

Zernike Colloquium

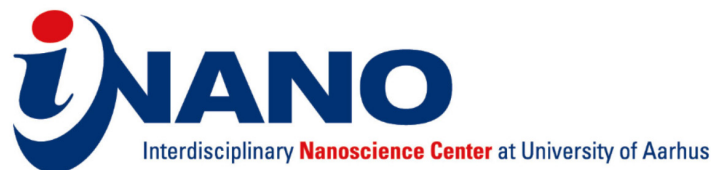
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16:00h
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Interstellar Catalysis – a Route to Molecular Complexity in Space



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Interstellar space harbours a surprising molecular complexity. In spite of the very low temperatures and pressures more than 300 different molecules have so far been detected. Catalytic reactions on dust grain surfaces and on polycyclic aromatic hydrocarbons are expected to play a dominant role in interstellar chemistry. However, the degree of chemical complexity attainable via such reactions is still under exploration. Specifically, we aim to answer the question of whether the molecular building blocks of life – amino acids, DNA bases, sugars and fatty acids – can form in interstellar space, before the formation of stars and planets. To answer this question, we recreate interstellar conditions in the laboratory and employ the full toolbox of surface science to study heterogeneous catalytic reactions on interstellar dust grain analogue surfaces. As an example, scanning tunneling microscopy measurements allow us to directly image low temperature ice cluster formation, as well as low temperature reaction products with single molecule detection efficiency.

Coffee from 15:30h
Drinks & Snacks after



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