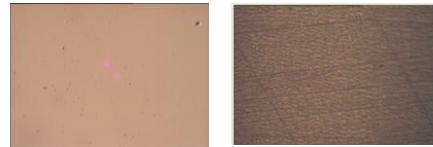


**Ultrathin coating requirement**

- ☑ A proper adhesion to the substrate
- ☑ Flexible with polymer deformation in all directions (when coated on polymer)
- ☑ Uniform coating without pinhole
- ☑ Inexpensive coating
- ☑ Recycle able (mainly when coated on polymer and biocompatible)



**Optical profilometer images**



**0% Stress**

**100% Breaking Stress**

**Function DLC coating, plasma modification and characterisation on polymer**

- ☑ Control growth by rf PECVD, FCVA process
- ☑ Optimisation of deposition conditions
- ☑ Functional coating by doping Si and N and adding graded layer
- ☑ Characterisation of chemical composition, hardness, and elastic modulus
- ☑ Microstructures analysis by Raman and XRD
- ☑ Detail surface properties by using surface profilometer and optical microscopy
- ☑ Maximum load capacity of the films
- ☑ Surface hydrophobicity

