

Tribochemistry and tribocorrosion; understanding the interface to design better engineering systems

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In this paper both tribochemistry and tribocorrosion will be discussed; tribochemistry of DLC lubricated systems for engines and tribocorrosion of the hip joint. Engineering and biomedical systems may often be seen to be at different ends of the tribology spectrum but for both a detailed understanding of the chemical and electrochemical reactions and what their products are is required. Advanced surface analysis is key to this and enables engineers to then be able to design engineering systems with much improved functionality.

The paper will discuss how some of the most advanced electron microscopy and spectroscopy has enabled the mechanisms of lubrication and wear to be understood and how this information is being used to move forward to the next generation of lubricated interfaces.