

**NANO- DEPTH CONTROL OVER SELF ASSEMBLED STRUCTURES ON  
BIO-COMPATIBLE POLYMERIC THIN FILMS FOR BIO-ARRAY  
APPLICATIONS.**

E. Sarantopoulou

National Hellenic Research Foundation. Theoretical and Physical Chemistry Institute,  
48 Vassileos Constantinou Aven. Athens 11635, Greece.

Surface treatment and preparation of biopolymers for bio- arrays applications with lasers at 157 nm allows surface roughness depth control for optimizing surface –probe binding strength and detection sensitivity [1]. Optimization and control on the surface quality of bio-polymers, besides optimizing detection sensitivity, is accelerating hybridization time and sets the limits in relation to defect-free surface preparation from DNA immobilized strands localized on bio compatible polymer substrates. In this communication, the surface roughness from self-assembled structures on Teflon thin films was controlled with atomic resolution allowing thus optimum surface preparation for bio-array applications.

References

- [1] 157 nm laser ablation of polymeric layers for fabrication of biomolecule microarrays. A. M. Douvas, P. S. Petrou, S. E. Kakabakos, K. Misiakos, P. Argitis, E. Sarantopoulou, Z. Kollia, A. C. Cefalas. *Anal. Bioanal. Chem.*, V381, 1027 (2005).