

CURRICULUM VITAE

Name Elena Nazarova
Place of Birth Kirilovo, Yambol district,
BULGARIA
Material Status Married with two children



1- University Degrees

1- M.Sc. in physics from Sofia University in 1975.

2 – Specialization on superconductivity – Sofia University and Institute of Solid State Physics, Bulgarian Academy of Sciences – 1976 - 1977

3- PhD in physics from Institute of Solid State Physics, Bulgarian Academy of Sciences in 1998.

PhD thesis: Preparation of high temperature superconducting thin films and polycrystalline samples and investigations of the weak links in them

4- Associate Prof. In 2001 till now.

2- Employment

Institute of Solid State Physics, Bulgarian Academy of Sciences – 1978 till now

Head of Low Temperature Physics Laboratory at the Institute of Solid State Physics, Bulgarian Academy of Sciences – 2008 till now

3 - Scientific Supervisions

1. Rumén Stoyanov, YBCO thin films preparation by Nd:YAG laser ablation, Sofia University, consultant

2. Georgy Gerassimov, Investigation of critical current density in HTS thin films by inductive measurements, Sofia University, 1999, supervisor
3. Evelina Georgieva, Synthesis and investigations of overdoped Y(Ca)BCO bulk samples, Sofia University, 2013, supervisor

Krastio Buchkov, Investigation of the overdoped state in superconducting Y(Ca)BCO system”, PhD thesis, Institute of Solid State Physics, Bulgarian Academy of Sciences, 2013, supervisor

4 - Leader of international projects

Interacademic cooperation:

1. Institute of low temperature and structure research, Polish Academy of Sciences-2008-2009
2. Babes-Bolyai University, Physics Faculty, Cluj Napoca, Romania, 2007-2009
3. University of Salerno, Physics Department, Salerno, Italy, 2013-2015

European project:

Euratom project, leader of co-contract project of Association Euratom INRNE – BG, 2010 – 2014

5 – International experience

International Laboratory of High Magnetic Fields and Low Temperatures, Wroclaw, Poland – many times

Leibniz Institute for Solid State and Materials Research, Dresden, Germany, 2004, 1 month

Institute of low temperature and structure research, Polish Academy of Sciences, 2008, 1 month

Leibniz Institute for Solid State and Materials Research, Dresden, Germany, 2013, 1 month

6 - Participation in Editorial Board and reviewing activity

Member of the Editorial Board of The Open Superconductors Journal -2009-2014
Reviewer in Physica C, The Open Superconductors Journal.

