain textile materials which have multifunctional properties. Such materials have found application in the protection of life and in different sectors of human activities. Currently are produced textiles which have excellent properties beyond the standard technical and aesthetic characteristics of modern products. This presentation brings the research which can be used to obtain textile materials with multifunctional protective properties.</p>	<p>Sandra Flinčec Grgac</p> <p>Drago Katović</p> <p>Andrea Katović</p>
10,45-11,00	<p>Protective clothing in accident situations</p> <p>Users of protective clothing in accident situations (rescuers and firefighters) are often exposed to high temperatures and toxic chemicals as well as gases that are being developed by burning. With the increased threat of terrorism, rescuers and firefighters can be exposed to chemical, biological, radiological and nuclear agents. In these accident situations they have to operate safely using appropriate protective clothing, footwear and equipment. In the presentation clothing systems for protection users exposed to high temperature, chemical, biological, radiological and nuclear agents will be shown.</p>	<p>Anica Hursa Šajatović</p> <p>Zvonko Dragčević</p>
11,00-11,15	<p>The Wisdom of the Thermal Mannequin Wearing a Intelligent Clothing</p> <p>In the lecture will be presented intelligent clothing for thermal protection developed in Croatia. How and how many intelligent clothing protects us from coldness we will find out, thanks to the wisdom and the measurement capability of the thermal manikin.</p>	<p>Dubravko Rogale</p> <p>Snježana Firšt Rogale</p>
11,15-11,45	<p><i>Break with refreshment</i></p>	
11,45-12,00	<p>Wellness – Reality and prediction</p> <p>Textile science has found interest, the challenge and the opportunity to explore the concept of wellness through the use of numerous substances in the production and finishing of textile materials. Through lecture will be presented a research of materials treated with microcapsules before and after washing.</p>	<p>Tanja Pušić</p> <p>Ivo Soljačić</p>

12,00-12,15	<p>Sustainable raw materials <i>made in Croatia</i> With the aim to support a more intensive use of relatively quickly renewable raw materials for the use in various industries and with a common state of a higher responsibility toward the environment and the need to protect nature, flax, hemp, broom and wool are becoming important in the economic development again today. The mentioned raw materials can be named as strategically textile raw in Croatia, and the renewal of their production could result in a change in the textile industry (clothing and/or technical textile) or other industries (food or medicine).</p>	Ružica Brunšek Maja Andrassy Jasminka Butorac
12,15-12,30	<p>Natural dyestuffs Awareness of the importance of ecology and conservation of heritage in the textile sector is certainly related with the use of natural dyes. However, regardless of the tradition wealth, the beauty of colour hues, positive effect on health, natural textile dyestuffs are still "fight" for its position. Many technologists and researchers concerned with the problems and prospects of industrial application of natural dyes and thereby faced with numerous problems from the viewpoint of modern technology: the unavailability of raw materials, limiting the colour hues, exhaustion of dyestuffs, the complexity of the procedure, the reproducibility of tones, the problem of choosing fiber, etc. Natural dyestuffs are not a substitute for synthetic, they have their own market, whose development is based on tradition, creativity, fashion, tourism, and has no effect on the synthetic dyestuffs. It is important to emphasize that today natural dyestuffs obtained from waste or renewable sources and represent a major touristic-economically and human-ecological contribution in the field of textiles.</p>	Ana Sutlović Đurđica Parac-Osterman
12,30-12,45	<p>Natural washing agents Is it real that the fruits of the <i>Sapindus mukorossi</i> trees which abound by saponins can be widely used detergents? What is a profile of a „green chemistry“ ideal natural agent in application? How is with a scientist interest? Is there enough space for interdisciplinary research?</p>	Tihana Dekanić Tanja Pušić Ivo Soljačić
12,45-14,00	<p>Discussion and refreshment</p>	
14,00-16,00	<p>TSRC promenade, Savska 16/building 9 Presentation of equipment and workshops.</p>	