



Symmetry and Liquid Crystals

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Message from the Guest Editors

Dear Colleagues,

More than 50 years have passed since the liquid crystal (LC) display was proposed, and the market size is now growing to reach 100 billion US dollars. In addition, recently, research into the practical application of ferroelectric LC devices and cholesteric LC devices have been vigorously conducted. Examples of the former include a LiDAR (light detection and ranging) scanner and goggles for virtual reality entertainment, and an example of the latter includes an exhalation sensor that can detect diseases. However, many things have not yet been clarified in terms of LC configuration and physical properties.

In an LC in which a uniform layered structure or a helical structure is spatially modulated, or in an LC-polymer composite, by appropriately designing the coordination of the constituent molecules and units, it may be possible to obtain an ultra-fast response, bistability, or novel electro-optic effect that cannot be expected with conventional LC devices. In addition, it is said that human biomembranes have a smectic LC structure, and basic research in this field will lead to future bioelectronics applications...





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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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