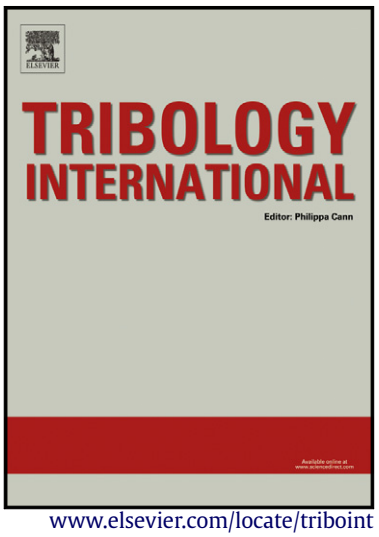

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PII: S0301-679X(15)00355-2
DOI: http://dx.doi.org/10.1016/j.triboint.2015.08.013
Reference: JTRI3790

To appear in: *Tribology International*

Received date: 24 April 2015
Revised date: 9 July 2015
Accepted date: 8 August 2015

Cite this article as: Jingyan Nian, Yifan Si, Zhiguang Guo, Advances in Atomic-Scale Tribological Mechanisms of Solid Interfaces, *Tribology International,* http://dx.doi.org/10.1016/j.triboint.2015.08.013

Advances in Atomic-Scale Tribological Mechanisms of Solid Interfaces

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Abstract: It is important to explain the triboligical mechanism of solid interfaces at the atomic scale. Theoretical models developments involving atomic-scale tribology and the most classical first-principles theory for atomic-scale friction have been described. The construction of potential energy surface based on first-principle calculation is found extremely useful to unveil the tribological mechanism for atomic-scale solid sheets. Furthermore, atomic-scale tribological mechanisms exploring achievements for metals interfaces, tribo-chemisty, carbon-based solid lubrication material and *2h*-MoS_2 have also been reviewed.

Keywords: Solid-solid Interfaces; Atomic-scale friction; First principle calculation; Molecular dynamic simulation.