CURRICULUM VITAE

Tolmachev Alexander

Affiliation and official address:

Deputy Director for Research of the Institute for Single Crystals NAS of Ukraine, Professor, Corresponding Member of NAS of Ukraine, Chief Research Scientist of Department of Crystalline Materials of Complex Compounds,
60 Nauky Ave, 61072, Kharkiv, Ukraine.
E-mail: alexander.tolmachev@isc.kharkov.ua;
alexander.v.tolmachev@gmail.com

Education (*degrees, dates, universities)*

1970 - Radiophysics Diploma (equivalent to MS), Kharkov State University, Kharkov, USSR
1978- Candidate of Sciences Degree (equivalent to PhD), Optics,
All-Union Research Institute for Optical and Physical Measurements, Moscow, USSR
1993 - Doctor of Sciences Degree (equivalent to Dr. habil.), Solid State Physics,
Institute of Physics NAS of Ukraine, Kiev, Ukraine
2003 - Professor, Solid State Physics, Ministry of Education and Science of Ukraine, Kyiv

Career/Employment (*employers, positions and dates)*

1970 – 1975 - Junior Research Scientist / Research Scientist / Senior Research Scientist,
Kharkov State University
1976 – 2018 - Leading Engineer / Senior Research Scientist / Leading Research Scientist /
Laboratory Head / Department Head, Institute for Single Crystals NAS of Ukraine
2018 – at present - Chief Research Scientist of Department of Crystalline Materials of Complex
Compounds, Institute for Single Crystals NAS of Ukraine
1995-1997, 2004 – at present - Deputy Director for Research of the Institute for Single Crystals
NAS of Ukraine

Honors, Awards

1996 – Ivan Frantsevich Personal Prize NAS of Ukraine in Materials Science (1996)
2006 - Corresponding Member of NAS of Ukraine (Materials Science)
2007 - State Prize of Ukraine in Science and Technology

Main field of activity and current research interest

Crystals and ceramics for optics and photonics: research and development

Professional publications (1970-2021) - 347, including 7 books, 315 articles, 25 patents.
Scopus *h*-index:19 (https://www.scopus.com/authid/detail.uri?authorId=57212090495)
https://orcid.org/0000-0001-6340-0122

Some selected publications of recent years:

1). R.P. Yavetskiy, S.V. Parkhomenko, I.O. Vorona, **A.V. Tolmachev**, D.Yu. Kosyanov, V.G. Kuryavyi, V.Yu. Mayorov, L. Gheorghe, G. Croitoru, M. Enculescu. Effect of green body annealing on laser

performance of YAG:Nd^{3+} ceramics // Ceramics International. – 2018. – V.44, No.4. – P.4529-4532. – 2019IF: 3.830. – https://doi.org/10.1016/j.ceramint.2017.11.192. Q1.

2). R.P. Yavetskiy, M.V. Dobrotvorskaya, A.G. Doroshenko, **A.V. Tolmachev**, I.A. Petrusha, V.Z. Turkevich, R. Tomala, D. Hreniak, W. Strek, V.N. Baumer. Fabrication and luminescent properties of $(Y_{0.99}Eu_{0.01})_2O_3$ transparent nanostructured ceramics // Optical Materials. – 2018. – V.78. – P.285-291. – 2019IF: 2.779. –https://doi.org/10.1016/j.optmat.2018.02.034. Q2.

3). R.P. Yavetskiy, A.G. Doroshenko, S.V. Parkhomenko, I.O. Vorona, **A.V. Tolmachev**, D.Yu. Kosyanov, A.A. Vornovskikh, A.M. Zakharenko, V.Yu. Mayorov, L. Gheorghe, G. Croitoru, N. Pavel, V.V. Multian, V.Ya. Gayvoronsky. Microstructure evolution during reactive sintering of $Y_3Al_5O_{12}$:Nd^{3+} transparent ceramics: influence of green body annealing // Journal of the European Ceramic Society. – 2019. – V.39, No.13. – P.3867-3875. – 2019IF: 4.495. – https://doi.org/10.1016/j.jeurceramsoc.2019.05.013. Q1.

