

Curriculum vitae:

Maja Buljan

Department of Material Science
Ruđer Bošković Institute
Bijenička cesta 54,
10000 Zagreb, Croatia
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Personal data:

First and last name: Maja Buljan
Date and place of birth: 13.10 1973. Bosnia and Herzegovina
Professional address: Ruđer Bošković Institute, Bijenička cesta 54, Zagreb, Croatia
Telephone: ++385 1 456 1173
Married, two children

Education:

-University of Zagreb, Croatia, PhD in Physics, July 2008: “*Structural properties of semiconductor nanocrystals in amorphous SiO₂ matrix*”, Supervisor: Dr. Sc. U.V. Desnica
-University of Zagreb, Croatia, Diploma in Physics, 2000: “*Investigation of structure of V(100)(5×1)-O and Ag/V(100)(5×1)-O by diffraction of low energy electrons*”. Supervisor: Dr. sc. P. Pervan
-1st Gymnasium, Secondary school, Sarajevo, Bosnia and Herzegovina, 1992.

Positions:

-Head of Laboratory for Thin Films, March 2016-...
-Research Assistant: Department of Material Physics, Ruđer Bošković Institute, Croatia May 2011-now
-Postdoctoral Fellow: Charles University in Prague, Czech Republic; 2008-2009
-Research Assistant: Department of Material Physics, Ruđer Bošković Institute, Croatia 2001-2011

Work (International) experience:

-Helmholtz-Zentrum Dresden-Rossendorf, Germany, invited scientist, July-August 2012
Helmholtz-Zentrum Dresden-Rossendorf, Germany, invited scientist, June- July 2011
-Technion, Israel Institute of Technology, Haifa, Israel, collaboration with Prof. R. Kalish in duration of 9 months during 2003 and 2004;
-Experimental measurements at synchrotron radiation sources: Participation in 26 experimental projects at synchrotrons: Elettra Trieste, Italy; Anka Karlsruhe, Germany and ESRF Grenoble, France.

Invited lectures:

9 invited lectures on international meetings, 8 invited seminars:

1. September 2015, “*Grazing-incidence small-angle X-ray scattering: application to the study of quantum dot lattices*”, GISAS2015, Nice, France. **Invited lecture.**
2. August 2015. „*Self-assembled quantum dots in glasses*“, Van der Waals-Zeeman Instituut, Amsterdam, Nizozemska, Invited seminar
3. November 2014. „*Nanonetworks of quantum dots in glasses*“, Massachusetts Institute of Technology-MIT, Laboratory for Nanophotonics and Electronics, Cambridge, USA , Invited seminar
4. October 2014, “*Self-assembly of quantum dots in glasses: design of amorphous materials by magnetron sputtering deposition*”, International Conference on Thin Films, Dubrovnik, Hrvatska. **Invited lecture.**

5. September 2013: Tutorial: "Grazing incidence small angle x-ray scattering-GISAXS" 9th Autumn School on X-ray Scattering from Surfaces and Thin films, Smolenice, Slovakia. **Invited (tutorial) lecture.**
6. September 2013: "Self-assembly of semiconductor quantum dots in amorphous dielectric matrix", JVC-19, Paris, France. **Invited lecture.**
7. January 2013: "Applications of materials based on self-assembled quantum dots in nanotechnology". Ruder Bošković Institute, Zagreb, Croatia. Invited seminar
8. September 2012 "Formation of three dimensional quantum dot lattices in amorphous systems" "EMRS Fall Meeting, Warsaw, Poland. **Invited lecture.**
9. Jun 2011; "Self-assembly of Ge nanoclusters in amorphous matrices", 18th International meeting: Vacuum Science and Technique, Bohinj, Slovenia. **Invited lecture.**
10. July 2011 "Preparation and characterization of self assembled quantum dots in amorphous matrices" Helmholtz-Zentrum Dresden Rossendorf, Germany. Invited Seminar.
11. July 2010; "Structural properties of semiconductor quantum dots" 17th International meeting: Vacuum Science and Technique, Tuhelj, Croatia, Jun 01 2010. **Invited lecture.**
12. Jun 2010; "Production and design of regularly ordered quantum dot lattices in amorphous matrices", 13th Joint Vacuum Conference, Štrbske Pleso, Slovačka, 20-24. Jun 2010. **Invited lecture.**
13. May 2010; "Application of Monte-Carlo method on simulations of the growth of Ge quantum dot lattices in amorphous matrices"; Workshop on Designing and applying computational tools for reliable prediction of metal oxide properties, Zagreb, Croatia. **Invited lecture.**
14. May 2009; "Formation of three-dimensional quantum dot lattices in amorphous systems" University of Minho, Braga, Portugal. Invited seminar.
15. November 2008; "Ge quantum dots in amorphous silica matrix: Determination of defects in crystal structure by using of Debye equation" Charles University in Prague, Czech Republic. Invited seminar.
16. November 2008; "Growth and characterization of Carbon nanoclusters in amorphous matrix" Forschungszentrum Dresden Rossendorff, Germany. Invited seminar.
17. August 2008; "Properties of Ge quantum dots in amorphous SiO₂ matrix" Charles University in Prague, Czech Republic. Invited seminar.

