Tribological material characterisation from the nanometric to the macrometric domain

CROATIAN-SLOVENIAN BILATERAL PROJECT OF SCIENTIFIC AND TECHNOLOGICAL COOPERATION

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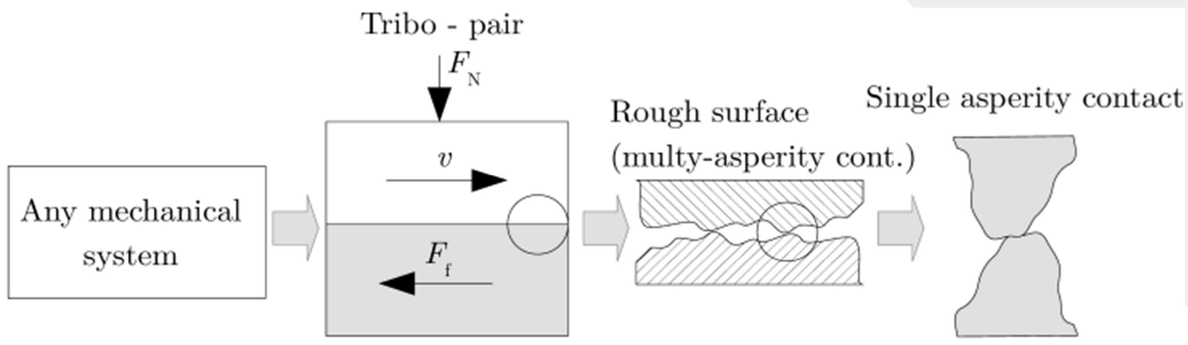
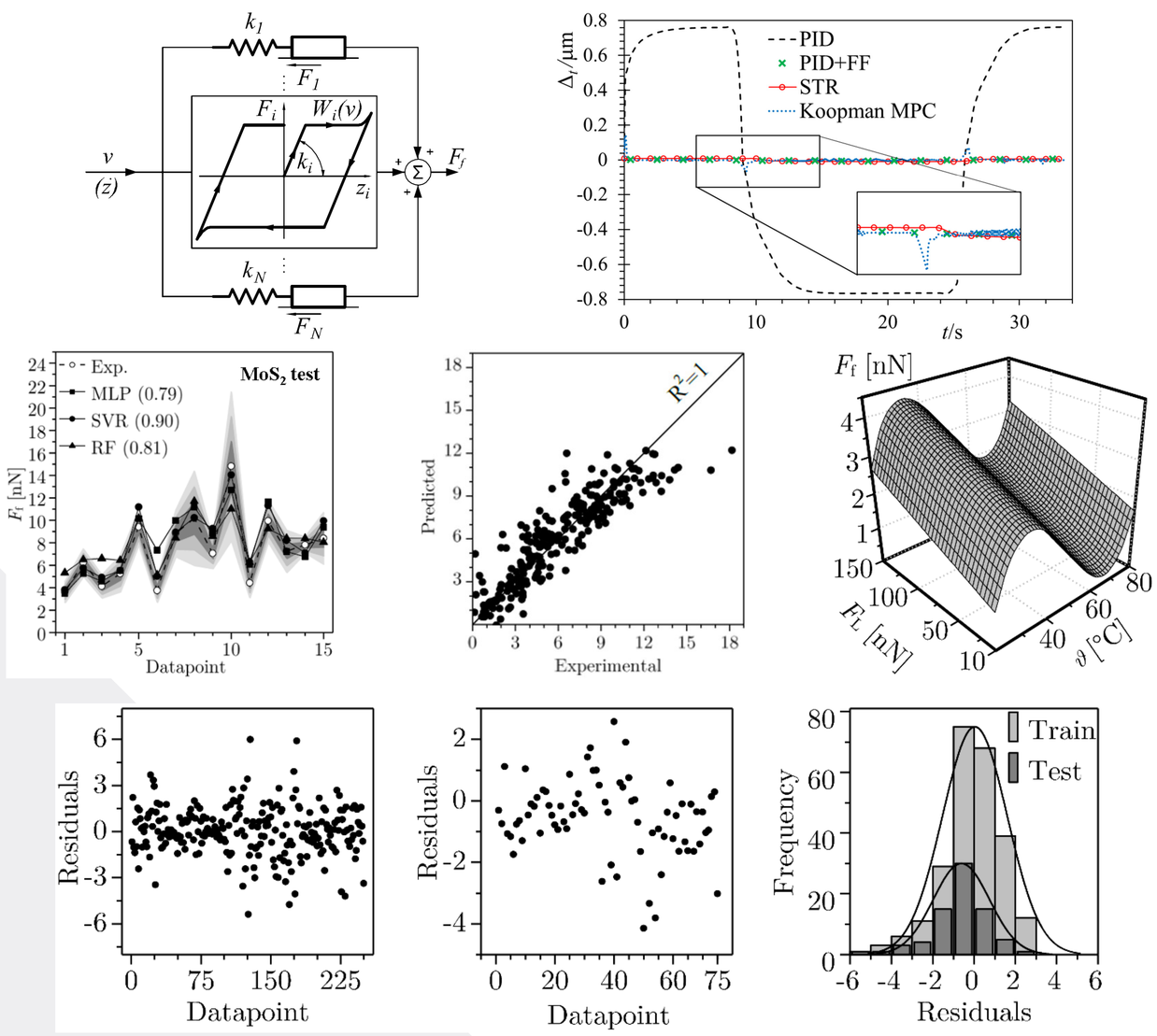