4). S.V. Zaitsev, A.P. Kiselev, I.I. Zverkova, A.N. Yablonskiy, N.A. Matveevskaya, **A. V. Tolmachev**. Size-dependent luminescence kinetics of rare-earth Er^{3+} ions in Y_2O_3 nanospheres // Journal of Applied Physics. – 2019. – V. 125, No. 12. – P. 123102. – 2019IF: 2.425. – https://doi.org/10.1063/1.5081042. Q2

5). N.A. Safronova, O.S. Kryzhanovska, M.V. Dobrotvorska, A.E. Balabanov, **A.V. Tolmachev**, R.P. Yavetskiy, S.V. Parkhomenko, R. Brodskii, V.N. Baumer, D.Yu. Kosyanov, O.O. Shichalin, E.K. Papynov, Jiang Li. Influence of sintering temperature on structural and optical properties of Y_2O_3–MgO composite SPS ceramics // Ceramics International. – 2020. – V.46, No.5. – P.6537–6543. – 2019IF: 3.830. – https://doi.org/10.1016/j.ceramint.2019.11.137. Q1.

6). N.A. Safronova, R.P. Yavetskiy, O.S. Kryzhanovska, S.V. Parkhomenko, A.G. Doroshenko, M.V. Dobrotvorska, **A.V. Tolmachev**, R. Boulesteix, A. Maître, T. Zorenko, Yu. Zorenko. Fabrication and VUV luminescence of Lu_2O_3:Eu^{3+} (5 at.%) nanopowders and transparent ceramics // Optical Materials. – 2020. – V.101. – 109730 (7 pp.). – 2019IF: 2.779. – https://doi.org/10.1016/j.optmat.2020.109730. Q2.

7). A.G. Sivakov, R.P. Yavetskiy, N.A. Matveevskaya, T.G. Beynik, **A.V. Tolmachev**, S.I. Bondarenko, A.S. Pokhila, V.P. Koverya, A.S. Garbuz. Study of electrical conductivity of the coatings of bimetallic Au-Ag nanoparticles // Physica E: Low-dimensional Systems and Nanostructures. – 2020. – V.120. – 114091 (6 pp.). – 2019IF: 3.570. – https://doi.org/10.1016/j.physe.2020.114091. Q2.

8). R.P. Yavetskiy, A.E. Balabanov, S.V. Parkhomenko, O.S. Kryzhanovska, A.G. Doroshenko, P.V. Mateychenko, **A.V. Tolmachev**, Jiang Li, Nan Jiang, L. Gheorghe, M. Enculescu. Effect of starting materials and sintering temperature on microstructure and optical properties of Y_2O_3:Yb^{3+} 5 at.% transparent ceramics // Journal of Advanced Ceramics. – 2020. – V.10, No.1. – P.49-61. – 2019IF: 2.889. https://doi.org/10.1007/s40145-020-0416-3. Q2.

9). N.A. Safronova, R.P. Yavetskiy, O.S. Kryzhanovska, M.V. Dobrotvorska, A.E. Balabanov, I.O. Vorona, **A.V. Tolmachev**, V.N. Baumer, I. Matolínová, D.Yu. Kosyanov, O.O. Shichalin, E.K. Papynov, S. Hau, C. Gheorghe. A novel IR-transparent Ho^{3+}:Y_2O_3–MgO nanocomposite ceramics for potential laser applications // Ceramics International. – 2021. – V.47, No.1. – P.1399-1406. – 2019IF: 3.830. – https://doi.org/10.1016/j.ceramint.2020.08.263. Q1.

10). D.Yu. Kosyanov, A.A. Vornovskikh, A.M. Zakharenko, E.A. Gridasova, R.P. Yavetskiy, M.V. Dobrotvorskaya, **A.V. Tolmachev**, O.O. Shichalin, E.K. Papynov, A.Yu. Ustinov, V.G. Kuryavyi, A.A. Leonov, S.A. Tikhonov. Influence of sintering parameters on transparency of reactive SPSed Nd^{3+}:YAG ceramics // Optical Materials. – 2021. – V.112. – 110760 (9 pp.). – 2019IF: 2.779. – https://doi.org/10.1016/j.optmat.2020.110760. Q2.