Papers, Conferences:

58 CC papers, 24 international conferences with oral or poster presentation; 8 Croatian meetings with oral or poster presentation.

Field of research:

- Investigation of self-assembly processes and physical properties of regularly ordered semiconductor quantum dots in amorphous matrices produced by magnetron sputtering and ion beam irradiation.
 - Usage of periodically corrugated-rippled surfaces for improvement and modulation of QD ordering in amorphous matrices.
- Monte-Carlo simulations of self-assembling processes: self-assembled growth and ion-beam induced self-assembly. Diffusion mediated nucleation. Interactions of ion beam with materials.
 - The influence of the spatial arrangement of quantum dots on the electrical and optical properties of quantum dot-containing material and the influence of the preparation methods on the crystalline quality of quantum dots.
- Development of theory and simulation programs for Grazing Incidence Small Angle X-ray Scattering (GISAXS) technique, which enables determination of QD shape, size, 3D arrangement and statistical distributions of those properties. Development of methods for description of XRD spectra from nanocrystals containing plane defects.
- Characterization methods: Grazing incidence small angle X-ray scattering (GISAXS), transmission electron microscopy, Raman spectroscopy, X-ray diffraction (XRD), Ultra-violet, visible and infrared spectroscopy.

Top 5 publications:

1. **M. Buljan**, N. Radić, J. Sancho-Paramon, V. Janicki, J. Grenzer, I. Bogdanović-Radović, Z. Siketić, M. Ivanda, A. Utrobičić, R. Hübner, R. Weidauer, V. Valeš, J. Endres, T. Car, M. Jerčinović, J. Roško, S. Bernstorff and V. Holy. *Production of three-dimensional quantum dot lattice of Ge/Si core-shell quantum dots and Si/Ge layers in an alumina glass matrix*. Nanotechnology 26 065602 (2015).
2. **M. Buljan**, S. Facksko, I. Delač Marion, V. Mikšić Trontl, M. Kralj, M. Jerčinović, C. Baehtz, A. Muecklich, V. Holý, N. Radić, and J. Grenzer, *Self-assembly of Ge quantum dots on periodically corrugated Si surfaces*. Appl. Phys. Lett. 107, 203101 (2015).
3. **M. Buljan**, N. Radić, S. Bernstorff, G. Dražić, I. Bogdanović-Radović, V. Holý, "Grazing incidence small angle x-ray scattering: application in study of quantum dot lattices", Acta Cryst. A, 68 124 (2012).
4. **M. Buljan**, I. Bogdanović-Radović, M. Karlušić, K. Salamon, G. Dražić, U.V. Desnica, N. Radić, S. Bernstorff, M. Jakšić and V. Holý, "Design of quantum dot lattices in amorphous matrices by ion beam irradiation", Phys. Rev. B **84** 15531 (2011)
5. **M. Buljan**, U.V. Desnica, G. Dražić, M. Ivanda, N. Radić, P. Dubček, K. Salamon, S. Bernstorff, V. Holý; "Formation of three-dimensional quantum dot superlattices in amorphous systems: Experiments and Monte Carlo simulations" Phys. Rev. B **79**, 035310 (2009). (Selected for publication in Virtual Journal of Nanoscience and Nanotechnology, 19, issue 4, 2009).

