

Publikacje po projekcie NCN 2012/07/B/ST5/02376

Garnets

Ce³⁺ doped

1. H. Przybylińska, Chong-Geng Ma, M. Brik, A. Kamińska, P. Sybilski, A. Wittlin, M. Berkowski, Yu. Zorenko, V. Gorbenko, H. Wrzesinski, and A. Suchocki, Electronic structure of Ce³⁺ multi-centers in yttrium aluminum garnets, *Applied Physics Letters*, 2013, V.102, P. 241112 (5).
2. H. Przybylińska, A. Wittlin, Chong-Geng Ma, M. Brik, A. Kamińska, P. Sybilski, Yu. Zorenko, M. Nikl, V. Gorbenko, M. Kucera, A. Fedorov and A. Suchocki, Rare-earth antisites in lutetium aluminum garnets: influence on lattice parameter and Ce³⁺ multicenter structure, *Optical Materials*, 2014, V. 36, P.1515-1520.
3. V. Laguta, Yu. Zorenko, V. Gorbenko, A. Iskaliyeva, Yu. Zagorodniy, O. Sidletskiy, P. Bilski, A. Twardak, M. Nikl, Aluminum and Gallium Substitution in Yttrium and Lutetium Aluminum-Gallium Garnets: Investigation by the Single-Crystal NMR and TSL Method, *Journal of Physical Chemistry*, 2016, accepted for publication, DOI: 10.1021/acs.jpcc.6b08593.
4. Yu. Zorenko, T. Zorenko, P. Malinowski, O. Sidletskiy, S. Neicheva, Luminescent properties of Y₃Al_{5-x}Ga_xO₁₂:Ce crystals, *Journal of Luminescence*, 2014, V. 156, P.102–107.
5. Yu. Zorenko, V. Gorbenko, T. Zorenko, A. Fedorov, Luminescent and scintillation properties of the Ce³⁺ doped Y_{3-x}Lu_xAl₅O₁₂:Ce single crystalline films. *Journal of Luminescence*, 2016, V.169, P. 822–827.
6. Paul-Antoine Douissard, Thierry Martin, Federica Riva, Yuriy Zorenko, Tetiana Zorenko, Kazimierz Paprocki, Alexander Fedorov, Pawel Bilski, Anna Twardak, Epitaxial growth of LuAG:Ce and LuAG:Ce,Pr films and their scintillation properties, *IEEE TNS*, 2016, V.63(3), P.1726-1732.
7. Yuriy Zorenko, Paul-Antoine Douissard, Thierry Martin, Federica Riva, Vitaliy Gorbenko, Tetiana Zorenko, Kazimierz Paprocki, Aizhan Iskaliyeva, Sandra Witkiewicz, Alexander Fedorov, Paweł Bilski, Anna Twardak, Scintillating screens based on the LPE grown Tb₃Al₅O₁₂:Ce single crystalline films, *Optical Materials*, 2016, <http://dx.doi.org/10.1016/j.optmat.2016.09.066>.
8. Yu. Zorenko, V. Gorbenko, V. Savchyn, T. Zorenko, A. Fedorov, O. Sidletskiy. Novel scintillating screens based on the single crystalline films of Ce doped multi-component (Gd,Y,Lu)₃(Al,Sc)₅O₁₂ garnets. *IEEE Transaction on Nuclear Science*, 2014, Vol.61, Is.1, P. 439–442.
9. Yuriy Zorenko, Vitaliy Gorbenko, Volodymyr Savchyn, Tetyana Zorenko, Alexander Fedorov, Oleg Sidletskiy, Development of scintillating screens based on the single crystalline films of Ce doped (Gd,Y)₃(Al,Ga,Sc)₅O₁₂ multicomponent garnets, *Journal of Crystal Growth*, 2014, Vol. 401, P. 532-536.
10. Yu. Zorenko, V. Gorbenko, Ja. Vasylykiv, A. Zelenyj, A. Fedorov, R. Kucerkova, J.A. Mares, M. Nikl, P. Bilski, A. Twardak. Growth and luminescent properties of scintillators based on the single crystalline films of Lu_{3-x}Gd_xAl₅O₁₂:Ce garnet, *Material Research Bulletin*, 2015, V. 64, P. 355–363.
11. Yu. Zorenko, V. Gorbenko, Ja. Vasylykiv, T. Strzyżewski, A. Fedorov, R. Kucerkova, J.A. Mares, M. Nikl, P. Bilski, A. Twardak. Growth and luminescent properties of scintillators based on the single crystalline films of Lu_{3-x}Gd_xA_{5-y}Ga_yO₁₂:Ce garnet, *Journal of Luminescence*, 2016, V.169, P. 828-837.
12. Yu. Zorenko, V. Gorbenko, T. Zorenko, O. Sidletskiy, A. Fedorov, P. Bilski and A. Twardak, High-performance Ce-doped multicomponent garnet single crystalline film scintillators, *Physica Status Solidi RRL*, 2015, V.9, No 8, P. 489–493.
13. Yuriy Zorenko, Vitalii Gorbenko, Tetiana Zorenko, Kazimierz Paprocki, Martin Nikl, Jiri A. Mares, Pawel Bilski, Anna Twardak, Oleg Sidletskiy, Iaroslav Gerasymov, Boris Grinyov, Alexandr

Fedorov, Scintillating screens based on the single crystalline films of multicomponent garnets: new achievements and possibilities, IEEE TNS, 2016, V.63(2), P.496-502.