Project Aims

- Bilateral scientific project with the goal of obtaining multiscale experimental tribological measurements.
- To deepen the knowledge about the parameters that affect friction and determine multiscale and multidomain models of friction, the project includes research of friction from the nanometric to the macrometric level by experimental methods, providing characterisation of the influential parameters, and in particular the dependence of friction on material properties, surface topography, load, relative velocity and temperature.
- Development of novel multiscale models using data mining methods via machine learning and artificial intelligence.

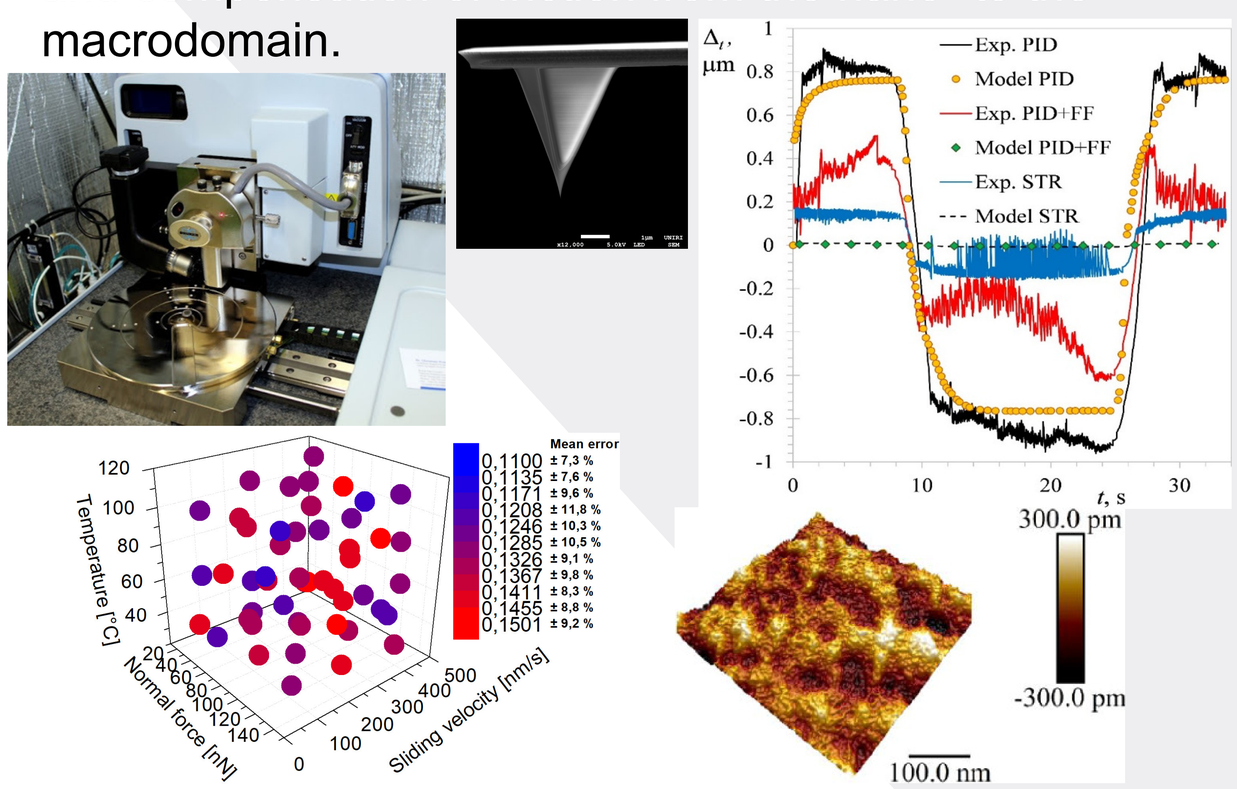
Modelling of Frictional Phenomena @ NANORI/AIRI

- Modelling of obtained experimental data via innovative data mining techniques involving machine learning and artificial intelligence methods.
- Developed mathematical models provide basis for applications in control systems, numerical methods, etc.



Experimental Multiscale Tribology @ NANORI

- Characterization, measurement, modelling, simulation and compensation of friction from the nano- to the macrodomain.



Experimental Micro- and Macrotribology @ TINT

- Characterisation and measurement of friction in the micro- and macrodomains using experimental facilities and know-how of the research group of the TINT laboratory.