

# Contents

## Part I Fundamental Studies

- Microtheory of Scintillation in Crystalline Materials** . . . . . 3  
Andrey N. Vasil'ev
- Fast Optical Phenomena in Self-Activated and Ce-Doped  
Materials Prospective for Fast Timing in Radiation Detectors** . . . . . 35  
Gintautas Tamulaitis

## Part II Material Science

- Lead Tungstate Scintillation Material Development for HEP  
Application** . . . . . 57  
E. Auffray and M. Korzhik
- Electronic and Optical Properties of Scintillators Based  
on Mixed Ionic Crystals** . . . . . 63  
A. Belsky, A. Gektin, S. Gridin, and Andrey N. Vasil'ev

## Part III Technology and Production

- Raw Materials for Bulk Oxide Scintillators for Gamma-Rays,  
Charged Particles and Neutrons Detection** . . . . . 85  
G. Dosovitskiy
- Restart of the Production of High-Quality PbWO<sub>4</sub> Crystals for  
Calorimetry Applications** . . . . . 104  
V. Dormenev, K. -T. Brinkmann, R. W. Novotny, H. -G. Zaunick,  
J. Houzvicka, S. Ochesanu, and D. Petrydes
- Development of YAG:Ce,Mg and YAGG:Ce Scintillation Fibers** . . . . . 114  
V. Kononets, K. Lebbou, O. Sidletskiy, Yu. Zorenko, M. Lucchini,  
K. Pauwels, and E. Auffray

<b>Modification of Plastic Scintillator for Neutron Registration</b> . . . . .	129
P. Zhmurin	
<b>Skull Method—An Alternative Scintillation Crystals Growth Technique for Laboratory and Industrial Production</b> . . . . .	150
V. Taranyuk	
<b>MO–SiO<sub>2</sub> and MO–SiO<sub>2</sub>–Gd<sub>2</sub>O<sub>3</sub> (M = Ca, Ba) Scintillation Glasses</b> . . .	160
Y. Tratsiak, A. Fedorov, G. Dosovitskiy, F. Moretti, and E. Trusova	
<b>Composite Scintillator</b> . . . . .	167
A. Yu. Boyarintsev, T. A. Nepokupnaya, Yu. D. Onufriyev, and V. A. Tarasov	
<b>Crystalline and Composite Scintillators for Fast and Thermal Neutron Detection</b> . . . . .	195
Nikolai Z. Galunov, Natalya L. Karavaeva, and Oleg A. Tarasenko	
<b>Part IV Advanced Radiation Detectors and Detecting Systems</b>	
<b>Scintillation Detectors in Experiments on High Energy Physics</b> . . . . .	211
B. A. Shwartz	
<b>Calorimeter Designs Based on Fibre-Shaped Scintillators</b> . . . . .	231
K. Pauwels, M. Lucchini, A. Benaglia, and E. Auffray	
<b>Molybdate Cryogenic Scintillators for Rare Events Search Experiments</b> . . . . .	242
D. A. Spassky, V. V. Alenkov, O. A. Buzanov, and V. N. Kornoukhov	
<b>Oriented Crystal Applications in High Energy Physics</b> . . . . .	259
V. V. Tikhomirov, V. V. Haurylavets, A. S. Lobko, and V. A. Mechinsky	
<b>New Advanced Scintillators for Gamma Ray Spectroscopy and Their Application</b> . . . . .	281
Sergey Svertilov, Vitaly V. Bogomolov, Anatoly Iyudin, Ivan Maksimov, Aleksandra Markelova, and Ivan Yashin	
<b>Part V Instrumentation and Applications</b>	
<b>Demand for New Instrumentation for Well Logging and Natural Formations Monitoring</b> . . . . .	303
Maxim Vasilyev and Valery Khabashesku	
<b>Portal Monitoring Devices</b> . . . . .	325
V. Linev, E. Lineva, D. Pozdnyakov, I. Emelianov, and K. Sosenko	



<http://www.springer.com/978-3-319-68464-2>

Engineering of Scintillation Materials and Radiation  
Technologies

Proceedings of ISMART 2016

Korzhik, M.; Gektin, A. (Eds.)

2017, XII, 339 p. 233 illus., 93 illus. in color., Hardcover

ISBN: 978-3-319-68464-2