7 – More Important Published Papers

1. **E. Nazarova**, N. Balchev, K. Nenkov, K. Buchkov, D. Kovacheva, A. Zahariev, G. Fuchs, “Improvement of the superconducting properties of polycrystalline FeSe by silver addition”, Supercond. Sci. Technol. – accepted; arXiv:1510.02003
2. A Leo, G Grimaldi, A Guarino, F Avitabile, Angela Nigro, Armando Galluzzi, Davide Mancusi, Massimiliano Polichetti, Krastyo Buchkov, **Elena Nazarova**, Emilio Bellingeri, Carlo Ferdeghini, Vortex pinning properties in Fe-chalcogenides, Supercond. Sci. Technol., **28**, 12 (2015) 125001
3. A Galluzzi, M Polichetti, K Buchkov, **E Nazarova**, D Mancusi and S Pace, “Evaluation of the intragrain critical current density in a multidomain FeSe crystal by means of DC magnetic measurements”, Supercond. Sci. Technol., **28**, 11 (2015) 115005
4. K. Buchkov, M. Polichetti, K. Nenkov, **E. Nazarova**, D. Mancusi, N. Balchev, D. Kovacheva, A. Zahariev, S. Pace, “Vortex dynamics of Fe_{1.02}Se crystals by fundamental and 3-rd harmonic AC magnetic susceptibility analysis ”, Supercond. Sci. Technol. **28** (2015) 035009
5. **E. Nazarova**, N. Balchev, K. Nenkov, K. Buchkov, D. Kovacheva, A. Zahariev, G. Fuchs, “Transport and pinning properties of Ag-doped FeSe_{0.94}”, Supercond. Sci. Technol. **28** (2015) 025013, arXiv:1407.8472
6. **E. Nazarova**, K. Buchkov, S. Terzieva, K. Nenkov, A. Zahariev, D. Kovacheva, N. Balchev and G. Fuchs, The effect of Ag addition on the superconducting properties of the FeSe system, J. Supercond. Nov. Magn. **28** (2015) 1135 arXiv:1401.6296
7. N. Balchev, **E. Nazarova**, K. Buchkov, K. Nenkov, J. Pirov, B. Kunev, Effect of Sn-doping on the superconducting properties of HoBa₂Cu₃O_y, obtained by the MTG method, Journal of Superconductivity and Novel Magnetism, **27** (2014) 763
8. **E. Nazarova**, K. Buchkov, K. Nenkov, S. Terzieva, Doping Dependence of Magnetoresistivity in polycrystalline Y(Ca)BCO, J. Optoelect. Adv. Mater. **7** (2013) 69-71
9. K. Buchkov, **E. Nazarova**, K. Gurova, A. Zahariev, H. Sechenski, K. Nenkov, Reduction of YBCO melting temperature by simultaneous Ca substitution and Ag addition J. Optoelect. Adv. Mater. **6** (2012) 1061-1062
10. K. Buchkov, K. Nenkov, A. Zaleski, **E. Nazarova**, M. Polichetti, Fundamental and 3-rd harmonic AC magnetic susceptibility of overdoped polycrystalline Y_{1-x}Ca_xBa₂Cu₃O_{7-δ} (x=0.025 and x=0.20) samples, Physica C **473** (2012) 48-56

11. **E. Nazarova**, K. Nenkov, A. Zaleski, K. Buchkov, A. Zahariev, Chapter 5 of Book "Superconductivity: Theory, Materials and Applications"- ed. by V. Romanovskii, 2012, Nova Science Publishers, USA, pp.327-361
12. **E. Nazarova**, K. Nenkov, K. Buchkov, A. Zahariev, Scaling behavior of current-voltage characteristics of $Y_{1-x}Ca_xBa_2Cu_3O_{7-\delta}$ polycrystalline samples, *The Open Superconductors Journal*, 3 (2011) 1-6; arXiv:1012.5267
13. **E. Nazarova**, A. Zaleski, K. Buchkov, Doping dependence of irreversibility line in $Y_{1-x}Ca_xBa_2Cu_3O_{7-\delta}$, *Physica C* 470 (2010) 421-427
14. **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 $Y_{1-x}Ca_xBa_2Cu_3O_{7-\delta}$ tapes ($x=0$ and 0.3), *J. Mater. Sci. Technol.* V.17, N 3 (2009) 226-235
15. A. Zahariev, **E. Nazarova**, K. Nenkov, T. Mydlarz and V. Kovachev, Intragranular critical current density in YBCO substituted with Pr and Ca, *7th International Conference of the Balkan Physical Union*, edited by A. Angelopoulos and T. Fildisiz © 2009 American Institute of Physics 978-0-7354-0740-4/09/\$25.00, pp 367-372
16. **E. Nazarova**, A. Zaleski, A. Zahariev, K. Buchkov, V. Kovachev, Implication for phase separation in overdoped Y-Ca-Ba-Cu-O superconducting system, *J. of Optoelectr. & Adv. Matter.* V. 11, N 10 (2009) 1545-1548
17. **E. Nazarova**, A. Zaleski, K. Nenkov, A. Zahariev, Intergranular flux pinning in underdoped and overdoped $R_{1-x}Ca_xBa_2Cu_3O_z$ ($R=Y, Gd; x=0, 0.2$) samples *Physica C* 468/13 (2008) 955-960
18. **E. Nazarova**, A. Zaleski, A. Zahariev, K. Buchkov, Improvement of flux pinning by nanosized defects in $Y_{0.8}Ca_{0.2}Ba_2Cu_3O_z$ *Nanoscience & Nanotechnology*, 5, eds. E. Balabanova, I. Dragieva, Heron Press, Sofia, 2008
19. H. Ignatov, **E. Nazarova**, A. Zahariev, V. Lasarova, J. Georgiev, A. Stoyanova-Ivanova, S. Terzieva, K. Kliavkov, V. Kovachev, Deformation effects on the structure and properties of $Y_{1-x}Ca_xBa_2Cu_3O_{7-\delta}$ ($x=0; 0.3$) tapes produced by OPIT method in the Ag-tube, *J. of Superconductivity and Novel Magnetis.* V 21 (1) (2008) 69-73
20. **E. K. Nazarova**, K. A. Nenkov, Dating of lead artifacts based on its diamagnetic response in superconducting state, *Archaeologia Bulgarica*, v.XI, N3 (2007) 101-106
21. **E. Nazarova**, K. Nenkov, G. Fuchs, K.H. Muller, Effects of calcium substitution on the superconducting properties of $R_{1-x}Ca_xBa_2Cu_3O_z$ ($R=Eu, Gd, Er; 0 \leq x \leq 0.3$) polycrystalline samples, *Physica C* 436 (2006) 25-31 [http:// xxx.lanl.gov /cond-math/0601697](http://xxx.lanl.gov/cond-math/0601697)

