Call for Papers

Time-Resolved Vibrational Spectroscopy

In the last several years impressive progress in vibrational spectroscopy has been made. Especially infrared and Raman methods provide a time resolution as high as some tens of femtoseconds, shorter than one vibrational period. New techniques enhancing sensitivity and accuracy have been developed, some of which are widely applicable.

Many new results are obtained with these methods elucidating the relaxation dynamics of vibrational and rovibrational states in different environments. Dissociation and photophysical processes, excited states as well as reaction channels are investigated. Notable progress in the theoretical interpretation of the experimental results has been made, too.

In order to obtain an overview of the present state-of-the-art in this field, a feature issue of **Applied Physics B** will be dedicated to research work on time-resolved vibrational spectroscopy. It will comprise both invited and contributed papers solicited in the areas mentioned above.

Deadline for submission

February 15, 1994.

Contributors are asked to pay attention to the formal requirements for publication in Applied Physics, as they are outlined in each issue. All papers submitted will be refereed.
Contributions to this feature issue should be submitted directly to the guest editor:

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Papers received and/or accepted too late will be published in subsequent (regular) issues.

Call for Papers

Liquid-Crystal Nonlinear Optics

Liquid-Crystal (LC) materials are of increasing scientific and technological interest. Field-induced electro-optical phenomena in thin layers of these materials make such systems ideal candidates for fast and large-scale display units. In addition, unravelling the modes of interaction between LC films and necessary interfacial properties for reliable, long-lasting surface alignment is of fundamental interest and of great practical importance for the design and construction of LC devices. In an approach to study the global orientational features of liquid crystals, nonlinear optical techniques are very useful since most LC media exhibit extraordinary nonlinear behavior.

Nonlinear optical properties of liquid crystals have first been described by I. Freund and P.M. Rentzepis in 1967. Second-harmonic signals from ferroelectric systems in the S_c^*-phase have already been observed in 1981 by A.N. Vtyurin and coworkers. Since then, numerous papers and reviews have been published with particular emphasis on the application of optical second-harmonic generation to the characterization of surface and bulk properties of LC materials.

It is the purpose of this feature issue of Applied Physics B on "Liquid-Crystal Nonlinear Optics" to collect contributions demonstrating the application of nonlinear optical techniques for studying the operation of LC devices. Highlights could be all-optical switching devices or noval, efficient frequency-converting schemes that make use of the high intrinsic nonlinearity of these organic materials as well as the high degree of macroscopic bulk alignment in LC devices. Contributions are welcome that deal with any kind of second- and third-order nonlinear processes including Degenerate Four-Wave Mixing (DFWM) and the various types of $\chi^{(2)}$ and $\chi^{(3)}$ difference- and sum-frequency generation.

Deadline for submission

March 31, 1994.

Contributors are asked to pay attention to the formal requirements for publication in Applied Physics, as they are outlined at the beginning of each issue. All papers submitted will be refereed.

Contributions to this feature issue should be submitted directly to the co-editor:

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Papers received and/or accepted too late will be published in subsequent (regular) issues of Applied Physics B.