EXPLORING MOLECULAR ASSEMBLY AT SURFACES

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3:00 p.m. – 4:00 p.m.
Engineering Lecture Theatre E3

The adsorption and self–assembly of organic molecules at surfaces has recently been investigated extensively, both because of the fundamental interest and for prospective applications in nanoelectronics. Molecule–molecule and molecule–substrate interactions can be tuned by appropriate choice of substrate material and symmetry. Upon molecular adsorption, surfaces typically do not behave as static templates, but often rearrange to accommodate different molecular species. We review recent experiments using Scanning Tunnelling Microscopy, providing new insight into fundamental properties such as molecular diffusion and self–assembly via surface templating and H-bonding driven by co-adsorption. Our approach is to modify surfaces providing suitable surface cues, that may guide the assembly of adsorbates and more complicated building blocks like living cells on biomaterials. We jokingly call this approach ‘Playing Tetris at the Nanoscale’. Recent advances in using the substrate as catalyst for surface confined polymerization reactions will also be discussed.

Visitors are most welcome: Please note the parking arrangements. There is a designated Visitors Car Park (N1) clearly ground-marked by white paint and tickets, at a cost of $3/day, are available from a dispensing machine. (‘Blue’ permit designated areas are for Monash members only.). It is also possible to park at other designated Visitors Car Parks (E1, S1 and S2) on the Clayton Campus, but tickets are $1.4/hour.

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