International collaborations (last three years):

1. Prof. S. Gradečak, MIT, Boston, USA
2. Prof. Dr. V. Holy, Charles University in Prague, Czech Republic, (11 common papers).
3. Dr. J. Grenzer, Helmholtz-Zentrum Dresden-Rossendorf, Germany, (4 common papers).
4. Dr. A.G. Rolo, Dr. M. J.M. Gomes, Dr. J. Martin Sanchez, Dr. S.R.C. Pinto, Dr. S. Levichev, E. Viera, University of Minho, Portugal (7 common papers).
5. Dr. G. Dražić, Jožef Stefan Institute, Slovenia (7 common papers).
6. Dr. S. Bernstorff, Sincrotrone Trieste, Italy (13 common papers).
7. Prof. R. Kalish, Dr. C. Seguy, TECHNION-Israel institute of Technology, Israel, (2 common papers).
8. Dr. G. Abrasonis, Helmholtz-Zentrum Dresden-Rossendorf, Germany (1 paper accepted).
9. Dr. S. Facksko Helmholtz-Zentrum Dresden-Rossendorf, Germany (1 paper in preparation).

Teaching:

2007-2011; Statistics and Basic measurements; undergraduate/graduate

2007-2014; Introductory Laboratory Exercises in Physics 1; undergraduate/graduate

2007-2008; Introductory Laboratory Exercises in Physics 2; undergraduate/graduate

2007- 2008; Laboratory Exercises in Solid State Physics; undergraduate/graduate

Organization of meetings and conferences:

-2014; 16th international conference on thin films- ICTF. Dubrovnik, Croatia. Organizer.

-2014; 15th joint vacuum conference, Vienna, Austria. Organizer.

-2013; 20th meeting: Vacuum science and technology, Jerusalem, Slovenia, Organizer.

-2012; ASON-2, Adriatic school on Nanoscience. Dubrovnik, Croatia, Organizer

- 2012; 14th joint vacuum conference, Dubrovnik, Croatia, 2012, Organizer

- 2010; 41. International Physics Olympiad, Physics, Zagreb, Croatia, 2010, Reviewer

List of publications:

2015:

1. **M. Buljan**, N. Radić, J. Sancho-Paramon, V. Janicki, J. Grenzer, I. Bogdanović-Radović, Z. Siketić, M. Ivanda, A. Utrobičić, R. Hübner, R. Weidauer, V. Valeš, J. Endres, T. Car, M.

Jerčinović, J. Roško, S. Bernstorff and V. Holy. *Production of three-dimensional quantum dot lattice of Ge/Si core-shell quantum dots and Si/Ge layers in an alumina glass matrix*. Nanotechnology 26 065602 (2015).

2. **M. Buljan**, S. Facsko, I. Delač Marion, V. Mikšić Trontl, M. Kralj, M. Jerčinović, C. Baehtz, A. Muecklich, V. Holý, N. Radić, and J. Grenzer, Self-assembly of Ge quantum dots on periodically corrugated Si surfaces. Appl. Phys. Lett. 107, 203101 (2015).
3. M. Karlusic, R. Kozubek, H. Lebius, B. Ban-d'Etat, B R. A. Wilhelm, **M. Buljan**, Z. Siketic, F. Scholz, T. Meisch, M. Jaksic, S. Bernstorff, M. Schleberger, B. Santic, *Response of GaN to energetic ion irradiation: conditions for ion track formation*. J. Appl. Phys. D 48, 325304 (2015)

2014:

