

up-cycle

Upgrading Recycled Tyre Materials.
Products and Applications



Innovation Workshop for Projects , Research and Co-operation Development
26th January 2018 - from 9.00 am to 5.00 pm
Venue : Environment Park, Via Livorno 60 (Parking 58), Turin

ETRA, the European Tyre Recycling Association, in co-operation with **Politecnico of Turin, Environment Park, CLEVER Proplast, CGreen, CEI Piemonte , ANTEL** and **ARGO**, are pleased to welcome you to:

up- cycle - Upgrading Recycled Tyre Materials, Products and Applications

The workshop is designed to illustrate the many current and potential uses of Recycled Tyre Materials (RTMs) in various fields of application, highlighting the flexibility of use and high performance of the materials. We hope to stimulate discussions on new product development, research projects and cooperation. Topics will include: thermal, vibration and noise insulation, flexible and reinforced concrete, rubber compounds and thermo-plastic elastomeric materials, automotive and rail products, sports applications.

The programme will bring together companies from tyre recycling and end-user sectors with researchers from Universities and experts from various fields.

In Cooperation with:



**POLITECNICO
DI TORINO**



Program

- 8.30 Registration
- 9.00 **Welcome Speech**
Dr. Davide Damosso, Operational Director Environment Park, Managing Authority of Clever Cluster
- 9.10 **Workshop - Part 1**
- **Dr. Valerie Shulman**, Secretary General, ETRA, : About Tyre recycling
 - **Dr. Roberta Bongiovanni**, Politecnico of Turin: Key role of surface modification for recycling rubber
 - **Ir. Alessandro P. Fantilli**, Politecnico of Turin : The Sustainability of Structural Concrete Containing Recycled Tyre Materials
 - **Dr John McDougall**, Edinburgh Napier University, Rubber-soil mixtures for the mitigation of earthquake building damage
 - **Geom. Bruno Marabotto**, Vice President, ETRA: Sports applications
- 11.00 Coffee Break
- 11.20 **Workshop - Part 2**
- **Ir. Fabrizio Quadrini**, University Tor Vergata, Rome, Recycled rubber moulding
 - **Ir. Marco Monti**, Proplast : Advanced solutions for recycling and valorization of tyre rubber powder in PP compounds
 - **Ir. Ake Paulsson**, Eco Rub : recycled rubber TPE products for automotive
- Workshop - Part 3**
- **Arch. Rossella Poli** : Insulating panels from recycled textile, The project Insuleco
 - **Dr. Beatrice Lerma**, Politecnico of Turin: MATto_MATERIALS FOR DESIGN. Tailored to suit your project”
 - **Dr. Silvia Cesarini, PhD.** Deloitte: . “European and National funding opportunities for innovation projects development”
- 13.20 Closure of the Workshop
- 13.30 Light Lunch
- 14.30 **Discussion Groups**
- Roundtables discussion divided by groups to discuss more in detail about the morning presentations, get comments and suggestions. **The goal is to come up with new partnerships and projects for the upcoming EU Funding Calls for 2018-2020.** Four tables has been organised and come up with some ideas for product development, new projects, cooperation, etc. the **4 table** will be on:
1. **Recycled and ecological building materials and applications, projects and other ways to expand the market**
 2. **Smart mobility and New materials: rubber and plastic for automotive sector**
 3. **Improving the use of recycled rubber : Compounds, Devulcanisation, direct moulding, etc.**
 4. **Sport Sector: New materials for / from Artificial Turfs, how to recycle end of life turfs and new generation of infill materials**
- In order to increase their opportunities Participants may enter their cooperation profile into the ETRA Partner Registry, and to receive further assistance after the workshop as well. They will become part of a dynamic process that includes other opportunities.**
- 17.00 Closure of the meeting

Speakers

Valerie L. Shulman, Ph.D., served as Secretary General of ETRA for more than twenty years. She began to study tyre recycling in the EU in 1989 and developed the Tyre Recycling Project in 1992 which, after initial EU funding, became the nucleus of ETRA. A contributor to the preparation and presentation of the Basel Convention Guidelines on used tyres, she participated in the EU Recycling Forum representing Tyre Recycling. In 2006 she presented at the Waste Policy hearings in Parliament and again in 2008 on the needs of recyclers in a recycling society. She represents European tyre recycling at EU and international conferences. She has published more than 100 articles in EU and international journals, and written or edited more than ten books on the subject. She has been a delegate in both UNEP and UNOPS on-site missions.

