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BIOGRAPHY

Prof. Kato received Dr of Engineering in 1982 from the University of Tokyo. He contributed to tribology advancement by carrying out many tribological works from surface science to rotor dynamic engineering. He is now the head of Surface Science and Tribology Laboratory at UT. He is the President of Japanese Society of Tribologists (JAST) from June, 2014.

RESEARCH INTERESTS

Carbon coatings for engineering applications such as for superlubricity and barrier enhancement of plastic sheets.

Development of super accurate surface force apparatus.

EDUCATION

1971-1976 Undergraduate school of Mechanical Engineering, The University of Tokyo
1976-1982 Graduate school of Mechanical Engineering, The University of Tokyo

EMPLOYMENT

1982-1999 The University of Tokyo

1999-2005 National Institute of Advanced Industrial Science and Technology (AIST)

2005-2015 The University of Tokyo

ON-GOING RESEARCH PROJECTS

Friction Fade-out at PLC Films Slid by ZrO_2 Pins under Hydrogen Environment.

Development of Surface Force Analyzer with Ultra-High Accuracy.

Asymmetry in Shape and Elastic Modulus of Micropillars for Gecko-like Directional Adhesive Sheets.

Friction Reduction by Inner-coatings of Combustion Engine Cylinders with DLC Films.

PUBLICATIONS (selected recent papers)

Effects of texture patterns on hydrodynamic and mixed lubrication characteristics, T Kato and N Imai, IMechE part J, 227(8) 2013, 898-904.

Origin of superlubricity in a-C:H:Si films: a relation to film bonding structure and environmental molecular characteristic, X. Chen, T. Kato and M. Nosaka, ACS Appl. Mat. & Interf, 2014; Aug 27;6(16): 13389-405.

Theoretical study of the interparticle interaction of nanoparticles randomly dispersed on a substrate, S. Horikoshi and T. Kato, J. Applied Physics, 117. 023117, 2015.

Friction fade-out at polymer-like carbon films slid by ZrO2 pins under hydrogen environment, M. Nosaka, A. Mifune, M. kawaguchi, T Shiiba and T Kato, Proc IMechE Part J: On line Journal, DOI: 10.1177/1350650115569857.

AWARDS

JSME Best Paper Award 1989, ASME Best Paper Award, 1997.

IMechE Best Paper Prize 1998.

JAST Best paper Award 1999.

IMechE Best Paper Prize 2000.