4. M. Krause, **M. Buljan**, A. Muecklich, W. Moeller, M. Fritzsche, S. Facsko, R. Heller, M. Zschornak, S. Wintz, J. L. Endrino, C. Baehtz, A. Shalimov, S. Gemming, and G. Abrasonis. *Compositionally modulated ripples during composite film growth: Three-dimensional pattern formation at the nanoscale* Phys. Rev. B **89**, 085418 (2014).
5. V. Vales, **M. Buljan**, V. Janicki, S. Bernstorff, S. Mangold, Z. Siketic, O. Schneeweiss, V. Holy, Fe₂O₃/TiO₂ nanoparticles-a complex structural study. Thin Solid Films **564**, 65-72 (2014)
6. J. Borges, **M. Buljan**, J. Sancho-Parramon, I. Bogdanovic-Radovic, Z. Siketic, T. Scherer, C. Kubel, S. Bernstorff, A. Cavaleiro, F. Vaz, A. G. Rolo, *Evolution of the surface plasmon resonance of Au:TiO₂ nanocomposite thin films with annealing temperature*. J. Nanoprt. Res. 16, 2760 (2014)
7. M. Jerčinović, N. Radić, **M. Buljan**, J. Grenzer, I. Delač-Marion, M. Kralj, I. Bogdanović-Radović, R. Huebner, P. Dubček, K. Salamon, S. Bernstorff. *Self-assembled growth of Ni nanoparticles in amorphous alumina matrix*. J. Nanopart Res. 16, 2296 (2014).
8. Sekhar, KC; S. Levichev, **M. Buljan**, S. Bernstorff, K. Kamakshi, A. Chahboun, A. Almeida, J.A. Moreira, M. Pereira, M.J.M. Gomes, *Effect of bi-layer ratio in ZnO/Al₂O₃ multilayers on microstructure and functional properties of ZnO nanocrystals embedded in Al₂O₃ matrix*, Appl. Phys. A, 115, 283-289 (2014).
9. M. Mozetič, K Ostrikov D. N. Ruzic, D. Curreli, U. Cvelbar, A. Vesel, G. Primc, M. Leisch, K. Jousten, O. B. Malyshev, J. H. Hendricks, L. Koeber, A. Tagliaferro, O. Conde, A. J. Silvestre, J. Giapintzakis, **M. Buljan**, N. Radić, G. Dražić, S. Bernstorff, H. Biederman, O. Kyli'an, J. Hanuš, S. Milošević, A. Galtayries, P. Dietrich, W. Unger, M. Lehocky, V. Sedlarik, K. Stana-Kleinschek, A. Drmota-Petrič, J. J. Pireaux, J. W. Rogers, M. Anderle. *Recent advances in vacuum sciences and applications. Topical Review*. J. Phys. D: Appl. Phys. **47** 153001 (2014).

2013

10. **M. Buljan**, M. Jerčinović, Z. Siketić, I. Bogdanović-Radović, I. Delač, M. Kralj, M. Ivanda, A. Turković, G. Dražić, S. Bernstorff, N. Radić, Tuning the growth properties of Ge quantum dot lattices in amorphous oxides by matrix type J. Appl. Cryst. 46, 1490-1500 (2013).
11. S. Bernstorff, V. Holy, J. Endres, V. Vales, J. Sobota, Z. Siketic, I. Bogdanovic-Radovic, **M. Buljan**, G. Dražić, *Co nanocrystals in amorphous multilayers - a structure study*, J. Appl. Cryst. 46, 1711-1721 (2013).

