CV Sergei Glavatskih – KTH Royal Institute of Technology, Sweden

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Visiting Professor, Mechanical Construction and Production, Ghent University, Belgium, from 2010 –

Visiting Professor, Jost Institute for Tribotechnology, University of Central Lancashire, UK, from 2006 –

RÉSUMÉ

Sergei Glavatskih is a Professor of Machine Elements at the Royal Institute of Technology (KTH) since 2011. He was awarded his Ph.D. in Cryogenics in 1994 from the Moscow State Technical University for a thesis entitled “Development and investigation of high frequency resonators for vapour-liquid cryogenic flows.” The resonance sensors developed were patented and used in the refueling system for a passenger aircraft TU-154 operated with LNG.
He was awarded his PhD in Machine Elements in 2000 from the Lulea University of Technology for a thesis entitled ”On the hydrodynamic lubrication of tilting pad thrust bearings”. Environmentally adapted synthetic oils TURBWAY SE and TURBWAY SE LV for rotating machinery were developed based on the research results and together with Statoil Lubricants. These oils are now set as a standard in hydropower industry and gradually replace conventional mineral oils in the Swedish hydropower stations. He is currently involved in the development of the new generation of synthetic lubricants in collaboration with Statoil and Evonik Industries. He established a research consortium on bearing and lubrication technology in 2006. The consortium, with regular meetings (2/year), involves all hydropower companies in Sweden, lubricant and turbomachinery manufacturers.
The overall goal of his research is to provide energy efficient and environmentally friendly solutions for machine components and tribological interfaces. Consequently, he considers a lubricant as a machine element/component that should be designed similarly to other traditional machine elements as gears and bearings. His research also includes tribochemistry to explore novel ways of controlling tribological interfaces. He introduced the concept of tribotronics. The purpose of tribotronics is to control so-called “loss outputs” such as friction, wear, vibration, etc. and through doing so, considerably improve the performance, efficiency and reliability of tribological units and, therefore, of the entire machinery.
He shaped the Swedish Research School in Tribology and was a director of studies from its launch in 2008 until 2011. The school involved 5 Swedish Universities and more than 40 full time PhD students in tribology. He has a broad research profile covering fundamental and applied (industrial) aspects, research and teaching experience from different countries, extensive network in Swedish and international industry and a worldwide network in the academic world.
Total funding obtained since 2006 from the Knut and Alice Wallenberg Foundation, the Swedish Research Council, the Swedish Energy Agency, the Swedish Foundation for Strategic Research, General Motors (USA), Elforsk, EU and industry is approximately 75 MSEK.

Educational Background
M.Sc. in Mechanical Engineering, Honours diploma, 1989, Moscow State Technical University n. a. Bauman
Ph.D. in Cryogenics, 1994, Moscow State Technical University n. a. Bauman
Ph.D. in Machine Elements, 2000, Lulea University of Technology (LUT)
Docent in Machine Elements, 2003, LUT

Positions
Professor of Machine Elements, KTH, from September 2011 –
Visiting Professor, Ghent University, Belgium, from August 2010 –
Professor of Machine Elements, LUT, April 2009 – August 2011
Director of studies, Swedish Research School in Tribology, (more than 40 full time PhD students from 5 participating Swedish Universities), 2008 – 2011
Visiting Professor, Jost Institute for Tribotechnology, University of Central Lancashire, UK, from 2006 –
Associate Professor (Swedish: Universitetslektor), LUT, December 2000 – March 2009
PhD student, LUT, March 1996 - December 2000
Researcher, LUT, April 1995 – February 1996
Researcher, Moscow State Technical University, July 1994 – March 1995
PhD student, Moscow State Technical University, June 1990 – June 1994
Research engineer, Moscow State Technical University, July 1989 – May 1990

