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Self-lubricating polymer composites

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Stellingen

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SELF-LUBRICATING POLYMER COMPOSITES

Tribology and Interface

Jintao Shen

18th December, 2015

1. Tribology is a cross-interdisciplinary science. It embraces not only surface physics but also interface chemistry and solid/fluid mechanics.
2. It is difficult to know where and for how long wear debris will stay onto the interface in sliding contact wear.
3. The formation of sufficient PTFE transfer films is key to reduce friction in dry sliding.
4. To achieve a low wear rate of sliding parts, self-lubricating composites should not be too weak and neither too hard. (Chapter 3 & 4)
5. In the sliding interface, PTFE molecular chains undergo structural changes. (Chapter 6)
6. Tribo-mechanochemical reactions between PTFE and counterparts can be crucial in the frictional performance. (Chapter 7)
7. The quality of a journal is determined by its worst paper, not by its best. (Prof. Jeff De Hosson)
8. The cost- and time-saving characteristics of Dutch student lunches are appreciated by the higher management.
9. Without friction, no progress!
10. A jewel cannot be polished without friction; neither can mankind be refined without trials. (Chinese saying)