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Preface

It is certainly entirely commonplace to restate how important a thorough understanding of molecular liquid systems is for many fields of science and engineering. Indubitably, the variety of observed phenomena and unique behaviors of liquids make the 'liquid state' particularly interesting for the investigator. On the other hand, however, the efforts needed to apprehend liquid properties seem to make this state of matter rather daunting for many young researchers and students. The difficulties arise equally in the experiments and in the theoretical descriptions. There seems presently to be no general, unifying concept which could help to alleviate this state of affairs, except, perhaps, to encourage, stimulate and intensify as much as possible scientific exchanges between specialists from various experimental and theoretical backgrounds. Good teaching and training on these subjects are the basis on which to build.

In this spirit, a NATO Advanced Study Institute (ASI) on the physical chemistry of liquids, entitled 'Novel Approaches to the Structure and Dynamics of Liquids: Experiments, Theories and Simulations' was held from September 7 to 15, 2002, on the Greek island of Rhodes. This strongly interdisciplinary NATO-ASI Summer School, together with the annual meeting of the European/Japanese Molecular Liquids Group EMLG/JMLG, which took place parallel to the ASI and was co-sponsored by International Union of Pure and Applied Chemistry (IUPAC), was planned as a School with discussions and workshops, aimed at graduate students, postdoctoral fellows and researchers entering the field or wanting to bring up their knowledge on recent developments in fields related to molecular liquids.

Associate Professor Jannis Samios (University of Athens, Department of Chemistry, Laboratory of Physical Chemistry) together with his team dealt strongly with the organization of all of the aforementioned sessions, assisted by Professors Vladimir Durov (Lomonosov University of Moscow) and Philippe A. Bopp (University of Bordeaux). More than 130 ASI students and scientists coming from 20 countries, European and overseas

(USA, Japan, Brazil), attended the ASI, enjoying the science, in particular the multiple opportunities to learn and discuss and, last but not least, the beautiful setting of the conference venue by the sea.

Even though it is highly artificial and unproductive to separate teaching from research, particularly in an active and ongoing science, we could say that the aim of the meeting was threefold: Firstly, to offer in a series of main lectures, seminars and hands-on computer workshops and exercise a broad overview of the modern concepts, methods and tools (e.g. training on software for molecular simulations) available today to investigate liquid systems. Secondly, to offer comprehensive state of the art reviews of the field, and finally to cover some of the most recent developments in research. While the first of these aspects is covered, in terms of publications, through the usual channels appropriate to NATO ASIs (book of proceedings) and the second one through IUPAC publications, it is the third one that we attempt to address here.

Many contributions presented and discussed in Rhodes either as posters or through short oral contributions, plus some additional work, are thus made available in this special issue of the Journal of Molecular Liquids. All contributions were refereed in the usual way of the Journal; the editors have to thank the many colleagues who volunteered their time and expertise.

We have endeavored to cover equally well the three complementary aspects to which the meeting was devoted, i.e. experimental work, theoretical concepts and approaches, and simulations. The participants of the meeting and the readers at large will judge how successful we were in our attempts. We are convinced, however, that all will join us in reiterating our gratefulness to the sponsors of this event, foremost to the *Scientific Affairs Division* of NATO for the generous financial support that made possible to hold this Summer School. We are also thankful to the IUPAC, to the University of Athens, Greece and to the Ministry of Development of Greece for financial support. Finally, we would like to express our hope that it will be possible to hold similar

meetings at more or less regular intervals in the future.
They are the catalyst of science.

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