



复旦大学物理系 物质科学报告

Time: 2:00pm, Tuesday, 2018.11.27

Location: Physics Building (Jiangwan), Room C108

From self-assembly to cell recognition

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A holy grail of nano-technology is to create truly complex, multi-component structures by self-assembly. Most self-assembly has focused on the creation of "structural complexity". In my talk, I will discuss "Addressable Complexity": the creation of structures that contain hundreds or thousands of distinct building blocks that all have to find their place in a 3D structure. Experiments have demonstrated the feasibility of making such structures. Simulation and theory yield surprising insights that can inform the design of novel structures and materials. Surprisingly, the design principles for addressable self-assembly may provide a tool to distinguish different cell surfaces.



Daan Frenkel (1948) was appointed 1968 Chair of Chemistry (Cambridge) in 2007. He was Head of the Cambridge Department from 2011 to 2015. DF is Foreign Member of the Royal Society, of the American Academy of Arts & Sciences and of the US National Academy of Sciences (USA). He is member of the Netherlands Academy of Sciences, TWAS and Academia Europaea. He is an Honorary Fellow of Trinity College Cambridge. He received numerous international prizes (including the Boltzmann Medal in 2016 and the Aneesur Rahman Prize of the APS).

DF received his PhD in Physical Chemistry from the University of Amsterdam in 1977. He then worked as a postdoc at UCLA, and after that at Shell Research (Amsterdam), the Universities of Utrecht and Amsterdam, and at the FOM Institute for Atomic and Molecular Physics. He has published over 450 papers and two books.

