

特別講演会のお知らせ

日時：2019年 8月 8日(木) 16：20～17：50

場所：九州工業大学、院2講義室

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講演題目：The importance of surface treatments
to increase adhesion

(接着力を高めるための表面処理の重要性)

**The importance of surface treatments to increase
adhesion**

In the real world, solid surfaces are rarely homogeneous, due to their exposure to pollutants, lubricant residues, acid rain, and airborne particles. This affects features such as adhesion, biocompatibility, and slipperiness. Surface treatments appear as a consequence of wanting to increase adhesion properties. There are different mechanisms to do it, in this seminary these ways are reduced at two: mechanical and chemical. Abrasives, chemicals and physical together with clean treatments are taken account to raise the adhesion, reliability and durability of adhesive bonds.

Creating a surface implies a cost in energy, which naturally resists; and this energy per unit surface is known as surface energy. It is defined as the work necessary to increase the interface of a solid by one unit of area, that is, the sum of all the intermolecular forces existing at the surface of the material. In other words, it is the degree of attraction or repulsion, which the surface of one material exerts on another. There are two different types of substrates: Low and high surface energy substrates. On the one hand, when there is a low surface energy substrate, it needs to raise its surface energy by surface treatment. On the other hand, if a substrate has high surface energy due to react with contaminants from the environment creating layers, which are difficult to bond (layers of weak cohesion), it also needs surface treatment. Besides, surface energy is not only what can be increased, the roughness is also an important parameter what should take account.

At the end, in this seminary surface treatments to modify surface energy and roughness are explaining together some characterization techniques to check them.

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