

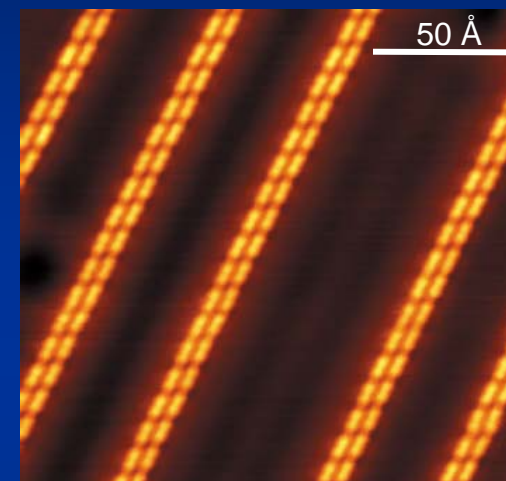
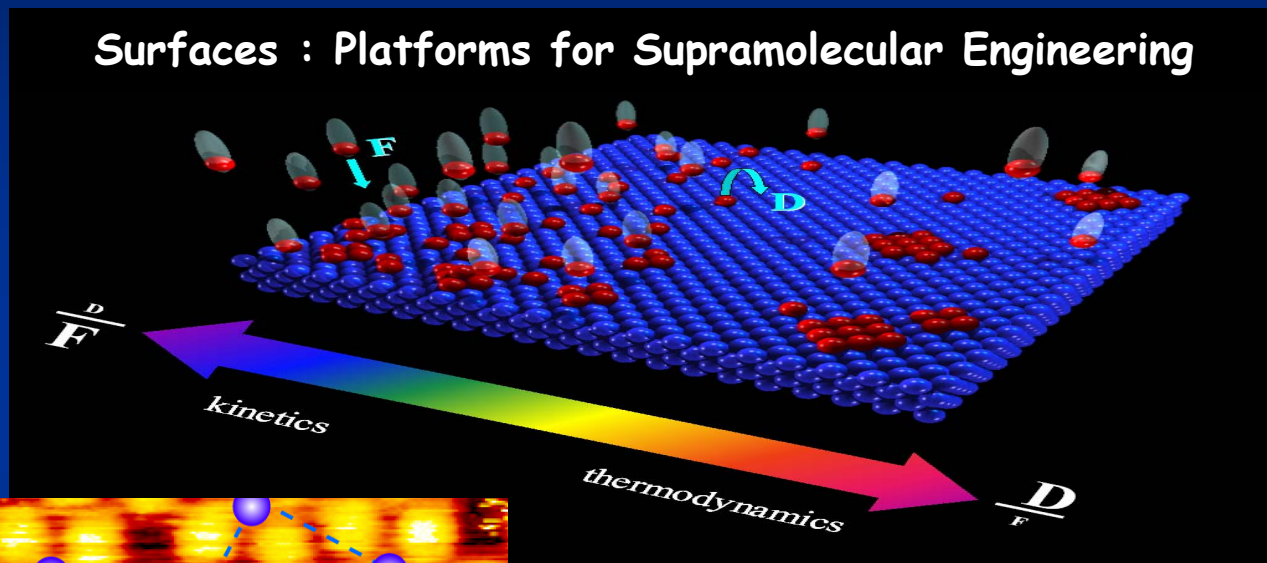
# Supramolecular Nano-Architectures at Surfaces

Johannes V. Barth

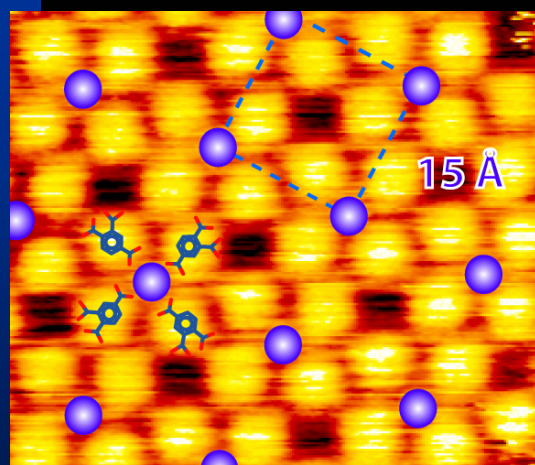
Advanced Materials and Process Engineering Laboratory – [www.ampel.ca](http://www.ampel.ca)

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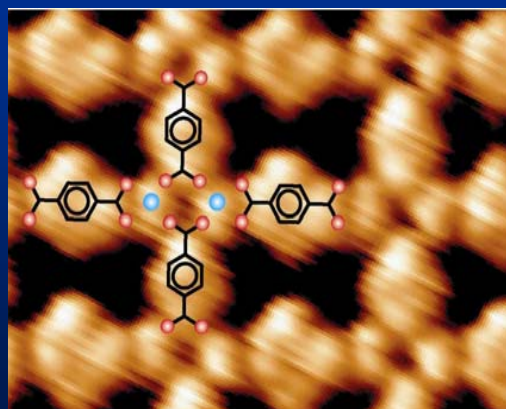
## Surfaces : Platforms for Supramolecular Engineering



