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Guest Editors' Introduction

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GUEST EDITORS' INTRODUCTION

The 7th International Conference on Unconventional Photoactive Systems was held on the campus of Stanford University, September 6–9, 1995. This biannual conference has, over its fourteen year life, emphasized the development and characterization of materials with interesting photoactive properties. It has brought together researchers working in a range of areas from synthesis, to material characterization, to practical applications. In doing this, the conference has encouraged interactions among scientists from traditionally separate areas.

A striking feature of the most recent conference at Stanford was the tremendous size range spanned by the optical materials discussed. Papers were presented describing the optical properties of isolated single molecules in polymers and crystals. Optical measurements of structured aggregates involving several atoms and molecules were described. In this category are J-aggregates involving a pair of molecules and quantum wells involving structured layers, each layer only a few molecules thick. At the next size level the unique optical properties of semiconductor nanocrystals and quantum dots with sizes below 100 nm were presented. And finally results of experiments and theory on bulk materials such as amorphous polymers, crystals, and liquid crystals were discussed. The range in size of optical materials currently under investigation in laboratories throughout the world, from a few Angstroms to millimeters and larger, is a tribute to both the rapid advance in experimental techniques for measuring optical properties and to substantial progress in the fabrication of materials in all size ranges.

Practical applications were also described in several talks. Current progress in the development of polymer LED's was discussed as were results on the use of Si/liquid junctions for solar energy conversion. Developments of photorefractive polymers for applications in holographic data storage and image processing were presented. Several talks also described the development of electrooptic materials for use in high speed light modulators and switches.

This issue of **Molecular Crystals and Liquid Crystals** is a compilation of the papers presented at the Conference. Taken together, they are a record of the rapid progress being made on all fronts in the development and study of photoactive systems.

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