

World Tribology Congress 2013 (WTC V)

Torino, Italy

8th – 13th September 2013

Summary

The Fifth World Tribology Congress took place in Torino, Italy, between the 8th and 13th September 2013. It was organised by the Italian Tribology Association (AIT) in cooperation with the Politecnico of Torino and the University of Pisa.

It was held at Palaolimpico Isozaki, the largest indoor stadium in Italy built for the Winter Olympics in 2006.



Congress venue: Palaolimpico Isozaki, Torino

The Congress was held under the High Patronage of the President of the Italian Republic and was also supported by Regione Piemonte, Provincia di Torino, Città di Torino and several technical Associations.

WTC 2013 explored every aspect of fundamental and applied Tribology research providing a unique opportunity of discussion concerning recent progress in different aspects of Tribology and strength the linkage between academy and industry. The range of topics discussed included advanced materials, corrosion, energy applications, and lubricants with particular attention to the environmental impact. The Congress highlighted how Tribology fundamentals and applied studies can supply an essential support to obtain significant savings in materials and energy consumption and minimize the environmental impact.

Despite the critical political and economical situation around the world, the Congress obtained finally a successful participation. About 1350 registered participants from more than 70 countries attended WTC 2013. The most represented countries were Japan with about 190 people, China 170, Italy 150, Germany 100, France 90, UK 70 and USA 50.

About 1050 works were accepted, 850 for oral and 200 for poster presentation with a total of about 2800 authors. A Plenary Lecture and 5 Plenary Talks were planned the first day of the Congress and some Keynote Speeches were included in the sessions. A technical Exhibition with 21 exhibitors and some

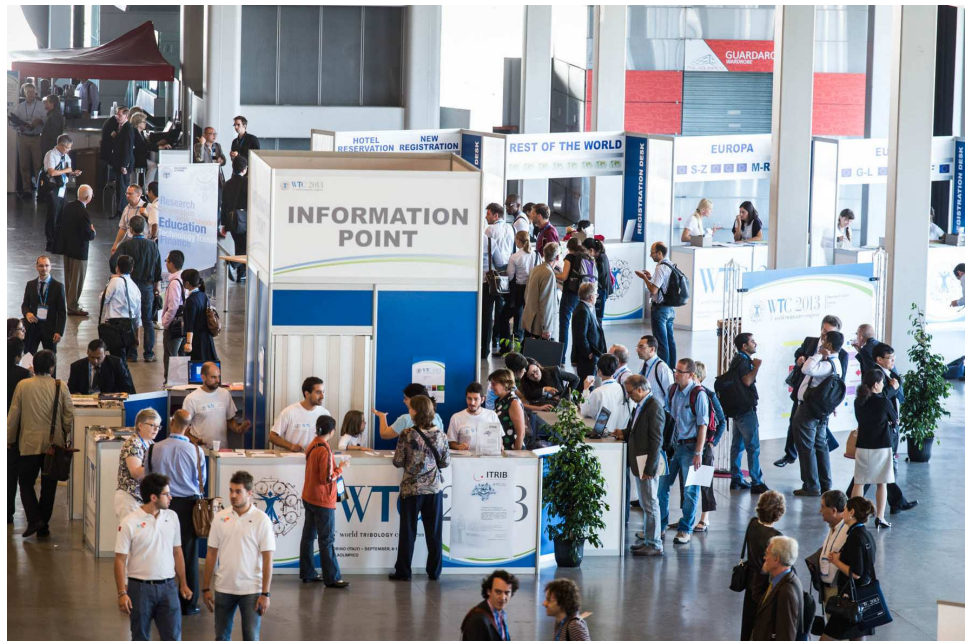
technical tours complete the Congress program. The sponsors for the Congress included about thirty companies and organisations.

Some joint Events were held as a part of WTC 2013: ECOTRIB 2013 Tribology of Machine Elements, VIENNANO '13 Nanotechnology, STLE/ASME Lubrication Fundamentals, and AddNano Workshop, as well as some special sessions of LUBMAT. Another joint Event was organized the week before the WTC: Tribo-Lyon 2013, combining the 40th Leeds-Lyon Symposium on Tribology and Tribochemistry Forum 2013.