12. E. Viera, S. Levichev, C. J. Dias, R. Igreja, **M. Buljan**, S. Bernstorff, O. Conde, A. Chahboun, A. G. Rolo, and M. J.M. Gomes. *Eur. Phys. J. B.* 86, 336 (2013)
13. M. Karlušić, M. Jakšić, **M. Buljan**, J. Sancho-Parramon, I. Bogdanović-Radović, N. Radić, S. Bernstorff “*Materials modification using ions with energies below 1 MeV/u*“. *Nucl. Insrt. Meth.* In print, (2013)
14. A. Turković, P. Dubček, K. Juračić, S. Bernstorff, **M. Buljan**, „*Study of polymer electrolyte for Zn rechargeable nanostructured galvanic cells via combined in situ SAXS/DSC/WAXD measurements*“, *American Journal of Nanoscience and Nanotechnology*; 1(1), 6-10, (2013)
15. S. Haviar, M. Dubau, I. Khalakhan, M. Vorokhta, I. Matolinova, V. Matolin, V. Valeš, J. Endres, V. Holy, **M. Buljan**, and S. Bernstorff „*X-ray small-angle scattering from sputtered CeO₂/C bilayers*“, *J. Appl. Phys.* 113, 024301 (2013)
16. **M. Buljan**, N. Radić, I. Bogdanović-Radović, Z. Siketić, K. Salamon, M. Jerčinović, M. Ivanda, G. Dražić, S. Bernstorff “*Influence of annealing conditions on the structural and photoluminescence properties of Ge quantum dot lattices in a continuous Ge+Al₂O₃ film*” *Phys. Status Solidi A* (2013).
17. **M. Buljan**, O. Roshchupkina, A. Šantić, C-. Baetz, A. Muecklich, L. Horak, V. Vales, N. Radić, S. Bernstorff, and Joerg Grenzer, „*Growth of a three-dimensional anisotropic lattice of Ge quantum dots in an amorphous alumina matrix*“, *J. Appl. Cryst.* 46, 709-715, (2013)
18. **M. Buljan**, N. Radić, M. Ivanda, I. Bogdanović-Radović, M. Karlušić J. Grenzer, S. Prucnal, G. Dražić, G. Pletikapić, V. Svetličić, M. Jerčinović, S. Bernstorff Sigrid, V. Holy. “*Ge quantum dot lattices in Al₂O₃ multilayers*”. *J. Nanoparticle Res.* **15**, 1485 (2013)
19. E. M. F. Vieira, J. Martín-Sánchez, M. A. Roldan, M. Varela, **M. Buljan**, S. Bernstorff, N. P. Barradas, N. Franco, M. R. Correia, A. G. Rolo, S. J. Pennycook, S. I. Molina, E. Alves, A. Chahboun, and M. J. M. Gomes, “*Influence of RF-sputtering power on formation of vertically stacked Si_{1-x}Ge_x nanocrystals between ultra-thin amorphous Al₂O₃ layers: structural and photoluminescence properties*”. *J. Phys. D: Appl. Phys.* **46**, 385301 (2013).

2012

20. I. Bogdanović-Radović, **M. Buljan**, M. Karlušić, N. Skukan, I. Božičević, M. Jakšić, G. Dražić and S. Bernstorff, “*Ordering of germanium quantum dots in amorphous matrices by MeV ion beams – Comparison with standard thermal annealing*”, *Phys. Rev. B.* 86 165316 (2012)
21. S. R. C. Pinto, **M. Buljan**, L. Marques, J. Martín-Sánchez, O. Conde, A. Chahboun, A. R. Ramos, N. P. Barradas, E. Alves, S. Bernstorff, J. Grenzer, A. Muecklich, M. M. D. Ramos, M. J. M. Gomes, *Influence of annealing conditions on formation of regular lattices of voids and Ge quantum dots in amorphous alumina matrix*, *Nanotechnology* **23**, 405605 (2012)
22. **M. Buljan**, M. Karlušić, I. Bogdanović-Radović, M. Jakšić, K. Salamon, S. Bernstorff, N. Radić, “*Determination of ion track radii in amorphous matrices formation of nano-clusters by ion-beam irradiation*”, *Appl. Phys. Lett.* **101**, 103112 (2012)
23. E. M. F. Vieira, J. Martín-Sánchez, A. G. Rolo, A. Parisini, **M. Buljan**, I. Capan, E. Alves, N. P. Barradas, O. Conde, S. Bernstorff, A. Chahboun, S. Levichev, and M. J. M. Gomes “*Structural and electrical studies of ultrathin layers with Si_{0.7}Ge_{0.3} nanocrystals confined in a SiGe/SiO₂ superlattice*”, *J. Appl. Phys.* **111**, 104323 (2012)
24. **M. Buljan**, U. V. Desnica, I. Bogdanović-Radović, N. Radić, M. Ivanda, G. Dražić, S. Bernstorff, V. Holy. *Preparation of regularly ordered Ge quantum dot lattices in amorphous matrices.* *Vacuum.* **86**, 733-736 (2012)
25. S. R. C. Pinto, **M. Buljan**, A. Chahboun, M. A. Roldan, S. Bernstorff, M. Varela, S. J. Pennycook, N. P. Barradas, E. Alves, S. I. Molina, M. M. D. Ramos, and M. J. M. Gomes, “*Tuning the properties of Ge-quantum dots superlattices in amorphous silica matrix through deposition conditions*” *J. Appl. Phys.* **111**, 074316 (2012)
26. **M. Buljan**, N. Radić, S. Bernstorff, G. Dražić, I. Bogdanović-Radović, V. Holy, “*Grazing incidence small angle x-ray scattering: application in study of quantum dot lattices*”, *Acta Cryst. A*, **68**, 124 (2012).
27. V. Valeš, V. Holy, **M. Buljan**, V. Janicki, S. Bernstorff. *Structural and morphological*

properties of Fe₂O₃/TiO₂ nanocrystals in silica matrix. Thin Solid Films. **520**, 4800, (2012)

