

Curriculum vitae of Dr. Nebojša Nešković

I. Personal data

1. Name: **Nebojša**
2. Surname: **Nešković**
3. Date of birth: November 10, 1949
4. Place of birth: Belgrade, Serbia
5. Home address: Molerova 11, 11000 Belgrade, Serbia; phone: +381-11-308-9098
6. Languages: Serbian and English
7. Profession: Scientist
8. Degree: PhD
9. Title: Principal Research Fellow (Full Professor)
10. Official address: Laboratory of Physics (010), Vinča Institute of Nuclear Sciences, P. O. Box 522, 11001 Belgrade, Serbia; phone: +381-11-244-7700 or 245-4965, fax: +381-11-244-7963, mobile phone: +381-63-24-38-24, e-mail: nnesko@vinca.rs, internet: <http://www.vinca-at.org>

II. Education

1. Faculty of Electrical Engineering, University of Belgrade, Belgrade, Serbia, 1968-1974, BSc
2. Faculty of Physics, University of Belgrade, Belgrade, Serbia, 1975-1982, PhD
3. Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA, 1982-1984, post-doctoral study
4. Institut des Hautes Etudes Scientifiques, Bures-sur-Yvette, France, 1990, study stay

III. Research activities

1. 1974-1976: Scattering of electromagnetic waves by moving media
2. 1975-1978: Phase transitions in solids
3. 1979-1983: Scattering of low energy ions from solid surfaces
4. 1981-1982: Design and construction of electron cyclotron resonance ion sources
5. 1982-2012 and forth: Interaction of high energy ions with solids
6. 1991-2012 and forth: Accelerator physics and technologies

IV. Academic activities

1. S. Petrović, MSc thesis, mentor, 1993
2. L. Miletić, MSc thesis, mentor, 1998
3. S. Korica, MSc thesis, co-mentor, 2001
4. D. Borka, MSc thesis, co-mentor, 2002
5. S. Petrović, PhD thesis, mentor, 1997
6. D. Borka, PhD thesis, co-mentor, 2006

V. Official functions

1. Laboratory of Physics, Vinča Institute of Nuclear Sciences, Belgrade, Serbia, Director, 1992-2001
2. Laboratory of Physics, Vinča Institute of Nuclear Sciences, Belgrade, Serbia, Associate Director, Deputy Director, Associate Director for Science or Scientific Leader, 2001-2012 and forth
3. Vinča Institute of Nuclear Sciences, Belgrade, Serbia, Associate Director, 1999-2001
4. TESLA Project – the project of construction and use of the TESLA Accelerator Installation, consisting of a medium-sized cyclotron, four ion sources and a number of experimental channels, to be used for basic and applied research in physics, chemistry and biology, development of materials and nuclear technologies, production of radionuclides and radiopharmaceuticals, and proton therapy, Head, 1991-2007
5. TESLA Scientific Center – an association of 15 scientific and educational institutions from South Eastern and Central Europe, Director, 1996-2006

VI. Memberships

1. Member of the Serbian Physical Society, Belgrade, Serbia
2. Member of the Nuclear Society of Serbia, Belgrade, Serbia
3. Fellow and Chair of the Nominations Committee of the World Academy of Art and Science, Napa, California, USA

