

## Statistical Mechanics and Thermodynamics Group

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### ANNUAL REPORT 1999

#### Membership

The membership of the Group on 26/08/99 stood at 149.

#### Committee

The committee until the AGM for 2001 consists of:

Chair	Prof. M.P. Allen (Bristol)
Hon. Secretary	Dr. D.J. Cleaver (Sheffield Hallam)
Hon. Treasurer	Dr. P.D. Olmsted (Leeds)
Ordinary Members:	Dr. P. Bartlett (Bath)
	Prof. J.-P. Hansen (Cambridge)
	Dr. P.G. Higgs (Manchester)
	Dr. J. Jones (Unilever, Port Sunlight)
	Dr. R. Sear (Surrey)
	Dr. R. Wheatley (Nottingham)

#### Meetings and other activities during 1999

The SMTG held two main meetings planned for 1999. The first, entitled "*Interactions, Phases and Flow of Colloids*", a joint workshop of the Soft Matter and Liquids Networks held in conjunction with ourselves, ran from 29 - 31 March at Cambridge University. It was devoted to the static and dynamic aspects of colloidal dispersions also incorporated the group AGM. The second meeting, "*Biomolecular Folding and Self Assembly*" ran from 12-14 April at Salford University as part of the IOP's annual congress. It was based on structure and folding mechanisms of biological macromolecules, including proteins, nucleic acids, polysaccharides and lipids, and the self-assembly of these molecules into larger scale structures. This meeting incorporated the 1999 Lennard-Jones Lecture: "*Regulation of Cellular Processes by the Membrane-Bending-Elasticity Concept*", delivered by Prof. E. Sackmann (Garching). We also supported the 1999 "*Methods in Molecular Simulation Summer School*", which was run at UMIST from 21 - 29 June. The principal lecturers were Profs. J.H.R. Clarke (UMIST), M.P Allen (Bristol), and D.J. Tildesley (Unilever) and Dr W. Smith (Daresbury); additional support came from CCP5, the ESF network SIMU and Unilever. The school was followed by a one-day workshop, this one being on "*Mesoscale*

*Modelling*". Principal lecturers were Drs. M. Haagen (Unilever), N. Spenley (Unilever) and J. Yeomans (Oxford).

### **Completed 2000 Events and Future plans**

Our first meeting of the year was a two-day conference "Ions in solids and liquids and at interfaces", held at Nottingham on 5<sup>th</sup>-6<sup>th</sup> January. This was a workshop-style conference in which the emphasis was the presentation and discussion of new applications. It was also funded by CCP5. Our main meeting this year will be "Complex Fluids 2000", which will run from 11<sup>th</sup>-13<sup>th</sup> September at Sheffield Hallam University. This meeting will consider both the experimental behaviour and theoretical understanding of complex fluid systems including bio-polymers, liquid crystals, and colloids and is being co-organised with the IOP Complex Fluids group. We have one confirmed workshop for this year: "Introduction to charged colloids and polyelectrolytes", to be led by Prof. Robijn Bruinsma of the University of Leiden. This will be held at Imperial College on Tues 24<sup>th</sup> October.

Our support for younger scientists is continuing via our co-sponsorship (through the provision of graduate-student bursaries) of two meetings: the MGMS "Modelling Biomolecular Mechanisms" conference, York, April 5<sup>th</sup>-8<sup>th</sup>; and the EuroRheo "Nonequilibrium Thermodynamics" workshop, Oxford, August 14<sup>th</sup>-18<sup>th</sup>. We are also supporting the CCP5 "Methods in Molecular Simulation" Summer School this year, UMIST, 18<sup>th</sup>-27<sup>th</sup> June.

### **Accounts**

The accounts for the year 1999, prepared by the Hon. Treasurer Dr. P.D. Olmsted, have been sent separately

D.J. Cleaver (Sheffield Hallam)  
Hon. Sec.