

Preface

Nonlinear optics is a multidisciplinary study ranging from fundamental studies to applications. In 1960, the founder of Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences (FJIRSM), Prof. Jia-Xi Lu, initiated and motivated a comprehensive research base in China specializing in structural chemistry and new crystalline materials. After more than 50 years of untiring efforts, FJIRSM is devoted to the fundamental research, development, manufacturing, and marketing of a wide range of nonlinear optical (NLO) crystals. CASTECH, the company founded by FJIRSM in 1988, has become the leading supplier for LBO, BBO, etc. crystals in the world.

We have organized two volumes to summarize some of the recent progress in FJIRSM focusing on structure–property relationships in nonlinear optical crystals. The first volume, devoted to the UV-vis region, contains six review-type chapters written by seven of our faculty members who are the leading scientists in their fields. These chapters are the structural design and property characterization for second-harmonic generation materials by Prof. W.-D. Cheng, NLO iodates, selenites and tellurites by Prof. J.-G. Mao, structure, growth, nonlinear optics, and laser properties of $RX_3(BO_3)_4$ by Prof. G.-F Wang, recent developments of borate self-frequency conversion laser crystals by Prof. C.-Y. Tu, structure design and crystal growth of UV borates by Prof. N. Ye, and cation effects in doped BBO and halogen anion effects in $Pb_2B_5O_9X$ by Profs. L.-M. Wu and M.-C. Hong.

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The UV-Vis Region

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