Selected Recent Research and Administrative Commissions
Member of the International Advisory Board, 5th World Tribology Congress, Torino, Italy, 2013
Member of the Scientific and Organising Committees, International Conference on Sustainable Construction and Design, Ghent, February 2013.
Session organiser and chair, ASME TurboExpo2012, Copenhagen, June 2012
Guest editor for the special NORDTRIB 2010 issues of Tribology International and Journal of Engineering Tribology, Part J, 2011/2012.
Director of studies, Swedish Research School in Tribology, 2008-2011
Member of the Scientific Committee, International Conference on Tribology NORDTRIB2010, Lulea, Sweden, June 2010
External evaluator for the Research Foundation - Flanders (FWO) 2010
External evaluator for the Hungarian Scientific Research Fund OTKA 2011
Member of the International Committee, International Conference on Lubrication, Maintenance and Tribotechnology LUBMAT, Bilbao, Spain, June 2012
Peer reviewer of scientific journals (Tribology International, Journal of Engineering Tribology, Journal of Tribology, Journal of Synthetic Lubrication, Wear, Journal of Mechanical Engineering Science, Physical Chemistry Chemical Physics, etc.), ~12/year
Member of the PhD examination boards at Ghent University, Technical University of Denmark

Conferences, Seminars, Publications etc.
More than 45 international conferences; about 50 scientific contributions; 3 invited lectures; more than 20 invited lectures at universities and companies
About 40 publications in refereed journals and approximately 60 miscellaneous publications including 1 patent application and 4 granted patents.
Kunskapskanalen, Swedish TV channel: participation in a film on advances in tribology research

Awards

Vattenfall energy award for valuable research in the field of energy production, 1997.
CF (civilingenjörsförbundet) award for research in the field of environment protection, 2002.
Funding for a research visit to Daido Metal Co., Nagoya, Japan, February-March, 2006

Selected and recent publications

1. F. U. Shah, S. Glavatskih, P. M. Dean, D. R. MacFarlane, M. Forsyth and O. N. Antzutkin. Halogen-free chelated orthoborate ionic liquids and organic ionic plastic crystals. J. Mater. Chem. (2012), 22, 6928-6938. IF5.968
2. S. Glavatskih, Tribotronics – monitoring based active friction control, in Encyclopedia of Tribology, Springer Verlag (2012), in press.
3. E.Kuznetsov, S.Glavatskih and M.Fillon, THD analysis of compliant journal bearings considering liner deformation, Tribology International, 44, 12, (2011), 1629-1641 IF1.553
4. F.U. Shah, S. Glavatskih, D.R. MacFarlane, A. Somers, M. Forsyth and O.N. Antzutkin; Novel Halogen-free Chelated Orthoborate-Phosphonium Ionic Liquids: Synthesis and Tribophysical Properties. Physical Chemistry Chemical Physics 13(28) (2011) 12865-12873. IF3.573
5. F.U. Shah, S. Glavatskih and O.N. Antzutkin; Novel Alkylborate–Dithiocarbamate Lubricant Additives: Synthesis and Tribophysical Characterization, Tribology Letters, 45, 1 (2012), 67-78. IF1.582
6. F.U. Shah, S. Glavatskih, E. Höglund, M. Lindberg and O.N. Antzutkin; Interfacial Antiwear and Physicochemical Properties of Alkylborate-dithiophosphates, Applied Materials and Interfaces 3(4) (2011) 956-968, IF4.525
7. F.U. Shah, S. Glavatskih and O.N. Antzutkin; Synthesis, Physicochemical, and Tribological Characterization of S-Di-n-octoxyboron-O,O′-di-n-octyldithiophosphate. Applied Materials and Interfaces, 1(12) (2009) 2835-2842, IF4.525.
8. S.Cupillard, S.B.Glavatskih, M. J Cervantes, “Inertia effects in textured hydrodynamic contacts,” Invited paper, Special issue on surface texture, Journal of Engineering Tribology, Part J, 224 (8), (2010) 751-756, IF0.733.
9. S. Cupillard, S.Glavatskih, M.Cervantes, “3D thermodynamic analysis of a textured slider,” Tribology international, 42, 10, (2009) 1487-1495, IF 1.553
10. S.Cupillard, M.Cervantes, S.Glavatskih, “Pressure build-up mechanism in a textured inlet of a hydrodynamic contact,” Journal of Tribology, vol. 130, N 2, (2008), IF1.196
11. S.Glavatskih, S.DeCamillo, ”Influence of oil viscosity grade on thrust pad bearing operation,” Invited paper to the special issue on thermal effects, Journal of Engineering Tribology, Part J, (2004), 401-412, IF0.733