2011

28. **M. Buljan**, I. Bogdanović-Radović, M. Karlušić, K. Salamon, G. Dražić, U.V. Desnica, N. Radić, S. Bernstorff, M. Jakšić and V. Holý, “*Design of quantum dot lattices in amorphous matrices by ion beam irradiation*”, Phys. Rev. B **84**, (2011) 15531
29. D. Ristić, V. Holý, M. Ivanda, M. Marciuš, **M. Buljan**, O. Gamulin, K. Furić, M. Ristić, S. Musić, M. Mazzola, A. Chiasera, M. Ferrari and G.C. Righini, “*Surface characterization of thin silicon-rich oxide films*”; J. Mol. Structure 993 214-218 (2011).
30. V. Janicki, J. Sancho-Parramon, H. Zorc, K. Salamon, **M. Buljan**, N. Radić, U. Desnica, “*Ellipsometric study of thermally induced redistribution and crystallization of Ge in Ge:SiO₂ mixture layers*”; Thin Solid Films **519** (16) 5419-5423 (2011)
31. V. Holy, **M. Buljan**, R. Lechner. “*X-ray characterization of semiconductor nanostructures*”. Semiconductor science and technology. **26** (2011), 6; 064002 .
32. E.M.F. Viera.; S. R. C. Pinto, S. Levichev, A. G. Rolo, A. Chahboun **M. Buljan**, N. P. Barradas, E. Alves, S. Bernstorff, O. Conde, M. J. M. Gomes. “*Influence of the deposition parameters on the growth of SiGe nanocrystals embedded in Al₂O₃ matrix*. Microelectronic engineering. **88** (2011) ; 509-5013
33. S.R.C. Pinto, A. G. Rolo, **M. Buljan**, A. Chahboun, S. Bernstorff, N. P. Barradas, E. Alves, R. J. Kashtiban, U. Bangert, M.J.M. Gomes. “*Low-temperature fabrication of layered self-organized Ge clusters by RF sputtering*”, Nanoscale Research Letters **6** (2011) 341.

2010:

34. **M. Buljan**, S.R.C. Pinto, A.G. Rolo, J. Martin Sanchez, M.J.M. Gomes, A. Mücklich, S. Bernstorff, V. Holy; “*Self-assembling of Ge quantum dots in an alumina matrix*”, Phys. Rev. B **82** 235407 (2010). (selected for publication in Virtual Journal of Nanoscience and Nanotechnology, 22, issue 25, 2010).
35. **M. Buljan**, J. Grenzer, V. Holý, N. Radić, T. Mišić-Radić, S. Levichev, S. Bernstorff, B. Pivac, I. Capan, “*Structural and charge trapping properties of two bi-layer (Ge+SiO₂)/SiO₂ films deposited on rippled substrate*”; Appl. Phys. Lett. **97**, 163117 (2010).
36. S. R. C. Pinto, A. G. Rolo, M. J. M. Gomes, M. Ivanda, I. Bogdanović-Radović, J. Grenzer, A. Mücklich, D. Barber, S. Bernstorff, **M. Buljan**; “*Formation of void lattice after annealing of Ge quantum dot lattice in alumina matrix*” Appl. Phys. Lett. **97** 173113, (2010).
37. **M. Buljan**, J. Grenzer, A. Keller, N. Radić, V. Valeš, S. Bernstorff, T. Cornelius, H. T. Metzger, V. Holý; “*Growth of spatially ordered Ge nanoclusters in an amorphous matrix on rippled substrate*” Phys. Rev. B **82**, 125316 (2010).
38. S. R. C. Pinto, R. J. Kashtiban, A. G. Rolo, **M. Buljan**, A. Chahboun, U. Bangert, N. P. Barradas, E. Alves and M. J. M. Gomes; “*Structural study of Si_xGe_{1-x} nanocrystals embedded in SiO₂ films*”, Thin Solid Films **518**, 2569 (2010).
39. S.R.C. Pinto, A.G. Rolo, A. Chahboun, **M. Buljan**, A. Khodorov, R.J. Kashtiban, U. Bangert, N.P. Barradas, E. Alves, S. Bernstorff, M.J.M. Gomes, Microelectron. Eng. **87**, 2508 (2010).
40. **M. Buljan**, I. Bogdanović-Radović, M. Karlušić, U.V. Desnica, N. Radić, N. Skukan, G. Dražić, M. Ivanda, Z. Matej, V. Valeš, J. Grenzer, T. Cornelius, H. T. Metzger, V. Holý; “*Generation of an ordered Ge quantum dot array in an amorphous silica matrix by ion beam irradiation: Modeling and structural characterization*”, Phys. Rev. B **81** 085321 (2010).