Roberta Bongiovanni, after a degree in Chemistry at the University of Turin (Italy), received a M.Sc. in Colloid and Interface Science at the University of Bristol (U.K.) where later she obtained a Ph.D. in Physical Chemistry. After working for several years at ENI Central Laboratories in Milan, she joined the Politecnico di Torino where she is now Full Professor of Chemistry. Her work concerns polymeric materials and composites, with a special interest for the surface modification of polymers. She is coauthor of 152 papers on international journals, several book chapters and three international patents.

Alessandro P. Fantilli is Associate Professor in the Department of Structural, Building and

Geotechnical Engineering of Politecnico di Torino, Italy. He received his MS and PhD from Politecnico di Torino. He is a member of ACI committee 544 - Fiber-reinforced concrete - and 555 - Concrete with Recycled Materials. His research interests include nonlinear analysis of reinforced concrete structures and structural application of high performance fiber-reinforced cementitious concrete.

John McDougall, gained an MSc in Geotechnical Engineering from University of Bolton in 1993 and his PhD on the modelling of landfill hydraulics from University of Manchester in 1996. He joined the School of the Built Environment at Napier University in 1996, where he is now School Director of Research.

Dr McDougall has research interests in unsaturated soils, decomposing soils and the engineering analysis and modelling of landfill behaviour. International recognition has been gained for innovative work on the hydro-bio-mechanical modelling of landfill behaviour. More recently he has been working on the dynamics of rubber soil mixtures.

He has served on the editorial panel of *Géotechnique* and been external examiner of over 12 PhDs. He was organiser of the 5th International Workshop on Hydro-Physico-Mechanics of Landfills, held at Edinburgh Napier University in April 2013 and Chair of the International Waste Working Group for Landfill Modelling, from 2011-13.

Dr McDougall has led commercial projects into resilience of mountain bike trails (Scotland) and been advisor on settlement due to landfill fires (England); prediction of landfill settlement (Canada). He is currently supervising two postgraduate students working on offshore foundations and the dynamic properties of rubber soil mixtures.

Geom. Bruno Marabotto has worked since 1982 in the Sports Plant branch of the Turino Town Council. Today, he is responsible for the design and construction of sports fields. From 2001 to 2003 he took care of the maintenance of city stadium (delle alpi). In 2002 he developed a plan to transform 30 clay sports surfaces with artificial turf. He recently transformed the Winter Olympic Stadium into a football stadium for the two local clubs: Turin and Juventus. The municipality has been Awarded as the European Capital of Sports for 2015. He initiated a municipality-wide programme to revise and renew older sports fields to meet update requirements and standards.

Dr. Fabrizio Quadrini graduated with honours in Material Engineering at the University of Naples 'Federico II'. Since 2002, he is a Researcher at the University of Rome 'Tor Vergata', where he teaches Manufacturing Systems Technology. The research group is focused on the innovation of products and manufacturing processes, and 53 scientific articles were published in the period 2004-2007. Among the most recent contributions, there are studies about coatings, thermoplastics, foams, nanocomposites, recycling technologies, and measurement techniques. He has collaborated with several industrial partners to design and optimise new processes and products. He is the author of about 100 papers accepted in international journals and conferences. He acts as referee for some International journals and has participated in scientific committees of International conferences.

Marco Monti, obtained his degree in Materials Engineering in 2005 and his PhD in Materials Nanotechnology in 2009 at University of Perugia, where he kept working as a postdoc researcher until 2011. Since 2011, he has been working in Proplast as a project manager of applied research projects. His research interests include thermoplastic and thermosetting polymers, nanocomposites, fiber reinforced composites, biopolymers and biocomposites, plastic recycling and circular economy solutions. During his scientific career, he was visiting scientist at Polytechnic Institute of NYU (New York, 2006) and at Tecnalia research centre (San Sebastian – Spain, 2007). He is co-author of 27 scientific papers in peer reviewed journals, 1 chapter of the Wiley Encyclopedia of Composites, and several articles in technical magazines.

