

**BULLETIN OF THE RUSSIAN ACADEMY OF SCIENCES. PHYSICS  
SUPPLEMENT**

**PHYSICS OF VIBRATIONS**

Volume 60, Number 2, 1996

**CONTENTS**

**NONLINEAR OPTICS**

- Forward Stimulated Brillouin Scattering of Wide-Band Radiation in an Acoustic Resonator  
*L.E. Chernyshov*..... 65
- Complex Dynamics of a Fabry–Perot Interferometer with Four-Level Resonant Medium  
*N.A. Ivanova, A.S. Rubanov, A.L. Tolstik, and A.V. Chalei*..... 72
- Amplification without Population Inversion and Enhancement of Refractive Index  
in the Zero-Absorption Region Using Two-Photon Pumping  
*V.G. Arkhipkin and E.N. Minakova* ..... 77
- Picosecond Spectral Brightening and Darkening in Thin-Film Matrices Activated by Microcrystals  
*O.V. Goncharova and S.A. Tikhomirov* ..... 83

**INFRARED SPECTROSCOPY**

- Photobeam Controlling of a Low-Dimensional Medium Structure  
*R.I. Mints and D.B. Berg*..... 94
- Structure Activation in a Biomacromolecule–Hydrate Shell Cooperative System  
*R.I. Mints and D.B. Berg*..... 99

**NONLINEAR SPECTROSCOPY**

- Investigation of Photophysical Processes in Semiconductor –Insulator–Adsorbed Molecules Structures by Means of  
Nonlinear and Fluorescence Laser Spectroscopy  
*A.N. Baranov, B.T. Mukushev, V.V. Polonsky, and A.M. Saletsky*..... 103

**PHOTON PROPERTIES**

- Stopped Light  
*L.A. Rivlin* ..... 113

**LASER PHYSICS AND REMOTE SENSING**

- Pulsed Chemical Hydrogen Fluoride Lasers: Problems, Developments, and Applications  
*B.G. Bravy, G.K. Vasiliev, V.I. Kiriyanov, E.F. Makarov, and Yu.A. Chernyshev*..... 117
- Multichannel Local and Remote Control of Atmospheric Gaseous and Aerosol Contamination  
by HF (DF)-Laser Radiation Lines  
*V.Ya. Agroskin, G.K. Vasiliev, V.I. Guriev, and A.N. Zhitov*..... 122