VII. Organization of scientific conferences

1. Organizing Committee of the *Workshop on Rainbow Scattering*, August 1989, Cavtat, Yugoslavia, Chairman
2. Organizing Committee of the *First TESLA Workshop: Modification of Materials by Ion Beams*, April 1997, Belgrade, Yugoslavia, Chairman
3. Organizing Committee of the *Second TESLA Workshop: Nuclear Reaction with Heavy Ions*, October 1997, Belgrade, Yugoslavia, Chairman
4. Organizing Committee of the *Third TESLA Workshop: Radiation Research with Ion Beams*, April 1998, Belgrade, Yugoslavia, Chairman
5. Organizing Committee of the *Fourth TESLA Workshop: Physics at Large Hadron Collider*, May 1998, Sveti Stefan, Yugoslavia, Chairman
6. Organizing Committee of the *Fifth TESLA Workshop: Modification and Analysis of Materials by Ion Beams*, April 2000, Bratislava, Slovak Republic, Chairman
7. Organizing Committee of the *Sixth TESLA Workshop: Positron Emission Tomography at the Cyclotron Center of the Slovak Republic*, November 2000, Časta-Papiernička, Slovak Republic, Chairman
8. Organizing Committee of the *Seventh TESLA Workshop: Cooperation in Science, Technology and Medicine in South Eastern and Central Europe*, May 2001, Belgrade, Yugoslavia, Chairman
9. Organizing Committee of the *Eighth TESLA Workshop: Nanoscience and Biomedicine with Ion Beams*, April 2005, Belgrade, Serbia and Montenegro, Chairman
10. Organizing Committee of the *XXXIV European Cyclotron Progress Meeting (ECPM 2005)*, October 2005, Belgrade, Serbia and Montenegro, Chairman
11. Scientific Committee of the *XXXV European Cyclotron Progress Meeting (ECPM 2006)*, November 2006, Nice, France, member
12. Scientific Committee of the *XXXVIII European Cyclotron Progress Meeting (ECPM 2012)*, May 2012, Villigen, Switzerland, member

VIII. Scientific publications

1. 64 articles in refereed international journals
2. 101 contributions at international conferences
3. 42 other publications

IX. Most important scientific publications

1. B. V. Stanić and **N. B. Nešković**, Electromagnetic reflectivity and scattering by non-uniformly moving plane and cylindrical jet streams, *International Journal of Electronics* 41, 351 (1976).
2. **N. B. Nešković**, B. Babić, and J. Konstantinović, High temperature anomalous behaviour of the crystal lattice of hematite, *Physica Status Solidi A* 41, K133 (1977).
3. J. Konstantinović, D. Popov, **N. B. Nešković**, and M. Popovici, Critical behaviour of $\text{Mn}_{1.11}\text{Al}_{0.89}$ alloy, *Solid State Communications* 25, 337 (1978).
4. I. Terzić, **N. Nešković**, and D. Ćirić, Small angle scattering of low energy K^+ ions from the polycrystalline Mg and Cu surfaces, *Surface Science* 88, L71 (1979).
5. **N. Nešković**, D. Ćirić, and M. V. Kuvakin, Small angle ion-surface dipole scattering, *Surface Science* 103, L155 (1981).

