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TRIBOLOGY OF MATERIALS - AN ECO-SUSTAINABLE PERSPECTIVE

Abstract:

Due to growing environmental concern, an initiative to switch towards eco-friendly options for engineering problems has been observed lately. Tribology is one such domain in which a lot of scope exists for employing eco-sustainable solutions. The present article discusses the tribological materials from an eco-sustainable viewpoint. Various surface finishing methods and bio friendly lubricants have been deliberated. Besides, suitable biomimetic techniques have also been presented. Finally some aspects touching the economics and eco-sustainable philosophies relevant to the subject have been discussed.

Eco sustainable tribology should be integrated into world science and make its impact on the solutions for worldwide problems, such as the change of climate and the shortage of food and drinking water. Tribology can be made a green process by have minimal loss of energy, longer life of devices, lesser emission of greenhouse gases and lower use of toxic materials. Lot of scope exists for achieving this which can be though use of natural materials for tribological purposes where possible, development of multifunctional coatings, reducing the loss of frictional energy by making surfaces smoother and increasing the life of device by having lower wear and corrosion. Lubrication is one key field where lot of scope exists to make to make the process eco-sustainable. Finally, strategic global policies are to be undertaken so that people are bound to go for eco-sustainable solution in tribology.

Keywords:

Tribology; Eco-sustainable; global policy