Surface Measurement Systems
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McGill UNIVERSITY

The Importance of Surface Energy and Wettability in Biomaterials

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Abstract:

Surface energy is an important parameter for the characterization of surface properties. It can provide a useful picture of the energetic situation on the surface and shows a strong dependency on various macroscopic material properties. For example, it is directly related to the interfacial adhesion between two surfaces. In particular to biomaterials understanding the surface interactions of these materials becomes important as these could influence their biological reactivity, binding or adsorption interactions in different bioprocesses as well as the functionality of several biomolecules.

In addition, the moisture sorption behavior (i.e. hydrophilicity) can play an important role in biomaterial behavior, performance, and stability. In this review presentation, several case studies focused on measuring the surface energy and wettability of proteins, therapeutics, and bone/dental cements will be introduced. Work will be highlighted by recent investigations from SMS. In addition, previously published work from other groups will be introduced.