



Cambridge Society for the Application of Research

Churchill College  
Storeys Way  
Cambridge  
CB3 0DS

# Self-Assembling Molecular Structures

Professor Daan Frenkel

Professor of Theoretical Chemistry, Head of Department  
Department of Chemistry, University of Cambridge

7.30pm, Monday 14<sup>th</sup> April, 2014

Wolfson Hall Lecture Theatre, Churchill College, Storey's Way, Cambridge

## The Lecture:

### Dr Frenkel writes:

"One of the holy grails of nano-science is to design complex structures that assemble themselves. This can only work if the different building blocks `know where to go'.

In my talk I will discuss some of the principles behind complex self-assembly. Some of these principles may be counter-intuitive (such as assembly due to an increase in entropy), others, such as the assembly of DNA-tagged particles, may sound more plausible, but are difficult to implement.

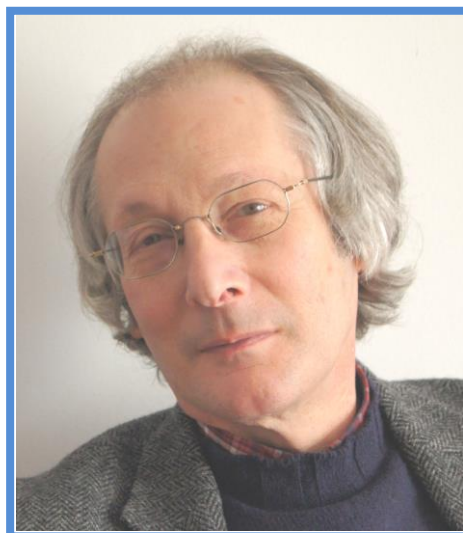
In my talk I will discuss some of the insights gained through computer simulations and I will argue that, whilst the field started slowly, the future looks bright".

Dr Frenkel's work focuses on numerical simulations of many-body systems, with a special emphasis on problems relating to ordering and self-assembly.

For more information on this exciting field, visit his website:

<http://www-frenkel.ch.cam.ac.uk/research.html>

Join us in the Wolfson Hall Lecture Theatre, Churchill College on Monday 14<sup>th</sup> April to learn more.



## About the Speaker:

**Daan Frenkel** (1948) is 1968 Professor of Theoretical Chemistry and Head of the Department of Chemistry at the University of Cambridge.

He received his PhD in experimental Physical Chemistry from the University of Amsterdam (NL). Subsequently, he worked as a postdoctoral research associate in Chemistry at the University of California at Los Angeles.

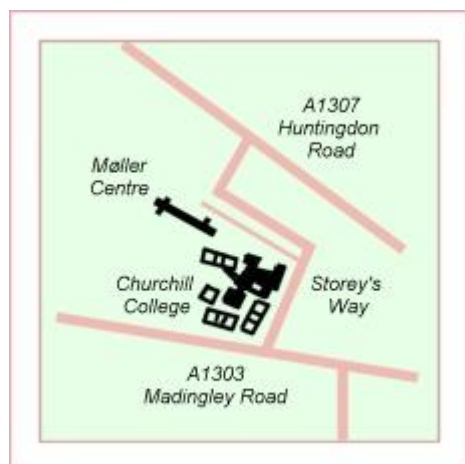
After that, he worked at Shell Research (Amsterdam), the Universities of Utrecht and Amsterdam and the FOM Institute for Atomic and Molecular Physics in Amsterdam.

Daan Frenkel is a member of the Royal Dutch Academy of Arts and Sciences, a Foreign Member of the Royal Society (London), Foreign Honorary Member of the American Academy of Arts & Sciences, Associate Fellow of the World Academy of Sciences and Member of the Academia Europaea. He has won numerous international prizes and awards.

He holds an honorary Doctorate from the University of Edinburgh and Honorary/Concurrent Professorships from Beijing University of Chemical Technology and Nanjing University.

*Daan Frenkel has published well over 400 papers. His book, written together with Berend Smit, on 'Understanding Molecular Simulation' has been translated into Chinese and Russian.*

## Practical Matters



Those attending the CSAR lecture may park in the Senior Car Park on Churchill Road, which is off Storey's Way. More parking is available further along Churchill Road, and in the Möller Centre at the far end.

CSAR lectures are open to all; CSAR members are admitted free. Pupils and students may register for free membership at the lecture reception desk.

Non-members are asked to make a nominal contribution of £3.00.

Coffee and biscuits are available in the Wolfson Foyer from around 7pm. For further directions, see: [www.chu.cam.ac.uk/about/visitors/directions.php](http://www.chu.cam.ac.uk/about/visitors/directions.php)