22. **E. Nazarova**, K. Nenkov, A. Angelow, A. Zahariev, Effect of Silver Addition on the Superconducting Properties of $\text{LaBa}_2\text{Cu}_3\text{O}_{7-\delta}$ Oxides, J. of Optoelectr. & Adv. Matter., v.7, N1 (2005) 427
23. **E. Nazarova**, A. Zaleski, A. Zahariev, A. Stoyanova-Ivanova, K. Zalamova, Effects of substituting calcium for yttrium on the superconducting properties of $\text{YBa}_2\text{Cu}_3\text{O}_z$ bulk samples, Physica C 403 (2004) 283 – 289 [http:// xxx.lanl.gov /cond-mat/ 0401584](http://xxx.lanl.gov/cond-mat/0401584)
24. **E. Nazarova**, Beam Target Interaction during the Nd:YAG Laser Deposition of YBCO Thin Films, J. of Matt. Sci. & Thechnol., v.11, N 2 (2003) 41-49
25. **E. Nazarova**, A. Zahariev, A. Angelow, K. Nenkov, Proximity Effect in Bulk $\text{LaBa}_2\text{Cu}_3\text{O}_{(7-y)}$ Samples with Ag Additions, J. of Superconductivity, 13 (2000) pp.329-334; [http:// xxx.lanl.gov /cond-mat/ 0005140](http://xxx.lanl.gov/cond-mat/0005140)
26. **E. Nazarova**, A. Angelow, Determination of Critical Current Density in High Temperature Superconducting Thin Films in Case of Inductive Measurements, Cryogenics, v.38, N2 (1998)pp 177-180
27. V. Lovchinov, A. Stoyanova, E. Vlachov, D. Kovacheva, K. Petrov, H. Ignatov, **E. Nazarova**, I. Iordanov, P. Petkov, The effects of the deformation schedule and Te addition on the phase formation and microstructure of the (BiPb)(2223)Ag-sheated tapes J. of Matt. Sci. & Thechnol.,v.5, N1 (1997) pp.48-55
28. **E. Nazarova**, I. Iordanov, V. Lovchinov, D. Valkov, Complex Magnetic Susceptibility of Laser Ablated $\text{YBa}_2\text{Cu}_3\text{O}_{(7-x)}$ Thin films, J. of Matt. Sci. & Thechnol.,v.5, N2 (1997) pp.43-48
29. **E. Nazarova**, M. Kostova, A. Zahariev, I. Iordanov, Ag additions in $\text{LaBa}_2\text{Cu}_3\text{O}_{(7-y)}$, Cond. Matt. and Mater. Comm.,2 (1995) pp.31-38
30. D. Valkov, R. Stoyanov, **E. Nazarova**, V. Lovchinov and R. Gerasimov; Superconducting Thin Films of $\text{YBa}_2\text{Cu}_3\text{O}_{(7-x)}$ Produced by Nd:YAG Laser Ablation, Vacuum, Electron and Ion Technologies, ed. by D. Karpuzov, Nova Sci. Publisher, USA, (1993) p.259 - 273
31. D.Valkov, **E. Nazarova**, S. Savchenko, V. Lovchinov, R. Gerassimov, Y-Ba-Cu-O Thin Films Produced by Nd:YAG Laser Ablation, Materials Science and Engineering B14 (1992) pp 11-16
32. D. Kovacheva, K. Petrov, V. Lovchinov, **E. Nazarova**, P. Dochev, G. Melnikliev, V. Kovachev, Phase Formation and Superconductivity in Bi-Pb-Sr-Ca-Cu-O, Physica C, v.162-164, (1989) pp.1227-1228
33. V. T. Kovachev, K. A. Nenkov, V. A. Lovchinov, **E. K. Nazarova**, M. Bichkova, A. Korjov, AC Losses of NbN, Phys. St. Sol. (a), v. 91, (1985) pp. K151 - K154

