

YANG, JAKLI, SAUPE LATEST CPIP PROFESSORS TO PUBLISH BOOKS ON LIQUID CRYSTALS

By Jim Maxwell

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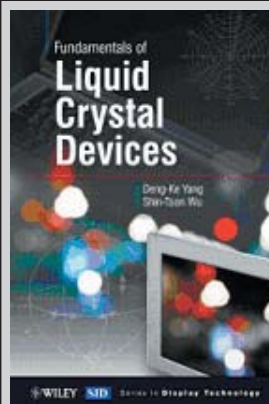
Several Chemical Physics Interdisciplinary Program (CPIP) Professors have authored books recently.

Wiley & Sons, Ltd. will be publishing a book co-authored by CPIP Professor, Deng-Ke Yang soon. Yang and co-author Shin-Tson Wu, of University of Central Florida, have written a book entitled, *Fundamentals of Liquid Crystal Devices*. The book is a comprehensive overview of LCDs including liquid crystal physics, electro-optical properties, simulation techniques and display and photonic applications. It also includes numerous examples and case studies, solved problems and challenging homework conundrums. Other topics include the principles for designing advanced specialist transmissive, reflective, transreflective liquid crystal displays, tuneable liquid crystal photonic devices including laser beam steering, light switches for telecommunication and tunable-focus lenses.

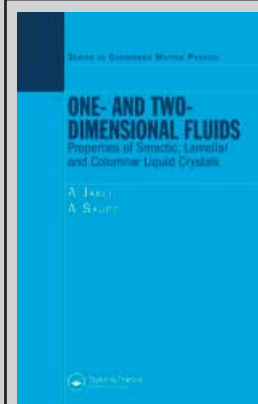
Recently, Antal Jakli and Emeritus Professor Alfred Saupe published a book entitled, *One- and Two-Dimensional Fluids: Physical Properties of Smectic, Lamellar and Columnar Liquid Crystals*, which offers a comprehensive review of these phases and their applications.

Smectic and lamellar liquid crystals are three-dimensional layered structures in which each layer behaves as a two-dimensional fluid. Because of their reduced dimensionality, they have unique physical properties, challenging theoretical descriptions, and are the subject of much current research. Beginning with an overview of one and two dimensional fluids, the authors go on to consider the basic structures of these materials and their dynamical and electrical properties, particularly the properties of smectics that offer exciting application possibilities in the display industry.

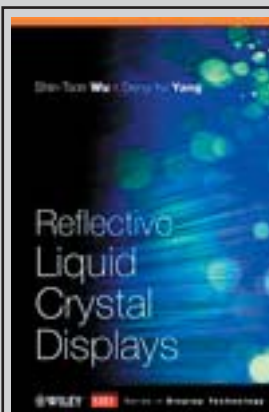
This is the third textbook written by Kent State University CPIP/Liquid Crystal Institute professors. The first, *Reflective Liquid Crystal Displays*, was written by Shin-Tson Wu and CPIP Professor Deng-Ke Yang and offers a unique insight into reflective display technology including basic operations principles, exemplary device structures and fundamental material properties of device components.



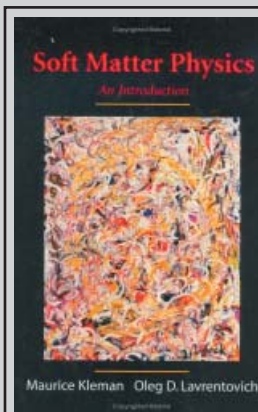
D.-K. Yang, S.-T. Wu, *Fundamentals of Liquid Crystal Devices*, John Wiley & Sons, Ltd., (coming soon).



A. Jakli, A. Saupe, *One- And Two-Dimensional Fluids: Physical Properties of Smectic, Lamellar and Columnar Liquid Crystals*, CRC Press, (2006).



S.-T. Wu, D.-K. Yang, *Reflective Liquid Crystal Displays*, John Wiley & Sons, Ltd., (2001).



M. Kleman, O.D. Lavrentovich, *Soft Matter Physics: An Introduction*, pp. 668, Springer Verlag: New York, (2003).

The second, *Soft Matter Physics: An Introduction*, was written by Maurice Kleman and LCI Director and CPIP Professor Oleg Lavrentovich and is currently being translated into Russian. It presents a comprehensive account of the fundamental principles critical to understanding the structure, phase behavior, defects, elasticity, surface properties, and dynamics of soft materials, including liquid crystals.

All of these textbooks have been used in the classrooms at the CPIP/LCI. "CPIP/LCI professors write these textbooks because they teach many courses in the PhD program that are so new and unique that other textbooks are simply not available," Lavrentovich said.