14. Yuriy Zorenko, Vitalii Gorbenko, Tetiana Zorenko, Kazimierz Paprocki, Paweł Bilski, Anna Twardak, Taras Voznyak, Oleg Sidletskiy, Yaroslav Gerasimov, Boris Grynirov, Alexandr Fedorov. Composition engineering of single crystalline films based on the multicomponent garnet compounds, Optical Materials, 2016; doi:10.1016/j.optmat.2016.03.031.

15. Yu. Zorenko, V. Gorbenko, T. Zorenko, K. Paprocki, A. Iskaliyeva, O. Sidletskiy, B. Grynirov, A. Fedorov, P. Bilski, A. Twardak. Development of Single Crystalline Film Scintillators Based on the Ce-doped $Tb_{3-x}Gd_xAl_{5-y}Ga_yO_{12}$ Mixed Garnet, submitted to Journal of Alloys and Compounds.

16. K. Bartosiewicz, V. Babin, M. Nikl, J.A. Mares, J.A. Mares, Yu. Zorenko, V. Gorbenko, Luminescence and Energy Transfer Processes in $(Lu,Tb)_3Al_5O_{12}$ Single Crystalline Films Doped with Ce^{3+} , Journal of Luminescence, 2016, V.173, 141–148.

Pr³⁺ doped

17. V. Gorbenko, Yu. Zorenko, T. Zorenko, T. Voznyak, K. Paprocki, F. Fabisiak, A. Fedorov, P. Bilski, A. Twardak, G. Zhusupkalieva, Luminescent and scintillation properties of the Pr^{3+} doped single crystalline films of $Lu_3Al_{5-x}Ga_xO_{12}$ garnet, Radiation Measurements, 2016, vol. 90, P. 183-187.

18. Yu. Zorenko, V. Gorbenko, T. Zorenko, T. Voznyak, S. Nizankovskiy, Comparison of the luminescent properties of $Lu_3Al_5O_{12}:Pr$ crystals and films under synchrotron radiation excitation, Journal of Luminescence, 2016, vol.179, P.496–500.

19. Yu. Zorenko, E. Zych, V. Gorbenko, T. Zorenko, T. Voznyak, S. Nizankovskiy, Comparison of the luminescent properties $LuAG:Pr$ nanopowders, crystals and films using synchrotron radiation, 2016, submitted to Optical Material.

Doped by other ions

20. Yu. Zorenko, V. Gorbenko, T. Zorenko, Ya. Vasylykiv. Luminescent properties of the Sc^{3+} doped single crystalline films of $(Y,Lu,La)_3(Al,Ga)_5O_{12}$ multicomponent garnets, Optical Materials, 2014, V.36, P.1760-1764.

21. Zorenko Yu., Gorbenko V., Savchyn V., Zorenko T., Batentschuk M., Osvet A., Brabec C., Luminescent properties and energy transfer processes in $YAG:Er$ single crystalline films, Journal of Luminescence, 2014, V. 154, P. 198–203.

22. Yu. Zorenko, V. Gorbenko, V. Savchyn, A. Suchocki, H. Wrzesinski, K. Walczyk, K. Fabisiak, P. Bilski, A. Twardak, Luminescent and scintillation properties of $YAG:Tm$ and $YAG:Ce,Tm$ single crystalline films, Optical Materials, 2014, V.36, P.1685-1687.

23. Yu. Zorenko, V. Gorbenko, T. Zorenko, A. Banaszak, L. Mosińska, K. Paprocki, Ya. Zhydachevskii, A. Suchocki, P. Bilski, A. Twardak, A. Fedorov, Luminescent and scintillation properties of $YAG:Dy$ and $YAG:Dy,Ce$ single crystalline films, Radiation Measurements, 2016, vol. 90, P. 132-135.

24. Yu. Zorenko, V. Gorbenko, T. Zorenko, B. Kuklinski, M. Grinberg, K. Wiśniewski, P. Bilski, Luminescent properties of Mn-doped $Y_3Al_5O_{12}$ single crystalline films, Optical Materials, 2014, V.36, P.1680-1684.