34. V. T. Kovachev, **E. K. Nazarova**, Minimum in AC Losses of Low Bulk Pinning Nb₃Sn , Phys. St. Sol. (a), v. 71, (1982) pp.357-364

35. V. T. Kovachev, K. A. Nenkov, **E. K. Nazarova**, E. S. Vlahov, M. G. Mikhailov, Power Losses of Superconducting Nb in the Presence of AC and DC Magnetic Fields and DC Transport Current, Cryogenics, v. 25, N 4, (1985) pp.178-184

8 - Conference Reports

1. K. BUCHKOV, E. NAZAROVA, N. BALCHEV, D. GAJDA, K. NENKOV, A. ZAHARIEV, ELECTRO-TRANSPORT STUDIES OF SILVER DOPED FESE_{0.94} SUPERCONDUCTING SYSTEM, oral presentation at 9 General Conference of BPU, Istanbul, Turkey, 24-27 August 2015

2. ANTONIO LEO, ANITA GUARINO, GAIA GRIMALDI, MASSIMILIANO POLICHETTI, DAVIDE MANCUSI, ARMANDO GALLUZZI, KRASTYO BUCHKOV, **ELENA NAZAROVA**, ANGELA NIGRO AND SANDRO PACE, “ELECTRIC TRANSPORT AND MAGNETIC PROPERTIES OF HIGH QUALITY FESE CRYSTALS GROWN BY FLUX METHOD”, 79TH ANNUAL MEETING OF THE DPG AND DPG SPRING MEETING, BERLIN, 15 - 20 MARCH 2015

3. Antonio Leo, Anita Guarino, Gaia Grimaldi, Angela Nigro, Massimiliano Polichetti, Daniele Mancusi, Alberto Sala, Krastyo Buchkov, **Elena Nazarova**, Marina Putti, S. Pace, “Pinning Properties of Iron-Chalcogenide Compounds in Bulk Form”, presented at *Applied Superconductivity Conference*, 10 – 15 August 2014 in Charlotte, North Carolina, USA

4. **E. Nazarova**, K. Nenkov, M. Zlatkov, Dating of Lead Artifacts Based on Superconductivity , Fourth Balkan Symposium on Archaeometry, September 27-30, 2014, Nessebar, Bulgaria

5. **E. Nazarova**, K. Buchkov, S. Terzieva, K. Nenkov, A. Zahariev, D. Kovacheva , N. Balchev and G. Fuchs, The effect of Ag addition on the superconducting properties of FeSe_{0.94}, 4-th International Conference on Superconductivity and Magnetism, 27 April – 2 May 2014, Antalya, Turkey

6.K. Buchkov, **E. Nazarova**, K. Gurova, A. Zahariev, H. Sechenski and K. Nenkov, Reduction of YBCO Melting Temperature by Simultaneous Ca Substitution and Ag Addition, poster at 8 General Conference of BPU, Constanta, 5-7 July 2012

7. **E. Nazarova**, K. Buchkov, K. Nenkov, S. Terzieva, “Doping Dependence of Magnetoresistivity in polycrystalline Y(Ca)BCO”, oral presentation at 8 General Conference of BPU, Constanta, 5-7 July 2012

