Project group

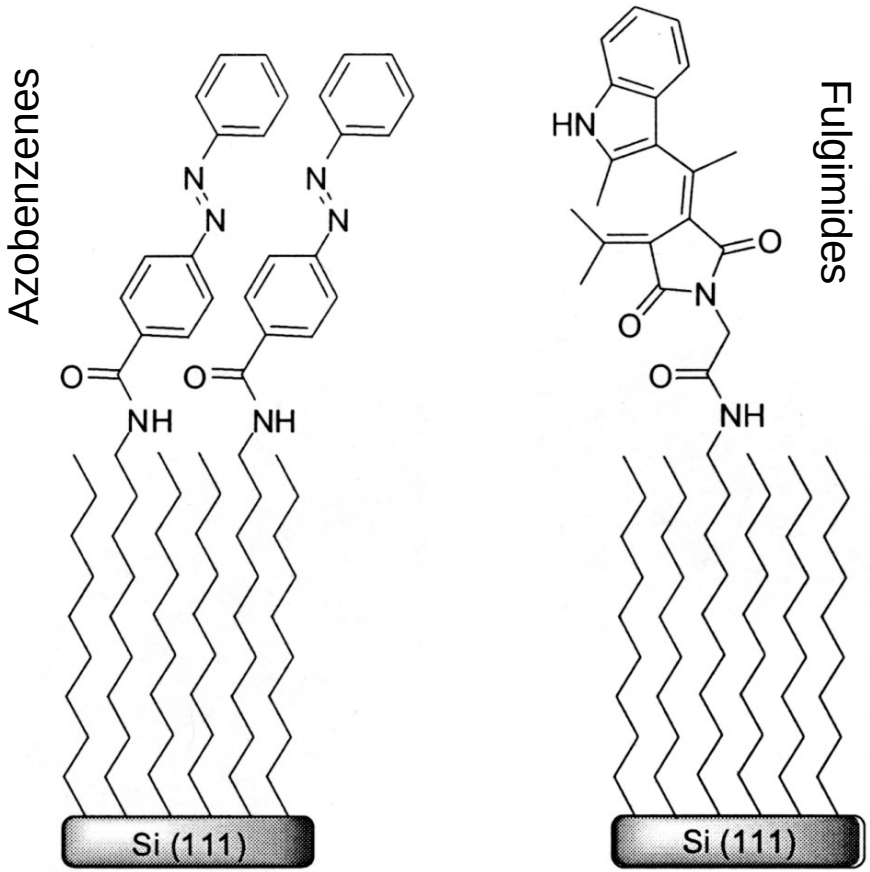
Functional molecules on silicon surfaces

TPs involved (DEC'06):

B 6 (Rück-Braun)
B 1 (Tegeder/Wolf)
A 4 (Raschke/Elsässer)
A 2 (Fölsch/Koch)

Si(111)

Self-assembled monolayers (SAM)

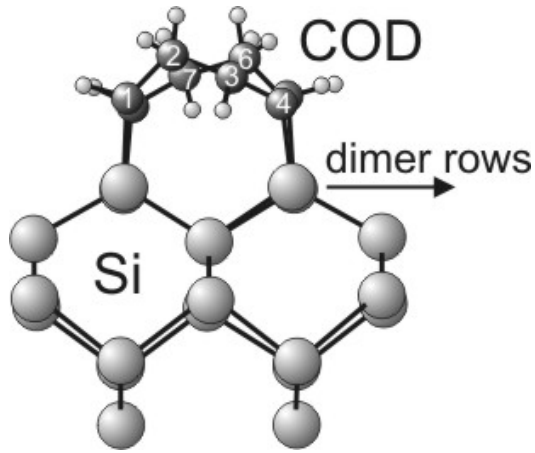


B 6 (Design & synthesis)
B 1 (Optical spectroscopy)
A 4 (Near-field microscopy)

Si(100)

Single
1,5-cyclooctadiene
molecules

C_8H_{12}



A 2 (LT-STM/STS)

Cluster calculations in TP **C 2**
(Saalfrank, Klamroth) in prep.

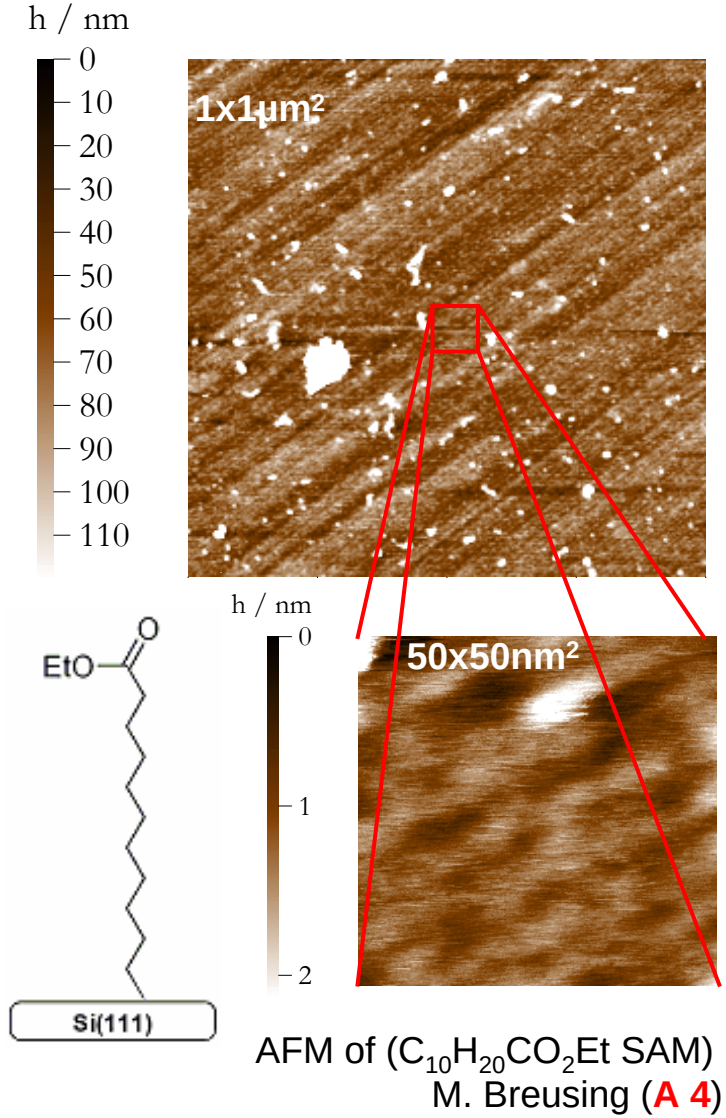
Self-assembled monolayers (SAM) on Si(111)

Characterization – current status:

- Surface tension measurement (**B 6**)
- AFM (in air), IR absorption spectroscopy (**A 4**)

Consensus: Further characterization and more analytical tools needed!

- Improvement of sensitivity in IR absorption (**A 4**)
- XPS and Sum-Frequency-Generation (SFG) (**B 1**)
- Photoelectron spectroscopy at BESSY (agreement with **B 2**, Weinelt/Gießel)
- LT-STM at LN temperature (**A 2**) (crucial points: surface contamination, sufficient conductance)



AFM of ($C_{10}H_{20}CO_2Et$ SAM)
M. Breusing (**A 4**)

What we would wish to have:

Room-temperature STM to enable faster sample throughput