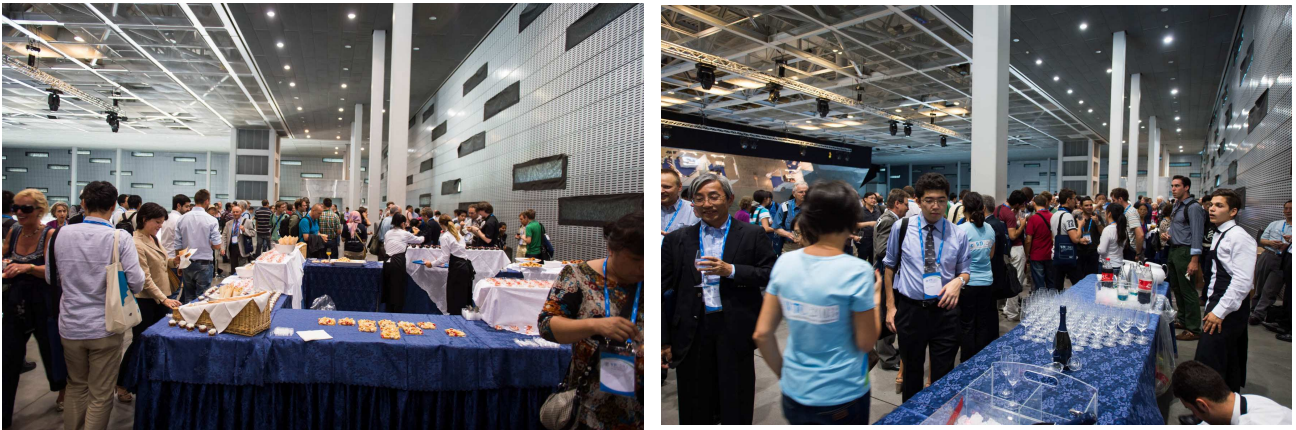
The hard work of the members of the Organizing and Program Committees in a real strong international cooperation made possible the success of the Congress. 39 Cooperating Tribology Societies around the World gave their support to WTC 2013.

Opening and invited

Registration started on Sunday afternoon, 8th September and was followed by a Welcome cocktail. Many participants attended and enjoyed the event which offered the chance to meet with friends from all over the world.



People during the opening day. Left picture, from the left: Prof. Sherrington (ITC Secretary), Prof. Ciulli (AIT President), Prof. Jost (ITC President), Prof. Raparelli (WTC 2013 Organizing Committee Chair).



Welcome cocktail on Sunday 8th afternoon.

The day's activities concluded with the Meeting of the International Tribology Council.



International Tribology Council meeting.

On Monday, the Congress started with silent prayer as a tribute to those Tribologists who had passed away since the last WTC.

This was followed by the Opening Addresses of Prof. Terenziano Raparelli, Organizing Committee Chair, Prof. Enrico Ciulli, President of the Italian Tribology Association and Program Committee Chair, Prof. H. Peter Jost, President of the International Tribology Council, Prof. Roberto Bassani, Honorary President of the Italian Tribology Association, Prof. Marco Gilli, Rector of Politecnico di Torino, Ing. Aurelio Nervo, Managing Director SKF Industrie S.p.A., Ing. Aldo Marangoni, Head of EMEA Region Powertrain Engineering, FIAT-Chrysler Group and Mr. Alan Begg, Senior Vice President SKF Group Technology Development.



Opening Addresses. From the left: Eng. Aldo Marangoni, Prof. Marco Gilli, Prof. H. Peter Jost, Prof. Terenziano Raparelli, Prof. Enrico Ciulli, Prof. Roberto Bassani, Ing. Aurelio Nervo, Mr. Alan Begg.



The plenary lecture, entitled "The Big-Bang in the Lab", was given by Dr. Paolo Giubellino, ALICE Experiment Spokesperson, CERN & INFN. After that, five plenary talks were given by distinguished researchers. In the morning, Prof. Efstathios Ioannides, Imperial College, London, United Kingdom, presented "Rolling Bearing Tribology: Successful Past – Bright Future" and Prof. Jianbin Luo, State Key Laboratory of Tribology, Tsinghua University, Beijing, China, gave the talk entitled "Tribology in Nanomanufacturing — The Interaction between Nanoparticles and Polished Surface during the Manufacture of Near Perfect Smooth (NPS) Surface". In the afternoon, Prof. Bharat Bhushan, Ohio State University, Columbus, OH, United States, presented "Biomimetics: Bioinspired Superhydrophobic, Self-Cleaning/Antifouling and Low Drag Surfaces for Green Tribology", Prof. Klaus Friedrich, Institute for Composite Materials, Technical University of Kaiserslautern, Germany, "Nanoparticles and Transfer Film Layer Related to Sliding Wear of Polymer Nanocomposites against Steel" and Prof. W. Gregory Sawyer, University of Florida, Gainesville, FL, United States, "Space Tribology: Experiments in Low Earth Orbit". Several Tribology Gold Medallists were present at the Congress opening.



People attending the plenary session.



Tribology Gold Medallists at WTC 2013. From the left: Prof. Talke, Prof. Ioannides, Prof. Spikes, Prof. Bassani, Prof. Frene, Prof. Jost (ITC President), Prof. Goryaceva, Prof. Bartz, Prof. Xue.

Technical programme

From Monday afternoon to Friday morning, the Congress continued with parallel sessions in ten rooms for oral presentations. Poster presentations were organised in the Atrium from Tuesday to Thursday.

