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Higher Education

Ph.D. Institute of Crystallography, Russian Academy of Science, 1982.

Experience

Research Associate, Institute of Ultrafast Spectroscopy and Lasers, Physics Department, City College of New York, July 24, 1995 – present.

Senior Research Scientist, Institute of Crystallography, Russian Academy of Science. Moscow, June 1, 1987-July 24, 1995

Research Scientist, Institute of Crystallography, Russian Academy of Science. Moscow. October 1, 1974 – May 31, 1987.

Scope of research

Synthesis, crystal growth, and characterization of new materials for different applications (optical, electrical, magnetic, etc), sol-gel synthesis, flux growth, top-seeding solution technique, liquid phase epitaxy, Czochralski method

Experimental diagnostic techniques

X-ray diffraction, differential thermal analysis (DTA), thermo-gravimetric analysis (TGA), scanning electron-microscopy (SEM), confocal and atomic-force microscopy (AFM), optical spectroscopy techniques (absorption, reflection, fluorescence)

List of publications includes 90 papers

Selected publications

1. M. Yu. Sharonov, T. Myint, **A. B. Bykov**, V. Petricevic, and R. R. Alfano, Optical properties of neodymium activated crystalline nanostructures grown in transparent porous glass, *J. Opt. Soc. Am. B*, 24 (2007) 2868-2876.
2. M. Sharonov, **A. B. Bykov**, V. Petricevic, and R. Alfano, Continuous tunable laser operation in both the 1.31 and 1.55 μm telecommunication windows in LiInSi/GeO_4 olivines doped with trivalent chromium, *Optics Letters*, 32 (2007) 3489-3491
3. M.Yu. Sharonov , **A.B. Bykov**, T. Myint, V. Petricevic, R.R. Alfano, Spectroscopic study of chromium-doped transparent calcium germanate glass-ceramics, *Optics Communications* 275 (2007) 123–128
4. **A.B. Bykov** , M.Yu. Sharonov , V. Petricevic , I. Popov , L.L. Isaacs , J. Steiner , R.R. Alfano, Synthesis and characterization of Cr^{4+} -doped $\text{CaO-GeO}_2\text{-Li}_2\text{O-B}_2\text{O}_3(\text{Al}_2\text{O}_3)$ transparent glass-ceramics, *Journal of Non-Crystalline Solids*, 352 (2006) 5508–5514
5. **A. B. Bykov**, V. Petricevic, M. Yu. Sharonov, J. Steiner, L. L. Isaacs, T. Avrahami, R. DiBlasi, S. Sengupta, and R. R. Alfano, Flux growth and optical characterization of Cr-doped LiInGeO_4 , *Journal of Crystal Growth, Volume 274, Issues 1-2, 15 January 2005, Pages 149-155*
6. M. Sharonov, V.Petricevic, **A. B. Bykov**, and R.R. Alfano, Near-infrared laser operation and spectroscopy of Cr^{3+} centers in chromium doped LiInGeO_4 and LiScGeO_4 crystals, *Opt. Lett.*, 30, 851-853 (2005)
7. M. Yu. Sharonov, **A. B. Bykov**, P. Rojas, V. Petricevic, and R. R. Alfano, Spectroscopy of chromium centers in LiScGeO_4 and LiInGeO_4 single crystals, *Physical Review B*, 72, 115111 2005.
8. M. Yu. Sharonov, **A. B. Bykov**, V. Petričević and R. R. Alfano, Cr^{4+} -doped $\text{Li}_2\text{CaSiO}_4$ crystal: growth and spectroscopic properties, *Optics Communications*, 231(2004)273-280.
9. M. Yu. Sharonov, **A. B. Bykov**, S. Owen, V Petricevic, and R. R. Alfano Crystal growth and optical properties of $\text{Cr}^{4+}:\text{Li}_2\text{TiGeO}_5$. *J. Appl. Phys.* 93 (2003) 1044-1047
10. **A. B. Bykov**, V. Petricevic, J. Steiner, Di Yao, L. L. Isaacs, M. R. Kokta, R. R. Alfano, Flux growth and characterization of $\text{Cr}^{4+}:\text{Ca}_2\text{GeO}_4$ crystals as a new near-infrared tunable laser material”, *J Crystal Growth*, 211 (2000) 295-301.