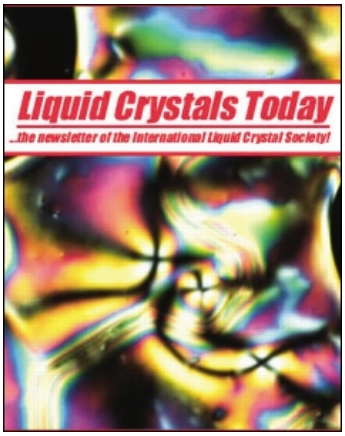


**Liquid Crystals Today**
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713681230

# FLC 1995

Richard J. Miller[a]
[a] Department of Physics and Astronomy, Manchester University, Manchester, England

**To cite this Article** Miller, Richard J.(1996) 'FLC 1995', Liquid Crystals Today, 6: 1, 6
**To link to this Article: DOI:** 10.1080/13583149608047631
**URL:** http://dx.doi.org/10.1080/13583149608047631

# FLC 1995

## 5th International Conference on Ferroelectric Liquid Crystals

### *Cambridge University, England*

### 23 – 25 *July* 1995

Report by

**Richard J. Miller**

*Department of Physics and Astronomy, Manchester University, Manchester* M13 9PL, *England*

**The Fifth Biannual International Conference on Ferroelectric Liquid Crystals was hosted by Professor William A. Crossland at Cambridge University. Consisting of plenary and invited lectures, oral and poster presentations, demonstrations and a final panel discussion, the conference was attended by about 300 delegates from 26 countries around the world. The event was kindly supported by the International Liquid Crystal Society, British Liquid Crystal Society, SID, IEE, GEC Marconi, Sharp Laboratories Europe and Thorn EMI CRL. The proceedings for FLC 95 will appear in a feature issue of the journal *Ferroelectrics* published by Gordon and Breach.**

The conference was opened with a plenary lecture by Professor Noel Clark on molecular organization and ferroelectricity in liquid crystals. This discussed a computationally inexpensive method of predicting the spontaneous polarization of ferroelectric materials. This was based on a hybrid of Monte Carlo and molecular dynamics techniques. The second plenary lecture was given by Dr Mitsuhiro Koden on ferroelectric liquid crystal materials for practical devices. These talks set the tone for the rest of the conference – the emphasis being both practical as well as academic. A third plenary lecture was given by Professor Kristina Johnson. She talked about novel applications of chiral smectic liquid crystals with particular reference to a tuneable wavelength filter utilizing the electroclinic effect in the chiral smectic A phase.

The rest of the conference was divided into sessions each with a different emphasis: materials physics, new chiral systems, applications, optical and electro-optical properties and materials chemistry. Each of these sessions were opened by an invited speaker. Professor Mikhail Osipov discussed a molecular theory for the viscosity of the smectic C* phase. Professor Günter Scherowsky discussed electro-optic effects in columnar phases of chiral discotics.

Dr R. Hikmet discussed the use of anisotropic network stabilized ferroelectric gels in displays allowing improved shock resistance and larger cell gaps. Dr Lachezar Komitov discussed the use of deformed helix switching in short pitch polymer dispersed ferroelectric liquid crystals. Dr Daniel Guillon discussed the properties of some ferroelectric materials formed using an optically active sulfinyl group and exhibiting high spontaneous polarization.

Professor Francis Hardouin discussed incommensurability in dimesogenic polyphilic chiral compounds. Dr Isa Nishiyama discussed the chirality of dimesogenic compounds where the chiral centre is situated on the central spacer connecting the rigid mesogenic units. Dr Ichiro Kawamura discussed the applications of antiferroelectric liquid crystals in display devices.

Mr Peter Ross discussed the technical problems in the development of commercially viable ferroelectric liquid crystal displays and the market opportunities. Dr Kohji Nakamura presented a full colour antiferroelectric liquid crystal display and discussed its development and performance. Finally Professor Sven Lagerwall presented an overview of ferroelectricity and antiferroelectricity in solids and liquid crystals. This was done from an historical perspective placing the relatively new field of ferroelectric liquid crystals into the context of the broader field of ferroelectric materials.

In conjunction with the poster sessions, at which there were almost two hundred posters, a range of demonstrations were on display. These illustrated various commercial and prototype devices exploiting the properties of ferroelectric liquid crystals. This included a 3D TV, an optical movement sensor, a full colour head-mounted display, full colour antiferroelectric display, optoelectronic neural network and various spatial light modulators.

The conference was rounded off with a panel discussion on the future of electro-optic devices based on ferroelectric liquid crystals. This was chaired by Professor Peter Raynes. The panel members were drawn from both industry and academia, and each had an opportunity to express their views. The consensus was that ferroelectric displays have a future, particularly in niche markets. However, many of the larger companies have a lot of capital invested in high volume production of nematic displays. The current high unit cost and low production numbers of ferroelectric displays must therefore be overcome before they can compete in the wider displays market.

A feature of the conference was a wide range of demonstrations of FLC applications: here delegates view one of the exhibits.