

Fourth Workshop on Nonequilibrium Phenomena in Supercooled Fluids, Glasses and Amorphous Materials

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PREFACE**Fourth Workshop on Nonequilibrium Phenomena in Supercooled Fluids, Glasses and Amorphous Materials**

This special issue of *Journal of Physics: Condensed Matter* presents the Proceedings of the Fourth Workshop on Nonequilibrium Phenomena in Supercooled Fluids, Glasses and Amorphous Materials, held in Pisa from 17–22 September 2006. This was the fourth of a series of workshops on this theme started in 1995 as a joint initiative of the Università di Pisa and the Scuola Normale Superiore. The 2006 edition was attended by about 200 participants from Europe, Asia and the Americas.

As for the earlier workshops, the main objective was to bring together scientists from different areas of science, technology and engineering, to comparatively discuss experimental facts and theoretical predictions on the dynamical processes that occur in supercooled fluids and other disordered materials in non-equilibrium states. The underlying conceptual unity of the field provides a common background for the scientific community working in its various areas.

In this edition the number of sessions was increased to cover a wider range of topics of general and current interest, in a larger number of stimulating lectures. The core of the workshop was a set of general lectures followed by more specific presentations on current issues in the main areas of the field. The sessions were, in sequence, devoted to:

- non-equilibrium dynamics
- aging and secondary relaxations
- biomaterials, polyamorphism and water
- polymer dynamics I
- complex systems
- pressure–temperature scaling
- thin films
- nanometre length-scale studies
- folded states of proteins and polymer crystals
- theoretical aspects and energy landscape approaches
- relaxation and heterogeneous dynamics
- rheology in fluids and entangled polymers
- biopolymers
- polymer dynamics II.

We thank the session chairmen and all speakers for the high quality of their contributions. The structure of this issue of the proceedings follows the sequence of the oral presentations in the workshop, complemented by some papers selected from the poster sessions.

Two round-table discussion sessions were organized to discuss issues that have special impact on our current understanding (or lack of it) of the dynamics of glass transition: ‘Low-energy excitations and relaxations in glasses’ and ‘An assessment of current theories: interconnections and relevance to experiments’. We are very grateful to M A Ramos and R Bömer, and to P G Debenedetti and H Z Cummins for organizing and leading these two activities.

Two very active and profitable poster sessions collected contributions on the themes of:

- relaxation processes, cooperativity in polymers and mixtures
- polyamorphism and water, biomaterials
- relaxation, aging phenomena in thin films, confined and complex systems
- theoretical aspect, energy landscape and molecular dynamics
- low temperature, glass and PT procedures
- tracer dynamics, heterogeneity and relaxation in glass formers

We acknowledge the generous support given to the workshop by our institutions, and in particular by Scuola Normale Superiore. The organization of the events in its beautiful rooms and corridors, as well as the lunches and coffee breaks held in its courtyard, especially favoured meetings and discussions between the participants. Several public and private institutions have also supported our efforts and we would like to thank them warmly: they are the ‘Soft Matter’ Center of Rome, the INFN Section in Pisa, the CNR/INFN Polylab, and Ital Scientifica, TA Instruments, Novocontrol Technologies, Up Group, Isole e Olena.

Finally, we express our gratitude to all those individuals—we mention here in particular Dr Ciro Autiero, Dr Massimo Faetti, Dr Fabio Zulli, Ms Patrizia Pucci, and Ms Caterina D’Elia—who have given their work and time to the making and running of the Workshop.

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