25. Yu. Zorenko, V. Gorbenko V., T. Zorenko, K. Paprocki, A. Osvet, M. Batentschuk, C. Brabec, A. Fedorov, Enhancement of upconversion luminescence in Er,Ce doped $Y_{3-x}Yb_xAG$ single crystalline films, Journal of Luminescence, 2016, V.169, P.816–821.

26. Yu. Zorenko, T. Zorenko, V. Gorbenko, T. Voznyak, P. Popielarski, M. Batentschuk, A. Osvet, Ch. Brabec, V. Kolobanov, D. Spasky, A. Fedorov, Luminescent properties of $LuAG:Yb$ and $YAG:Yb$ single crystalline films grown by Liquid Phase Epitaxy method, Radiation Measurement, 2016, vol. 90, P.132-135.

Orthosilicates

27. Yu. Zorenko, V. Gorbenko, V. Savchyn, T. Zorenko, B. Grinyov, O. Sidletskiy, A. Fedorov, J.A. Mares, M. Nikl, M. Kucera, $\text{Lu}_2\text{SiO}_5:\text{Ce}$ and $\text{Y}_2\text{SiO}_5:\text{Ce}$ single crystals and single crystalline film scintillators: comparison of the luminescent and scintillation properties, *Radiation Measurements*, 2013, V. 56, P.85–89.
28. Yuriy Zorenko, Vitaliy Gorbenko, Volodymyr Savchyn, Tetyana Zorenko, Boris Grinyov, Oleg Sidletskiy, Alexander Fedorov, Growth and luminescent properties of Ce and Ce-Tb doped $(\text{Y,Lu,Gd})_2\text{SiO}_5:\text{Ce}$ single crystalline films, *Journal of Crystal Growth*, 2014, Vol. 401, P. 577–583.
29. P. Bilski, A. Twardak, Y. Zorenko, V. Gorbenko, E. Mandowska, A. Mandowski, O. Sidletskiy, Thermoluminescent properties of undoped and Ce-doped LSO and YSO single crystals and single crystalline films scintillators. *IEEE Transaction on Nuclear Science*, 2014, Vol.61, Is.1, P. 276 - 281.
30. Yu. Zorenko, V. Gorbenko, P. Bilski, A. Twardak, E. Mandowska, A. Mandowski, O. Sidletskiy, Comparative analysis of the scintillation and thermoluminescent properties of Ce-doped LSO and YSO crystals and films, *Optical Materials*, 2014, V.36, P.1715-1719.
31. Yu. Zorenko, V. Gorbenko, T. Zorenko, P. Malinowski, V. Jary, R. Kucerkova, A. Beitlerova, J.A. Mares, M. Nikl, A. Fedorov Luminescent and scintillation properties of Bi^{3+} doped Y_2SiO_5 and Lu_2SiO_5 single crystalline films. *Journal of Luminescence*, 2014, V.154, P. 525-530.
32. Yu. Zorenko, V. Gorbenko, T. Zorenko, T. Voznyak, A. Voloshynovskii, V.Vistovskiy, K. Paprocki, L. Mosińska, P. Bilski, A. Twardak, A. Fedorov, M. Nikl, J.A. Mares, Luminescent and scintillation properties of Sc^{3+} and La^{3+} doped Y_2SiO_5 powders and single crystalline films. *Journal of Luminescence*, 2016, vol.179, P. 445–450.

Perovskites

33. Paul-Antoine Douissard, Thierry Martin, Federica Riva, Eric Mathieu, Yuriy Zorenko, Volodymyr Savchyn, Tanya Zorenko, Alexander Fedorov, Scintillating screens for micro-imaging based on the Ce-Tb doped LuAP single crystal films, *IEEE Transaction on Nuclear Science*, 2014, Vol.61, Is.1, P. 433 - 438.
34. F. Riva, P.-A. Douissard, T. Martin, F. Carla, Y.V. Zorenko, C. Dujardin, Epitaxial growth of gadolinium and lutetium-based aluminum perovskites thin film for X-rays micro-imaging applications, *CrystEngComm*, 2016, V.18, P. 608–615.
35. Yu. Zorenko, V. Gorbenko, T. Zorenko, T. Voznyak, F. Riva, P.A. Douissard, T. Martin, A. Fedorov, A. Suchocki, Ya. Zhydachevski, Growth and luminescent properties of single crystalline films of Ce^{3+} doped $\text{Pr}_{1-x}\text{Lu}_x\text{AlO}_3$ and $\text{Gd}_{1-x}\text{Lu}_x\text{AlO}_3$ perovskites, *Journal of Crystal Growth*, 2016, doi:10.1016/j.jcrysgro.2016.02.020.
36. P. Arhipov, S. Tkachenko, Ia. Gerasymov, O. Sidletskiy, K. Hubenko, S. Vasyukov, N. Shiran, V. Baumer, P. Mateychenko, A. Fedorchenko, Yu. Zorenko, Ya. Zhydachewskii, K. Lebbou, M. Korjik, Growth and Characterization of Large CeAlO_3 Perovskite Crystals, *Journal of Crystal Growth*, 2015, V.430, P. 116–121.