2009:

41. **M. Buljan**, S. R. C. Pinto, R. J. Kashtiban, A. G. Rolo, A. Chahboun, U. Bangert, S. Levichev, V. Holý, and M. J. M. Gomes; “*Size and Spatial homogeneity of SiGe quantum dots in amorphous silica matrix*”, J. Appl. Phys. **106**, 084319(2009).
42. **M. Buljan**, I. Bogdanović-Radović, M. Karlušić, U.V. Desnica, G. Dražić, N. Radić, P. Dubček, K. Salamon, S. Bernstorff, V. Holý; “*Formation of long range ordered quantum dots arrays in amorphous matrix by ion beam irradiation*”, Appl. Phys. Lett. **95**, 063104 (2009).

43. **M. Buljan**, U.V. Desnica, G. Dražić, N. Radić, Z. Matej, V. Valeš, V. Holý; “ *Crystal structure of defect-containing semiconductor nanocrystals- an X-ray diffraction study*“, J. Appl. Cryst. **42**, 1 (2009).
44. **M. Buljan**, U.V. Desnica, G. Dražić, M. Ivanda, N. Radić, P. Dubček, K. Salamon, S. Bernstorff, V. Holý; “ *The influence of deposition temperature on the correlation of Ge quantum dots positions in amorphous silica matrix*“, Nanotechnology **20**, 085612 (2009).
45. **M. Buljan**, U.V. Desnica, G. Dražić, M. Ivanda, N. Radić, P. Dubček, K. Salamon, S. Bernstorff, V. Holý; “ *Formation of three-dimensional quantum dot superlattices in amorphous systems: Experiments and Monte Carlo simulations*“, Phys. Rev. B **79**, 035310 (2009).
46. K. Salamon, O. Milat, **M. Buljan**, U.V. Desnica, N. Radić, P. Dubček, S. Bernstorff; “ *Grazing incidence X-ray study of Ge nanoparticle formation in (Ge:SiO₂)/SiO₂ multilayers*“, Thin Solid Films, **517**, 1899 (2009).

2008:

47. M. Ivanda, K. Furić, U. Desnica, **M. Buljan**, M. Montagna, M. Ferrari, A. Chiasera, Y. Jestin; “ *Raman scattering on quadrupolar vibrational modes of spherical nanoparticles*“, J. Appl. Phys. **104**, 073519 (2008).
48. **M. Buljan**, C. Saguy, I. Bogdanović-Radović, U.V. Desnica, M. Ivanda, I. Djerdj, A. Tonejc, O. Gamulin, M. Jakšić, R. Kalish; “ *Implantation conditions for diamond nanocrystals formation in amorphous silica*“, J. Appl. Phys. **104**, 034315 (2008).
49. I. D. Desnica Franković, K. Furić, U. V. Desnica, P. Dubček, **M. Buljan**, S. Bernstorff; “ *Complementary application of Raman scattering and GISAXS in characterization of embedded semiconductor QDs*“, Superlattices and Microstructures **44**, 385-394 (2008).
50. U.V. Desnica, K. Salamon, **M. Buljan**, P. Dubček, N. Radić, I. D. Desnica-Franković, Z. Siketić, I. Bogdanović-Radović, M. Ivanda, S. Bernstorff; “ *Formation of Ge-nanocrystals in SiO₂ matrix by magnetron sputtering and post-deposition thermal treatment*“. Superlattices and Microstructures **44**, 323-330 (2008).

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