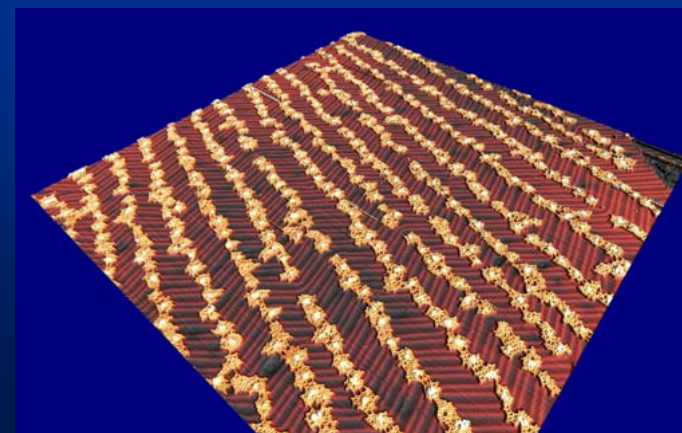
H-bonded nanograting



metal-directed assembly

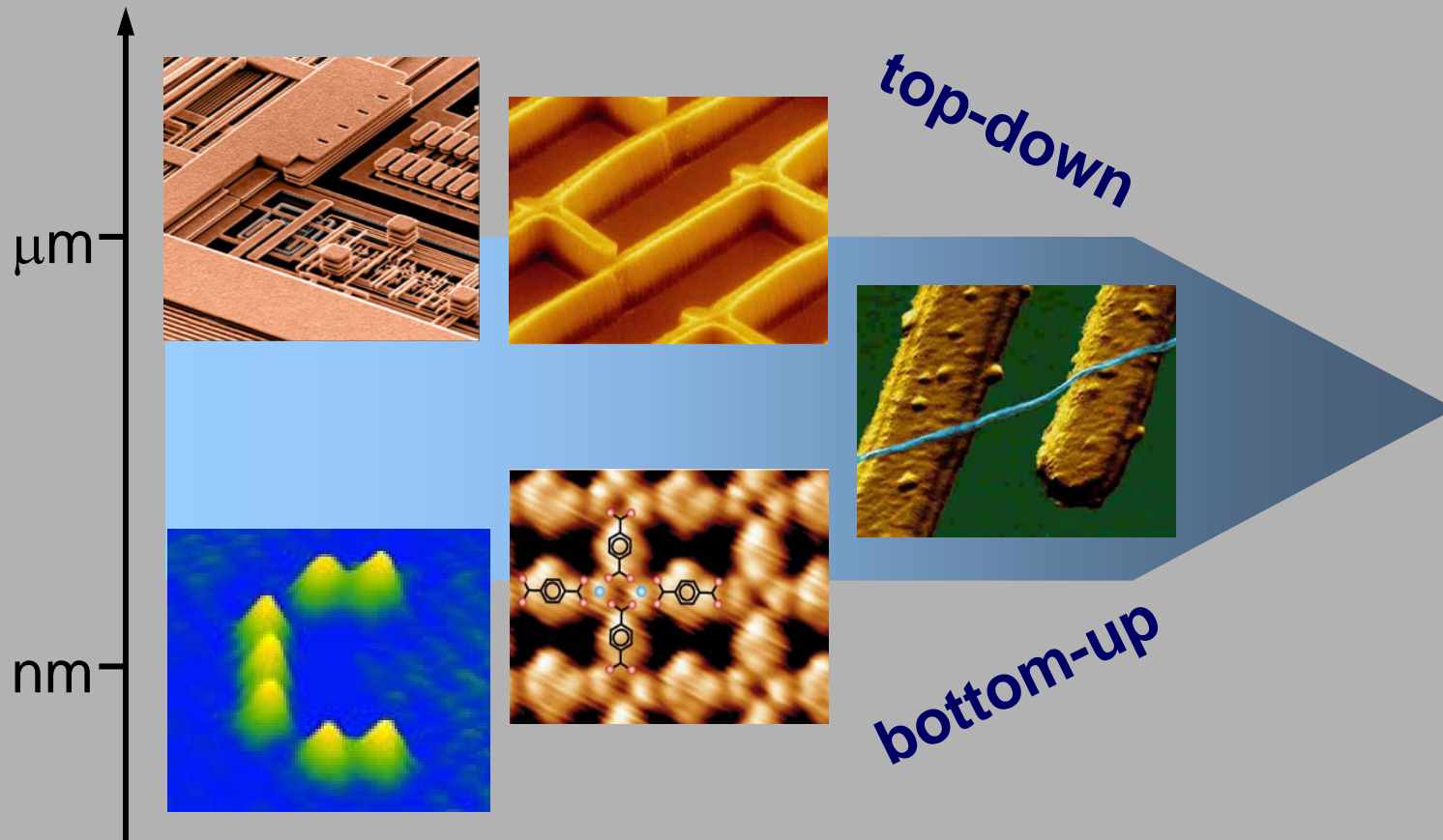


coordination network



metallosupramolecular ribbons

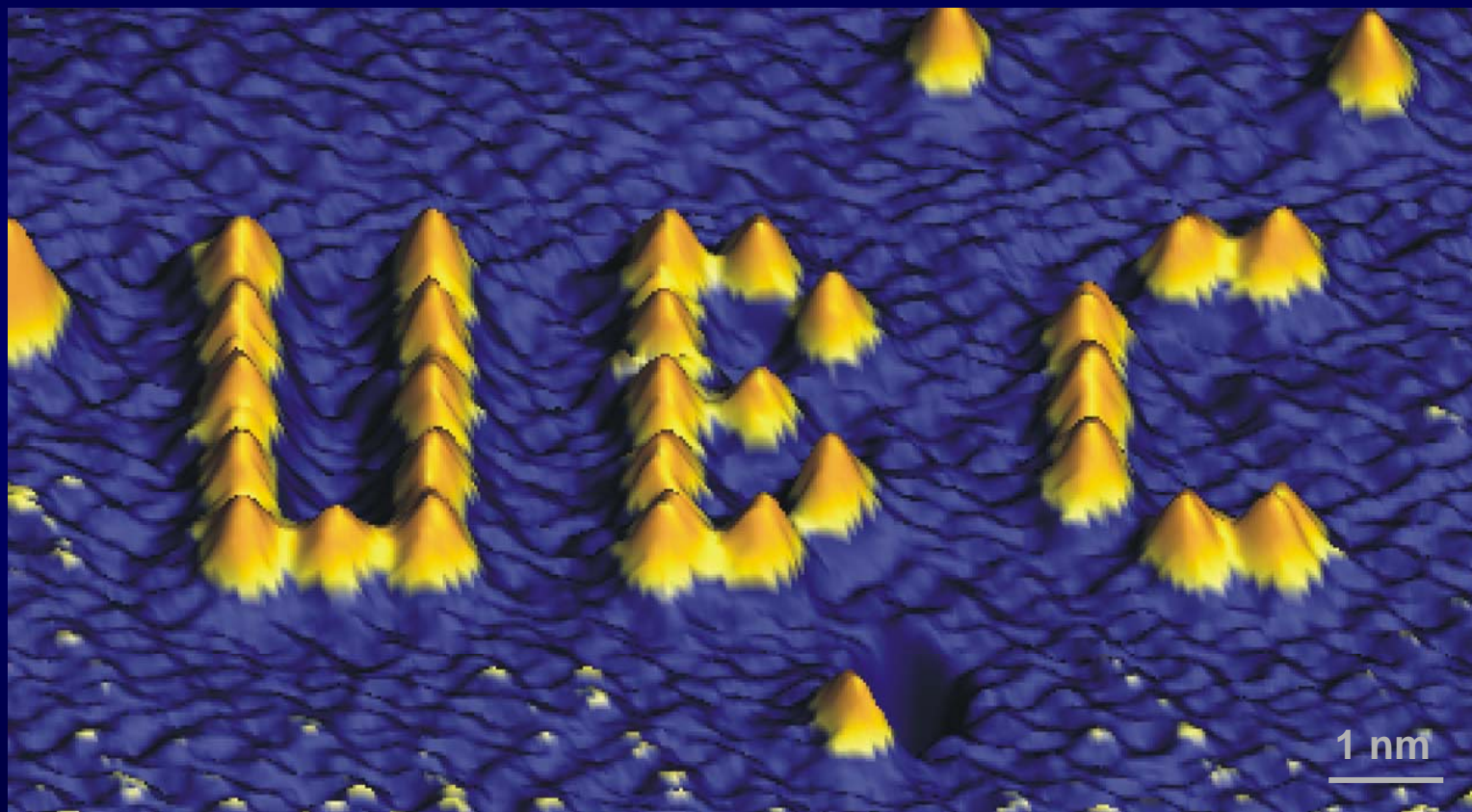
# Trends in Nanoengineering



- 'top-down' lithography & printing → mature serial processes  
→ limited in sub-100 nm range
- 'bottom-up', self-assembly → molecular-level feature definition  
→ need of fundamental research  
→ new materials & functional systems

# THE SMALLEST "UBC" EVER WRITTEN

AMPEL researchers succeed in manipulating single molecules



Letters measure  $2 \times 4 \text{ nm}^2$  and consist of CO molecules on a Cu surface, individually positioned and imaged by scanning tunneling microscopy.