Other oxide compounds

37. Yu. Zorenko, K. Fabisiak, T. Zorenko, A. Mandowski, Qi Xia, M. Batentschuk, J. Friedrich, G. Zhupkalieva, Comparative study of the luminescence of $\text{Al}_2\text{O}_3:\text{C}$ and Al_2O_3 crystals under VUV synchrotron radiation excitation, *Journal of Luminescence*, 2013, V. 144, P. 41-44.
38. Yu. Zorenko, T. Zorenko, V. Gorbenko, V. Savchyn, T. Voznyak, K. Fabisiak, A. Fedorov, G. Zhusupkalieva, Luminescent properties of $\text{Al}_2\text{O}_3:\text{Ce}$ single crystalline films under synchrotron radiation excitation, *Optical Materials*, 2016, V.59, P. 141-144.

39. A. Masalov, O. Viagin, P. Maksimchuk, V. Seminko, I. Bespalova, A. Aslanov, Yu. Malyukin, Yu. Zorenko. Formation of luminescent centers in CeO₂ nanocrystals. *Journal of Luminescence*, 2014, V. 145, P. 61-64.
40. O. Viagin, A. Masalov, I. Bespalova, O. Zelenskaya, V. Tarasov, V. Seminko, L. Voloshina, Yu. Zorenko, Yu. Malyukin, Luminescent properties of composite scintillators based on PPO and o-POPOP doped SiO₂ xerogel matrices, *Journal of Luminescence*, 2016, vol.179, P.178-182.

Chapter in monograph

M1 Svetlana Zazubovich, Aleksei Krasnikov, Yuriy Zorenko, Vitali Gorbenko, Vladimir Babin, Eva Mihokova, and Martin Nikl, Luminescence of Pb- and Bi-Related Centers in Aluminum Garnet, Perovskite, and Orthosilicate Single-Crystalline Films. In “Nanocomposite, Ceramic, and Thin Film Scintillators”, p. 227-287. Published by Pan Stanford Publishing Pte. Ltd.; Printed in the USA. ISBN 978-981-4745-22-2 (Hardcover); ISBN 978-981-4745-23-9 (eBook).

Conference type papers

K1 Zorenko, Yu. ; Gorbenko, V. ; Zorenko, T. ; Nikl, M. ; Mares, J. ; Beitlerova, A. ; Fedorov, A. ; Sidletskiy, O. Scintillating screens based on the single crystalline films of orthosilicates and multi-component garnets, International Conference on Oxide Materials for Electronic Engineering - Fabrication, Properties and Applications, OMEE 2014 - Book of Conference Proceedings, Page(s): 241–242.

K2 Zorenko, Yu.; Gorbenko, V.; Zorenko, T.; Mares, J.; Beitlerova, A.; Kucerkova, R.; Nikl, M.; Fedorov, A.; Vasyukiv, Y.; Fabisiak, K.; Matuszewski, K. Growth, luminescent properties and energy transfer processes in (Lu,Tb)₃Al₅O₁₂:Ce single crystalline films, International Conference on Oxide Materials for Electronic Engineering - Fabrication, Properties and Applications, OMEE 2014 - Book of Conference Proceedings, Page(s): 249 – 250.

K3 Zorenko, Yu.; Gorbenko, V.; Zorenko, T.; Vasyukiv, Ya.; Fabisiak, K. ; Wrzesinski, H.; Nikl, M.; Mares, J.; Beitlerova, A.; Kucerkova, R.; Fedorov, A. Growth and luminescent properties of (Tb,Gd)₃Al₅O₁₂:Ce single crystalline films, International Conference on Oxide Materials for Electronic Engineering - Fabrication, Properties and Applications, OMEE 2014 - Book of Conference Proceedings, Page(s): 149 – 150.

K4 Twardak, A.; Bilski, P. ; Zorenko, Yu. ; Gorbenko, V. ; Mandowska, E. ; Mandowski, A. Thermoluminescence properties of LSO:Ce and YSO:Ce films grown from PbO and Bi₂O₃ fluxes, International Conference on Oxide Materials for Electronic Engineering - Fabrication, Properties and Applications, OMEE 2014 - Book of Conference Proceedings, Page(s): 259 – 260.

K5 Zorenko, Y., Gorbenko, V., Zorenko, T., Savchyn, V., Voloshinovskii, A. Luminescent and scintillation properties of CaWO₄ and CaWO₄:Bi single crystalline films, 2014, International Conference on Oxide Materials for Electronic Engineering - Fabrication, Properties and Applications, OMEE 2014 - Book of Conference Proceedings, Page(s): 253 – 254.