

**Хронологичен списък на научните публикации на гл. ас. д-р Кръстьо Бучков**  
за участие в конкурс за доцент по професионално направление:

4.1. „Физически науки”, научна специалност „Физика на кондензираната материя”, ИФТТ-БАН, лаборатория „Физика на материалите и ниските температури.

\*Отбелязани са публикациите на които е базирана и докторската дисертация

\*Отбелязан е импакт фактор на научния журнал от годината на публикуване

1. E. Nazarova, A. Zaleski, A. Zahariev, **K. Buchkov**, “*Improvement of flux pinning by nanosized defects in  $Y_{0.8}Ca_{0.2}Ba_2Cu_3O_{7-\delta}$* ” **Nanoscience & Nanotechnology**, **8**, eds. E. Balabanova, I. Dragieva, Sofia, 158-161 (2008).
2. E. Nazarova, A. Zaleski, A. Zahariev, **K. Buchkov**, V. Kovachev, “*Implication for phase separation in an overdoped Y-Ca-Ba-Cu-O superconducting system*”, **Journal of Optoelectronics and Advanced Materials**, **11**, (2009), 1545. (IF: 0.43)  
(включена в дисертацията)
3. E. Nazarova, A. Zaleski, **K. Buchkov**, “*Doping dependence of irreversibility line in  $Y_{1-x}Ca_xBa_2Cu_3O_{7-\delta}$* ”, **Physica C: Superconductivity**, **470**, (2010), 421-427. (IF: 1.4)  
(включена в дисертацията)
4. E. Nazarova, K. Nenkov, **K. Buchkov**, A. Zahariev. “*Scaling behavior of current – voltage characteristics of  $Y_{1-x}Ca_xBa_2Cu_3O_7$* ”.  
“**THE OPEN SUPERCONDUCTORS JOURNAL**” **3**, 2011, 1-6.  
(включена в дисертацията)
5. E. NAZAROVA, **K. BUCHKOV**, A. ZAHARIEV, J. GEORGIEV, K. NENKOV, H. IGNATOV, V. KOVACHEV, E. BURZO, I. BALASZ, AC Magnetic Susceptibility Studies of Ag-Sheathed  $Y_{1-x}Ca_xBa_2Cu_3O_{7-d}$  Tapes ( $x = 0$  and  $0.3$ ), **Journal of Material Science and Technology**, 17(3), 2009,226
6. E. Nazarova, K. Nenkov, A. Zaleski, **K. Buchkov**, A. Zahariev, “*Investigations of the overdoped state in polycrystalline  $R_{1-x}Ca_xBa_2Cu_3O_{7-\delta}$  samples (R=Y, Gd, Er)*”,  
**Book chapter: “Superconductivity: Theory, Materials and Applications”**, Nova Publishers, USA, 2012, ISBN 978-1-61324-843-0.  
(включена в дисертацията)
7. **K. Buchkov**, K. Nenkov, A. Zaleski, E. Nazarova, M. Polichetti, “*Fundamental and 3rd harmonic AC magnetic susceptibility of over-doped polycrystalline  $Y_{1-x}Ca_xBa_2Cu_3O_{7-\delta}$  ( $x = 0.025$  and  $x = 0.20$ ) samples*”,  
**Physica C: Superconductivity**, **473**, (2012), 48-56. (IF: 0.7)  
(включена в дисертацията)

8. **K. Buchkov**, E. Nazarova, K. Gurova, A. Zahariev, H. Sechenski, K. Nenkov. "Reduction of YBCO melting temperature by simultaneous Ca substitution and Ag addition", **Optoelectronics and Advanced Materials, Rapid Communications** **6**, 11-12, 2012, 1061-1063. (IF: 0.4)
9. E. Nazarova, **K. Buchkov**, K. Nenkov, S. Terzieva. "Doping dependence of magnetoresistivity in polycrystalline Y(Ca)BCO", **Journal of Optoelectronics and Advanced Materials** **15**, (1-2), 2013, 66-68. (IF: 0.56)
10. N. Balchev, E. Nazarova, **K. Buchkov**, K. Nenkov, J. Pirov, B. Kunev, „Effect of Sn-doping on the superconducting properties of  $\text{HoBa}_2\text{Cu}_3\text{O}_{7-\delta}$ , obtained by the MTG method“, **Journal of Superconductivity and Novel Magnetism** **27**, (3), 2014, Pages 763-769 (IF: 0.9)
11. E. Nazarova, **K. Buchkov**, S. Terzieva, K. Nenkov, A. Zahariev, D. Kovacheva, N. Balchev, G. Fuchs, "The effect of Ag addition on the superconducting properties of  $\text{FeSe}_{0.94}$ ", **Journal of Superconductivity and Novel Magnetism**, **28** (3) 2014 1135-1138, (IF: 0.9)
12. Z. Cherkezova-Zheleva, K. Zaharieva, **K. Buchkov**, B. Blagoev, I. Mitov, "Effect of Mechanochemical Treatment on Magnetic Properties of Nanodimensional Magnetite-Type Materials", **Acta Physica Polonica A** **126**, (4), 2014 912-915 (IF: 0.53)
13. E. Nazarova, N. Balchev, K. Nenkov, **K. Buchkov**, D. Kovacheva, A. Zahariev and G. Fuchs "Transport and pinning properties of Ag-doped  $\text{FeSe}_{0.94}$ ", 2015 **Supercond. Sci. Technol.** **28**, 025013 (IF: 2.7)
14. **Buchkov K**, Polichetti M, Nenkov K, Nazarova E, Mancusi D, Balchev N, Kovacheva D, Zahariev A and Pace S 2015 „Investigation of the vortex dynamics of  $\text{Fe}_{1.02}\text{Se}$  crystals by fundamental and 3rd harmonic ac magnetic susceptibility analysis“ **Supercond. Sci. Technol.** **28** 035009 (IF: 2.7)
15. Galluzzi A, Polichetti M, **Buchkov K**, Nazarova E, Mancusi D and Pace S 2015 „Evaluation of the intragrain critical current density in a multidomain FeSe crystal by means of dc magnetic measurements“ **Supercond. Sci. Technol.** **28** 115005, (IF: 2.7)
16. Leo A, Grimaldi G, Guarino A, Avitabile F, Nigro A, Galluzzi A, Mancusi D, Polichetti M, Pace S, **Buchkov K**, Nazarova E, Kawale S, Bellingeri E and Ferdeghini C 2015 „Vortex pinning properties in Fe-chalcogenides“ **Supercond. Sci. Technol.** **28** 125001, (IF: 2.7)
17. Nazarova E, Balchev N, Nenkov K, **Buchkov K**, Kovacheva D, Zahariev A and Fuchs G 2015 „Improvement of the superconducting properties of polycrystalline FeSe by silver addition“ **Supercond. Sci. Technol.** **28** 125013, (IF: 2.7)