The main topics of the Congress were organised into 14 Tracks:

- Ecotribology
- Biotribology
- Biomimetics
- Surface Tribology
- Dry Friction and Wear
- Lubricants and Additives
- STLE/ASME - Lubrication Fundamentals
- VIENNANO '13 - NanoTechnology
- Bearings
- ECOTRIB 2013 - Tribology of Machine Elements
- Tribology in Manufacturing
- Tribology of Materials
- Joint Mechanics
- Novel Aspects in Tribology

Each track included several topics and was managed by two Track Organizers with some Co-Organizers.

850 oral presentations were presented in 150 oral sessions and about 200 posters were shown in 3 poster sessions. 15 Keynote Speeches were included in the sessions.



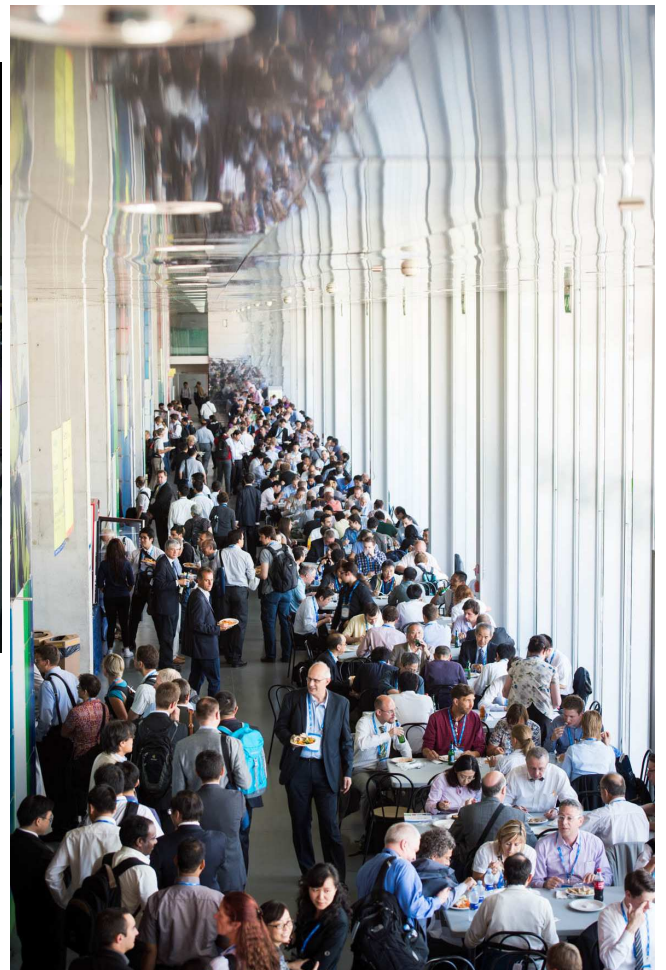
Technical sessions.



Outside the session rooms.



ECOTRIB Committee lunch meeting. From the left, clockwise: Prof. Franek, Dr. Pauschitz, Prof. Vizintin, Dr. Crockett, Prof. Spencer, Prof. Kalin, Prof. Bassani, Prof. Raparelli, Prof. Piccigallo.



Lunch at the Congress.

Technical Exhibition and Tours

The technical exhibition was located in the Atrium, a wide area at the entrance of the Congress venue easily accessible by all delegates at any time. More than 20 exhibitors displayed their products and equipments.



Congress Atrium with Technical Exhibition.

Technical tours were organised in the afternoon of Thursday September 12th.

The site of Petronas Lubricants International SDN in Villastellone (Torino) was visited. The visit included the main PLI R&D Centre (Laboratories & Mechanical Testing Department) and a tour of the plant.

Some participants had the opportunity to visit the industrial site in Rivalta di Torino of Avio Aero, an international leading group in the aerospace industry, with its headquarters in Torino.

SKF organised the visits of the Super Precision Bearing Factory in Villar Perosa, of its Solution Factory in Moncalieri, and of the Airasca factory near Turin, the SKF largest Italian factory.



WTC 2013 participants at Avio Aero plant in Rivalta di Torino.

Other activities

The professional activities of the Congress were accompanied by the chance to experience Italian culture and history. The city of Torino, former Italian Capital, offered many cultural opportunities with several museums.

The Congress dinner was held inside the Conference venue. It was the occasion for presentation of the ASME awards.



During the speeches before dinner.
From the left: Prof. Sherrington, Prof. Piccigallo, Prof. Ciulli, Prof. Raparelli.



WTC 2013 Gala Dinner



The dinner was gladdened by the music of the “Joueurs de Flute” Orchestra, one of the most universally acknowledged and well recognized flute groups in Italy. The atmosphere was shrouded by the sound of very particular flutes (Piccolo, Contrabass Flute, ...) with music ranging from most known classic authors (Mozart, Hendel, Rimsky-Korsakov, Donizetti, ...), to modern ones (Guiot, Proust, Sorrentino, Spriano, ...).



WTC 2013 “Joueurs de Flute” concert during the Gala Dinner

