Surface Imaging with Low Energy Electrons and Application of Spin Polarized Electrons

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Low energy electron microscopy (LEEM) is one of surface microscopy. In the first part of the talk, we will show what LEEM is, how we can see surfaces and what we can see with LEEM. Several examples of investigations of the surface dynamic processes, such as surface structural transformation, thin film growth, will be shown.

The combination of LEEM with spin polarized electrons, which is called as spin polarized LEEM (SPLEEM), enables us to investigate the surface magnetism. The contrast of SPLEEM images is determined by the dot product of the surface magnetism and the polarization of incident electrons. Therefore the highly spin polarized electron source is desired for the fast and high quality SPLEEM image acquisition. In the second part of the talk, we will show the details of SPLEEM and the possible application of highly spin polarized electron source on surface microscopy.

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