

Invited speaker

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Title

Characterisation of interfacial forces of nanowires

Abstract

Interfacial forces of nanostructures are important knowledge for making next generation nanodevices. At this stage accurate measurement of those forces is challenging and reliable testing methodologies are still lacking. In this talk our developments of innovative methodologies for measuring nanoscale interfacial forces using optical microscopy based manipulation and *in situ* scanning electron microscope (SEM) mechanical peeling techniques^[1-6] will be presented. Our understanding of the interfacial adhesion and friction behaviours of nanowire-substrate and nanowire-nanowire systems will be systematically addressed. In particular, this talk will discuss the effect of surface texture on the interfacial forces of nanowires and the effect of testing environment on the properties being measured, including some interesting phenomena discovered during our testing.

References

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3. HT Xie, J Mead, SL Wang, **H Huang**, The effect of surface texture on the kinetic friction of a nanowire on a substrate, *Scientific Reports* **7** (2017) 44907
4. HT Xie, SL Wang, **H Huang**, Characterising the nanoscale kinetic friction using force equilibrium and energy conservation models with optical manipulation, *Nanotechnology* **27** (2016) 065709
5. A Roy, HT Xie, SL Wang, **H Huang**, The kinetic friction of ZnO nanowires on amorphous SiO₂ and SiN substrates, *Applied Surface Science* **389** (2016) 797
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