Åke Paulsson is the inventor of EcoRubs technology to make a thermo plastic hybrid material from rubber powder polyolefin plastics and copolymers. Ecorub was granted funds from the EU Eco-innovation programme. The company has a readiness level of 9. 2010 the company was listed at a small business stock exchange in Sweden called Aktietorget in order to raise finances and about 2 Million € was gathered. With that stock in the company Venture Capitalists took seats on the company board and pushed out the inventor. By the spring of 2016 the Venture Capitalists had spent all the money and achieved nothing due to lack of Know How and bad management. In June 2016 the company was ready for bankruptcy and the inventor together with some disappointed larger stockholders took over the board of the company. Now all the debts are cleared and the company is reorganized on a small scale.

Arch. Rossella Poli, is an expert in thermal and acoustic insulation materials and sustainable building design. She has worked for many years in the building / construction sector. She recently joined ISOL-ECO, an SME specialised in new eco-innovative building products for civil, industrial, public infrastructure and urban purposes. Located in Calero (Reggio Emilia, IT), it uses various size recycled tyre materials to manufacture sound and energy insulation products and applications. The products offer considerable advantages through energy savings and sound abatement. The company is specialised in the use of environmentally friendly and recycled materials. Its presence in the INSUL-ECO project is particularly relevant as they have developed and tested the insulating panels made with recycled textile fibres.

Dr. Beatrice Lerma, is PhD researcher in Design at the Politecnico di Torino's Department of Architecture and Design, a lecturer of the Design and Visual Communication degree course, Beatrice Lerma has been contributing to the management and development of the scientific content of the MATto materials library and MATto_Materials for design, a service supporting local SMEs, since 2010. Innovative materials and processes, their sensory and sustainable aspects and their perceived quality are her main fields of research.

Dr. Silvia Cesarini, PhD. Senior R&D and Innovation Engineer, STS - Deloitte.

Extensive experience in R&D and innovation, she gained a Msc in Industrial Biotechnologies in 2007, at University of La Sapienza (Rome) and a PhD in Industrial Biotechnologies in 2013, at University of Barcelona (ES). She spent over 7 years in leading research institutions including ENEA (IT), University of Barcelona (ES), Novozymes A/S (DK). Her scientific expertise covers biotechnology, bioenergy, bio- and chemical processes industrialization.

She is member of the Global Investment and Innovation Incentives Gi3 team of Deloitte as expert in the elaboration and management of European R&D proposals on behalf of international organisations and research centers. Her main activities are management of large R&D International projects; definition of innovation strategies; European, National and Regional Grants: from feasibility study to submission to compliance; assistance with new R&D investments: definition of eligible R&D activities and structuring of new products, processes and services in compliance with Italian tax regulations.

This workshop is part of a programme with various Universities around Europe, coordinated by ETRA that will continue throughout 2018 in the frame of ETRA 25th Anniversary. The program will cover all the main issues related to tyre recycling, and will analyse the state of the art, the problems, the technology and market potential.

25th ETRA Annual Conference

25 Years of Tyre Recycling Progress: Focus on the Future

The next appointment will be on **14-16 March 2018**, in **Brussels** at the **ETRA Conference**.

2018 will be the 25th anniversary of the European Tyre Recycling Conference. This auspicious event will take place from Wednesday through to Friday 14 - 16 March 2018 at the NH Collection Hotel, Grand Sablon, Brussels.

This 25th event will be entitled: 25 years of Tyre Recycling Progress : Focusing on the Future

There will be a series of ETRA led activities to celebrate the 25th anniversary running from September 2017 through to September 2018.



There will be, among the other:

- A one day NCP workshop, for a limited group of 15-20 attendees to define the key elements for 1-2 projects
- Two days Conference
- Company matchmaking Discussion Groups
- Networking moments (Cocktails and coffee breaks., Gala Dinner, Lunches)



See you in Brussels !