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Introduction to the 43rd Leeds-Lyon Symposium on Tribology 2016 special issue

“Tribology (The Jost Report – 50 years on)”

The 43rd Leeds-Lyon Symposium on Tribology in 2016, titled “Tribology (The Jost Report) – 50 years on”, organised by the University of Leeds was held in Leeds from Tuesday 6 September until Friday 9 September 2016.

In 1966, the UK government published a report titled Lubrication (Tribology) or, as it is more widely known, the Jost Report. The Jost report was the first of many other international reports to follow which quantified the impact of friction, wear and lubrication on the economy and society in general. Its recommendations provided the case for support for research, training and education in the multidisciplinary field of tribology. Since the delivery of the Jost report in 1966, the field of tribology has constantly been evolving. What has remained constant has been the importance of underpinning engineering sciences, across various disciplines, to be able to understand, model and predict complex aspects of friction and wear at interfaces. In September 2016, 50 years on from the Jost report, the 43rd Leeds-Lyon Symposium on Tribology assembled 209 scientists and engineers from 22 countries to provide the forum for sharing and discussing the latest scientific achievements of huge importance to the economies around the world.

Sadly, 2016 will also be remembered for the death of Professor HP Jost who was the main driver behind the Jost Report. Professor Jost will be remembered for his enormous contribution to the field of Tribology.

The Symposium started with three thought-provoking Keynote papers and an interactive panel discussion. The keynote papers covered a wide range of challenges and opportunities on adaptive solid and fluid lubrication and molecular scale lubrication processes in living systems, providing a reference point for the rest of the symposium contributions. The panel, comprised of the keynote speakers and Prof Duncan Dowson who is also one of the authors of the Jost Report. It discussed the development of Tribology field since the report was published, highlighting the current and future challenges around the science of tribology, training and education as well as the challenges related to transferring tribology knowledge into high-impact applications.

Keynote Papers

Professor Andrey Voevodin, Chair of Material Science and Engineering, University of North Texas, USA, “Adaptive solid lubrication: new opportunities with nanoscale engineered materials”

Professor Jacob Klein, Herman Mark Professor of Polymer Physics, Weizmann Institute of Science, Israel, “Lubrication in living systems: the molecular domain”

Dr Pascal Ehret, Director of Research and Development, SKF, Netherlands, “Tribology in rolling bearing applications”

The discussion then continued in a more informal environment during the symposium dinner at the University of Leeds Refectory which, over the years, hosted famous rock groups such as The Who, the Rolling Stones, Elton John and Bob Marley. In the same entertaining spirit, our after dinner speaker, Professor Greg Sawyer gave a highly entertaining yet intellectually stimulating speech taking us all on a time journey to Leonardo Da Vinci’s workshop to explain the friction experiments Da Vinci ran more than 500 years ago.

In addition to keynote papers, there were 3 invited plenary presentations, 116 parallel session podium presentations and 37 poster presentations. The discussions throughout the symposium have been captured in written form and are presented towards the end of this Special Issue.



43rd Leeds-Lyon Symposium on Tribology was attended by 209 delegates from 22 countries. A full list of the delegates is provided at the end of this special issue

With 12 papers submitted for consideration, the competition for the Best Paper Dowson Prize was high. All the submissions were reviewed by an international panel of reviewers drawn from the Symposium delegates, and the Dowson prize was awarded to Ms Agnieszka Dabrowska for her paper titled “A water-responsive, gelatine-based human skin model”. We are thankful to Wiley and Shell for sponsoring the book and the prize to the winner, as well as to the reviewers for their high-quality and comprehensive refereeing reports.



2016 Best Paper Dowson prize: Ms Agnieszka Dabrowska, joined by Professor Duncan Dowson and Dr Ian Taylor from Shell Technology Centre

Sponsored by Afton Chemical (UK), prizes were also given to the best three posters. The 1st Best Poster prize was awarded to Guillaume Vouillat for his poster titled “Analysis of rolling contact fatigue on aeronautic gears”. The 2nd Best Poster prize went to Guillaume Schuhler for his poster titled “Wear mechanisms in axial piston pumps” and the 3rd prize to Pauline Cusseau for her poster titled “An improved model for describing the high-pressure high-shear stress behaviour of engine lubricant”.



Other sponsors that supported the symposium and to whom we are very grateful are Croda, Infineum, Keronite, LGC and the University of Leeds.

The manuscripts had the choice for publication in the Tribology International (Elsevier) or the Journal of Engineering Tribology (Sage, IMechE) special issues and were subject to refereeing in accordance with the normal procedures specified by the publishers of each of the journals. We thank all the authors for supporting the Leeds-Lyon Symposium over the years by submitting their manuscripts according to Journals recommendations and the external referees for providing their high quality thorough reviews in a timely manner. We appreciate the workload that this adds to our esteemed referees and we are very grateful for their continuous support in maintaining the strong reputation of Leeds-Lyon Symposium special issues in the field of Tribology.

The 44th Leeds-Lyon Symposium on Tribology, titled "Tribomotion: Where Performance and Motion Meet Friction" will be held in Lyon from 4th to 6th of September 2017.

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