8. **E. Nazarova**- “Superconductors for fusion: materials investigations of overdoped Y(Ca)BCO system” –Meeting of Steering Committee on Euratom Association, Bulgaria, 16.03.2012, Sofia, Bulgaria – invited presentation

9. **E. Nazarova**, 3th Workshop (with international participation) Laser Diagnostics in Archaeology, 10-13 May 2011 Kardzhali, Bulgaria
“Dating of Lead Artifacts” – invited presentation

10. A. Zahariev, **E. Nazarova**, K. Nenkov, T. Mydlarz, V. Kovachev, 7th International Conference of the Balkan Physical Union, 9-13.09.2009, Alexandroupolis, Greece

11. **E. Nazarova**, K. Nenkov, A. Angelow, A. Zahariev, “Effect of Silver Addition on the Superconducting Properties of $\text{LaBa}_2\text{Cu}_3\text{O}_{7-\delta}$ Oxides”- 13th International School on Condensed Matter Physics, August 30th – September 3rd, 2004 Varna, Bulgaria

12. K. Zalamova, **E. Nazarova**, A. Zahariev, A. Stoyanova-Ivanova, H. Ignatov, “The influence of Ca substitution on the properties of YBCO bulk samples and technology of obtaining Ag- sheathed YBCO and YCaBCO tapes” 4th SCENET School on SUPERCONDUCTING MATERIALS AND APPLICATIONS, October 6-18, 2003, p.58, Cargese, France

13. A. Stoyanova-Ivanova, **E. Nazarova**, K. Zalamova, T. Nedeltcheva, L. Vladimirova, “The influence of Ca substitution on the oxygen content and carrier concentration in YBCO bulk samples” Fift General Conference of the Balkan Physical Union BPU-5, Book of Abstracts, SP06-066, Belgrade, 2003

14. **E. Nazarova**, K. Nenkov, V. Kovachev, “AC Harmonic Susceptibility in Doped Polycrystalline HTSC”, Joint Workshop on High-current Superconductors for Practical Application, June 8-10, 2001, Alpbach, Austria

15. **E. Nazarova**, A. Angelow, A. Zahariev, I. Iordanov, “Ag additions in $\text{LaBa}_2\text{Cu}_3\text{O}_{7-x}$ ”, NATO Advance Research Workshop, 21-27.07.1996, Strebske Pleso, Slovak Republic (Abstract book)

16. V. Lovchinov, A. Stoyanova, E. Vlahov, D. Kovacheva, K. Petrov, H. Ignatov, **E. Nazarova**, I. Iordanov, P. Petkov, TFD-15 physics Conference, 1995, Kas-Antalya, Turkey

17. **E. Nazarova**, I. Iordanov, V. Lovchinov, D. Valkov, “Complex susceptibility of laser ablated $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ thin films”, Ninth International School on Vacuum, Electron and Ion Technologies (VEIT’95) 14-18 Sept. 1995, Sozopol, Bulgaria

18. **E. Nazarova**, M. Kostova, V. Lovchinov, P. Simeonova
“Superconductivity in $\text{LaBa}_2\text{Cu}_3\text{O}_{7-x}$ ”, Second Bolkan Physical Union Conference, 12-14 Sept. 1994, Izmir, Turkey

19. D. Valkov, **E. Nazarova**, Workshop on Science and Technology of Thin Films
“Superconducting thin films of $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ produced by Nd:YAG laser ablation” 7-25 March 1994, Trieste, Italy

20. D. Valkov, **E. Nazarova**, Experimental Workshop on High Temperature Superconductors and Related Materials 11 Feb. – 1 March 1991, Trieste, Italy

21. D. Kovacheva, K. Petrov, V. Lovchinov, **E. Nazarova**, P. Dochev, G. Melnikliev, V. Kovachev, “Phase formation and superconductivity in Bi-Pb-Sr-Ca-Cu-O” International Conference “Materials and Mechanisms of Superconductivity”, 23-28 July 1989, Stanford University, Stanford, CA, USA