18. **Buchkov K**, Nazarova E, Balchev N, Gajda D, Nenkov K and Zahariev A 2016 Electro-transport studies of silver doped FeSe<sub>0.94</sub> superconducting system *9TH INTERNATIONAL PHYSICS CONFERENCE OF THE BALKAN PHYSICAL UNION (BPU-9)* vol . 1722 (AIP Publishing) p. 80002
19. Gajda G, Morawski A, Rogacki K, Cetner T, Zaleski A J, **Buchkov K**, Nazarova E, Balchev N, Hossain M S A, Diduszko R, Gruszka K, Przysławski P, Fajfrowski Ł, Gajda D, **2016** Ag-doped FeSe<sub>0.94</sub> polycrystalline samples obtained through hot isostatic pressing with improved grain connectivity *Supercond. Sci. Technol.* **29** 95002, (IF: 2.9)
20. A Galluzzi, M Polichetti, **K Buchkov**, E Nazarova, D Mancusi and S Pace, 2017 Critical current and flux dynamics in Agdoped FeSe superconductor, *Supercond. Sci. Technol.* **30** (2017) 025013 (9pp), (IF: 2.86)
21. T. Nurgaliev, B. Blagoev, **K. Buchkov**, E. Mateev, G. Gajda, I. Nedkov, D. Kovacheva, L. Slavov, I. Starbova, N. Starbov, M. Nankovski, Magnetron sputtering of Fe-oxides on the top of HTS YBCO films, *Journal of Magnetism and Magnetic Materials* **429**, 2017, **138–141**, (IF: 3)
22. V. Tomov, **K. Buchkov**, A. Galluzzi, M. Polichetti, K. Nenkov, S. Pace, **Multiferroic single crystals with layered structure in Pb-Mn-Ni-Ti-O system – growth and investigation of their properties**, Book chapter: “Concept, Property and Application of Micro/Nanostructured Materials”, Nova Publishers, USA, 2018, ISBN: 978-1-53613-608-1
23. A. Sedky, E. Nazarova, K. Nenkov, **K. Buchkov**, "A comparative Study between Electro and Magneto Excess Conductivities in FeTeSe Superconductors", *J Supercond Nov Magn* (2017) **30**: 2751 (IF : 1.1)
24. Nazarova E., Balchev N., **Buchkov K.**, Nenkov K., Kovacheva D., Gajda D., Fuchs G.. Superconducting and multiband effects in FeSe by Ag addition. High-Temperature Superconductors: Occurrence, Synthesis and Applications, ed. M. Kobliska, M. Miryala, **Nova Publishers, USA, 2018, ISBN: 978-1-53613-341-7**
25. Galluzzi A., **Buchkov K.**, Tomov V., Nazarova E., Leo A., Grimaldi G., Nigro A., Pace S., Polichetti M.. Evidence of pinning crossover and the role of twin boundaries in the peak effect in FeSeTe iron based superconductor. *Supercond. Sci. Technol.*, **31**, 1, **IOP Science**, 2018, DOI:<https://doi.org/10.1088/1361-6668/aa9802>, 015014. ISI (IF:2.8)
26. A. Galluzzi, **K. Buchkov**, V. Tomov, E. Nazarova, D. Kovacheva, A. Leo, G. Grimaldi, S. Pace, and M. Polichetti.. Mixed state properties of iron based Fe(Se,Te) superconductor fabricated by Bridgman and by self-flux methods, *Journal of Applied Physics* **123**, **233904** (2018), doi: 10.1063/1.5032202 (IF: 2.1)

**Участие с презентации на конференции и форуми:**

8-ма Конференция на Балканско физическо дружество – 2012, Констанца, Румъния  
*“Reduction of YBCO melting temperature by simultaneous Ca substitution and Ag addition”*  
(представен постер)

9-та Конференция на Балканско физическо дружество – 2015, Истанбул, Турция  
„Electro-transport studies of silver doped FeSe<sub>0.94</sub> superconducting system“  
(презентация)

Втори национален конгрес по физика, 2013, София, България  
„Изследване на свръхлегираното състояние в свръхпроводимата система Y(Ca)BCO“  
(презентация)