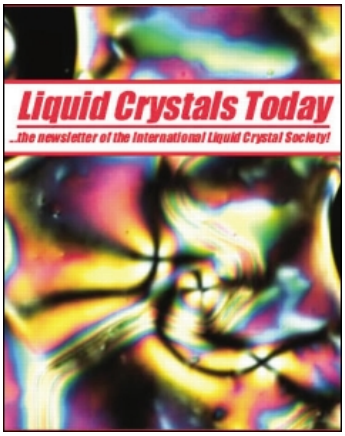

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Metallomesogens Assemble in Italy

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flexible chain polymers not containing mesogenic groups, electro-optical properties of LCPs, and the technology of new generation construction materials based on LCP and conventional thermoplastics.

The Symposium was opened by the Symposium Chairman Professor N. A. Plate' (Moscow, Russia). Professor F. Hardouin (Bordeau, France) reported results on the chain conformation and structure of nematic and smectic LCPs obtained by small angle neutron scattering. The lecture by Professor R. V. Talroze (Moscow, Russia) was devoted to the role of H-bond formation in stabilization of liquid crystalline order in amino polyacids. Professor V. P. Shibaev (Moscow, Russia) discussed photo-optical effects in comb-shaped polyacrylates and polymethacrylates containing azobenzene moieties and mesogenic fragments in pendant groups, showing that the films of these polymers are a new type of material for convertible storage of the optical information. Professor S. Stupp (Urbana, USA) considered approaches to forming supramolecular liquid crystalline nanometre thin films. Organized molecular assemblies consisting of mesogenic discotics connected with a polymer chain were the subject of an entertaining lecture by Professor H. Ringsdorf (Mainz, Germany). Such systems can form columnar phases, where electron migration under the action of a light beam is possible, which makes them suitable in photo-conductive devices. Thermotropic LC thermosets and their synthesis in the presence of a magnetic field were discussed by Professor B. A. Rosenberg (Chernogolovka, Russia). In the lectures of Professors G. Calundann and M. Jaffe (Summit, USA) the influence of the chemical structure of thermotropic aromatic Vectra copolyesters on their properties were considered. Such polymers, in addition to their practical applications, are good model systems for establishing relationships between structure, processing and properties of materials. Mesophase formation by flexible chain polymers and their electro-optical properties were considered in the lecture of Professors V. S. Papkov, Yu. K. Godovsky *et al.* (Moscow and St Petersburg, Russia). G. J. J. Out (Enschede, The Netherlands) presented results of collaborative research with Germany and Russia on unusual structural properties of a number of polyphosphazenes, linear and cyclolinear polyorganosiloxanes. Theoretical problems of anisotropic viscoelasticity in polymers were discussed in a lecture by Professor V. G. Kulitchikhin (Moscow, Russia), while Professor Yu. Ya. Gotlib (St Petersburg, Russia) showed results of his theoretical analysis of the mechanism of local mobility in main chain LCPs, and a comparison with computer simulations. Professor G. Kothe (Freiburg, Germany) presented results on viscoelastic properties and collective motions in main chain LCPs, investigated by nuclear spin relaxation. In the lecture of Professors S. N. Chvalun (Moscow, Russia) with collaborators J. Blackwell and V. Percec (Cleveland, USA) the supramolecular structures of a polymethacrylate with bulky and rigid side groups and its macromonomer were discussed. The authors showed that such systems self-organize into cylindrical channel structures, similar to the structure of the tobacco mosaic virus. The lecture of Professor A. Sonin (Moscow, Russia) was devoted to the properties and application of electro-optical composites, consisting of low molecular weight mesogens, dispersed in a polymeric matrix. A. Postema and P. Fenikx (Amsterdam, The Netherlands) presented results of their research on rheological, mechanical and morphological characteristics of composites based on polypropylene containing LCP Vectra 950. Much new and original data were included in the posters, and the highly successful Symposium provided clear evidence of the importance and potential of liquid crystal polymers in many areas of applications.

Metallomesogens Assemble in Italy

Fourth International Symposium on Metallomesogens, Cetraro, Italy

6–9 June 1995

Report by Timothy M. Swager, University of Pennsylvania, USA

Although investigations of metal-containing based liquid crystals began around the turn of the century, interest in these materials (metallomesogens) has seen a dramatic expansion over the last 10 years. The broad diversity in structure and properties of these materials was self-evident in the *"Fourth International Symposium on Metallomesogens"* recently held in Cetraro, Italy. This meeting, hosted by the Calabria research group, Mauro Ghedini and Roberto Bartolino (co-chairs), Francesco Neve (Secretary), Daniela Pucci, Alessandra Crispini, Nicola Scaramuzza, and Stefania Morrone, was held in an elegant and tranquil atmosphere afforded by the sea-side resort at The Grand Hotel, San Michele.

The conference was attended by 57 scientists form 16 countries. There were five plenary lectures given by A. Roviello (Napoli, Italy) A.-M. Levelut (Orsay, France), K. Praefcke (Berlin, Germany), N. Hoshino-Miyajima (Sapporo, Japan), and J.-L. Serrano (Zaragoza, Spain).

A consistent theme echoed by many of the participants was the need to move metallomesogens on to technological applications. However in this regard metallomesogens have been victims of their own incredible diversity, with some 60 different elements displaying coordination numbers of 2 to 8+. Hence, it has taken some years to just begin to sort out broad guidelines for the formation of materials with important properties. Presently metallomesogens have been developed which display nearly all known thermotropic phases exhibited by purely organic materials. Moreover, many examples of room temperature metallomesogen thermotropic liquid crystals now exist. Metallomesogens have also been demonstrated to display lyotropic behaviour. K. Praefcke and N. Usol'tseva presented results which show metallomesogens to display rich lyotropic behaviour in binary mixtures with hexadecane. Additionally, as demonstrated by D. Bruce and J. Holbrey the ionic nature of many transition metal complexes can produce lyotropic metallomesogenic amphiphilic systems.

The opportunities afforded by the unique properties of the metals and the elaborate geometries are beginning to be realized. J.-L. Serrano reported on the status of ferroelectric metallomesogens which promise new opportunities in the area of FLCs. Y. Galiametdinov reported liquid crystalline lanthanides which display magnetic anisotropies which are orders of magnitude greater than other liquid crystalline materials. Near term applications were also reported in the area of polymer dispersed liquid crystals (PDLCs). H. Hakemi of Snia Richerche (Milano) presented results demonstrating how metallomesogens can be used to enhance the viewing angle of PDL displays.

Undoubtedly the next meeting will bear yet greater fruits. The Fifth International Symposium is tentatively scheduled for June 1997 and will be held in the equally appealing atmosphere provided by Neuchatel, Switzerland. This meeting will be organized by R. Deschenaux , Institut de Chimie, Université de Nechatel (fax: (0041) 3823 2511).