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Speckle Observation of Molecular Dynamics in a Guest-Host Smectic A Liquid Crystal

Mark Guardalben^a; Nicholas George^b

^a Lab for Laser Energetics, Univ of Rochester, Rochester, NY, USA ^b Inst of Optics, Univ of Rochester, Rochester, NY, USA

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.. SOCIETY NEWS SOCIETY NEWS

Membership Subscriptions from Soft Currency Areas

The Board of Directors has approved guidelines for dealing with the problem of subscriptions from members who have difficulty in obtaining convertible currencies:

- **National Societies** in soft currency areas will be permitted to affiliate to the International Liquid Crystal Society at a rate of \$1 per head, and the Society Newsletter "Liquid Crystals Today" will be distributed to affiliated members through the national societies.
- **Individuals** from economically distressed areas will be permitted to join the ILCS at a discretionary rate. Those members able to visit hard currency areas for brief visits can obtain individual membership for \$5 per annum payable in exchangeable currency.

Glenn Brown Awards

This year's winner, announced at the Pisa Conference was **Jean-Baptiste Fournier** from the Solid State Physics Laboratory, University of Paris South (Orsay). The Board has agreed that in future two Glenn Brown Awards may be made, and the Co-Chairmen of the Awards Committee are **Prof S T Lagerwall** and **Prof G W Gray**. An announcement concerning submissions for the next awards will appear in *Liquid Crystals Today* in 1993.

Logo Competition



Eighteen entries were received for the logo competition and these were displayed at the 14th ILCC. Judging was by a sub-committee of senior liquid crystal scientists who assessed the designs on the basis of visual impact and practicality for reproduction in print. The winning entry was submitted by **Alice A Mihalus** from the Liquid Crystal Institute, Kent State University, and her design forms the basis of the new logo to be incorporated into ILCS literature.

Treasurer's Report

The financial report of the Treasurer, **J W Doane**, as presented at the ILCC in Pisa for the year ended December 1991 was as follows:

Opening balance, Jan 1991	\$28,273.00
EXPENSES:	
Filing Fee (OHIO)	50.00
Office & Banking expenses	316.71
Newsletter Liquid Crystals Today	} 9,030.00
Secretarial expenses	
Mailing to members	
Total expenses:	9,396.71
INCOME:	
Members' Dues	6,330.00
Advertising (Liquid Crystals Today)	200.00
Interest on savings	1,241.86
Total Income	7,771.86
Balance on hand, Dec 31, 1991	\$26,648.15

Message from the Past President

Prof S Chandrasekhar writes:

"Now that my term of office as Founder President of the ILCS has come to an end, I should like to say how gratified I am that in the short span of two years the Society has taken root in 37 countries throughout the world and attracted more than 600 members. This is, of course an indication of the growing importance of the subject in modern science and technology, but equally it is a reflection of the Society.

"The present activities of the Society include sponsoring Conferences, selecting candidates for the Glenn Brown Award, etc., but probably its most significant achievement is the regular publication of its newsletter, *Liquid Crystals Today*. The newsletter owes its success almost entirely to the Secretary and Editor Dr David Dunmur, who, I am very glad to say, will continue to serve the new Board in the same capacity for another two years. I have no doubt whatsoever that under the guidance of the new President, Prof G R Luckhurst, and the reconstituted Board, ILCS will grow in strength in the coming years. I wish it every success."

Forthcoming International Conferences

Conference Committee Chairman: Lui Lam.

The **15th ILCC** will be held in Budapest, Hungary in 1994. **Chairman: L Bata; Secretary: A Buka.** Any advance enquiries may be sent to the Conference Secretary, Dr Agnes Buka, Research Institute of Solid State Physics, Hungarian Academy of Sciences, POB 49, H-1525 Budapest, Hungary.

Bids were received for the **16th ILCC** from France, Japan and the USA, and the Conference Committee has approved the bid from Kent State University to host the 16th ILCC in 1996.

Scientific Notes

Speckle Observation of Molecular Dynamics in a Guest-Host Smectic A Liquid Crystal

from **Mark Guardalben**, Lab for Laser Energetics, Univ of Rochester, 250 E River Rd, Rochester, NY14623, USA and **Nicholas George**, Inst of Optics, Univ of Rochester, Rochester, NY 14627, USA.

It has been shown that the laser-induced scattering in a guest-host smectic A liquid crystal involves both statistically random and determining processes and can be described using the statistical theory of speckle (*Liq. Cryst.*, **12**, 689, 1992). Temporally resolved dynamics of laser-induced scattering were investigated as a function of molecular anchoring conditions in the host 4-cyano-4'-octylbiphenyl doped with 0.1 wt% dichroic dye.

The strength of molecular anchoring was shown to play a critical role in scattering dynamics during the thermal relaxation of the system from a scattering to a transparent state. Following pulsed laser excitation, regions of weaker anchoring exhibited oscillations in molecular order, with a period of ~1 sec, suggesting smectic to nematic phase transitions in the irradiated volume. No oscillations were seen in the region of strongest anchoring.

Further application of the theory of speckle will reveal the scale and the temporal behaviour of scattering and interaction volume.