

Title: Design for Tribology in Engineering Practice

Abstract

The importance of controlling friction and wear of mechanical systems has been growing steadily as the societal need to conserve energy and preserve the environment continues to expand. However, a significant portion of tribological concerns in engineering applications are often overlooked, which compromises the efficiency and performance of the system. In this regard, the concept of “design for tribology” needs to be implemented in all engineering systems that involve contact between components in relative motion to attain high efficiency. For this purpose, a proper understanding of tribological phenomena needs to be instilled in design engineers through effective education about tribology. Also, the current understanding of friction and wear mechanisms along with some controversial issues must be clearly addressed. Particularly, the means to overcome the limitation of utilizing friction and wear reduction techniques developed in the lab should be systematically analysed and tackled. It is envisioned that the widespread incorporation of the “design for tribology” concept will lead to tremendous energy and environmental benefits.