6. S. Pešić, D. Ćirić, **N. Nešković**, and B. Perović, VINIS ECR ion source, *Book of Contributed Papers of the 11th Summer School and International Symposium on the Physics of Ionized Gases*, August 23-27, 1982, Dubrovnik (Institute of Physics, Zagreb, 1982), p. 249.
7. **N. Nešković**, B. Perović, and D. Ćirić, On classical small angle scattering from many-particle targets, *Physics Letters A* 96, 183 (1983).
8. P. F. Dittner, S. Datz, P. D. Miller, C. D. Moak, P. H. Stelson, C. Bottcher, W. B. Dress, G. D. Alton, **N. Nešković**, and C. M. Fou, Cross sections for dielectronic recombination of B^{2+} and C^{3+} via $2s \rightarrow 2p$ excitation, *Physical Review Letters* 51, 31 (1983).
9. J. Gomez del Campo, D. Shapira, J. A. Biggerstaff, C. D. Moak, P. D. Miller, **N. Nešković**, R. W. Fearick, and J. P. F. Sellschop, Measurements of nuclear deexcitation times down to 10^{-19} s using crystal blocking of ^{16}O on diamond, *Physical Review Letters* 51, 451 (1983).
10. **N. Nešković**, Rainbow effect in ion channeling, *Physical Review B* 33, 6030 (1986).
11. H. F. Krause, S. Datz, P. F. Dittner, J. Gomez del Campo, P. D. Miller, C. D. Moak, **N. Nešković**, and P. L. Pepmiller, Rainbow effect in axial ion channeling, *Physical Review B* 33, 6036 (1986).
12. **N. Nešković**, Energy levels of channeled ions, *Physical Review B* 33, 7488 (1986).
13. P. D. Miller, H. F. Krause, J. A. Biggerstaff, O. H. Crawford, S. Datz, P. F. Dittner, J. Gomez del Campo, C. D. Moak, **N. Nešković**, P. L. Pepmiller, and M. D. Brown, Resonant coherent excitation of O^{7+} , F^{8+} , and C^5 in the $\langle 100 \rangle$ axial channel in gold, *Nuclear Instruments and Methods in Physics Research B* 13, 56 (1986).
14. **N. Nešković** and B. Perović, Ion channeling and catastrophe theory, *Physical Review Letters* 59, 308 (1987).
15. J. Gomez del Campo, J. Barrette, R. A. Dayras, J. P. Wieleczko, E. C. Pollacco, F. Saint-Laurent, M. Toulemonde, **N. Nešković**, and R. Ostojić, Measurements of time delays for projectile-like fragments in the reaction $^{40}Ar + Ge$ at 44 MeV/amu, *Physical Review C* 41, 139 (1990).
16. **N. Nešković**, R. Ostojić, A. Susini, Lj. Milinković, D. Ćirić, A. Dobrosavljević, B. Brajušković, S. Ćirković, B. Bojović, M. Josipović, D. Toprek, M. Manasijević, and S. Koički, TESLA Accelerator Installation, *Proceedings of the Third European Particle Accelerator Conference*, March 24-28, 1992, Berlin (Frontières, Gif-sur-Yvette, 1992), Vol. 1, p. 415.
17. **N. Nešković**, G. Kapetanović, S. Petrović, and B. Perović, The X_9 catastrophe as the organizing center of crystal rainbows, *Physics Letters A* 179, 343 (1993).
18. **N. Nešković**, S. Petrović, G. Kapetanović, B. Perović, and W. N. Lennard, Crystal rainbows in the cases of square very thin crystals with one atomic string per primitive cell, *Nuclear Instruments and Methods in Physics Research B* 93, 249 (1994).
19. L. Miletić, S. Petrović, and **N. Nešković**, Decay of zero-degree focusing of channeled ions, *Nuclear Instruments and Methods in Physics Research B* 115, 337 (1996).
20. **N. Nešković**, V. Vujović, B. Bojović, P. Bojović, D. Altiparmakov, P. Beličev, N. Maksimović, and A. Dobrosavljević, Status report on the VINCY Cyclotron, *Proceedings of the 14th International Conference on Cyclotrons and their Applications*, October 8-13, 1995, Cape Town (World Scientific, Singapore, 1996), p. 82.
21. D. Altiparmakov, M. Lazović, **N. Nešković**, N. A. Morozov, and S. B. Vorozhtsov, Operating range of the VINCY Cyclotron, *Proceedings of the Fifth European Particle Accelerator Conference*, June 10-14, 1996, Barcelona (Institute of Physics, Bristol, 1996), Vol. 3, p. 2210.
22. J. Ristić-Đurović and **N. Nešković**, Energy and time spreads of the ion beam caused by the spiral inflector, *Nuclear Instruments and Methods in Physics Research A* 406, 172 (1998).
23. M. Pešić, **N. Nešković**, and I. Plečaš, ADS project in the Vinča Institute, *Proceedings of the International Conference on Subcritical Accelerator Driven Systems*, October 11-15, 1999, Moscow (Institute of Theoretical and Experimental Physics, Moscow, 1999), p. 27.
24. S. Petrović, L. Miletić, and **N. Nešković**, Theory of rainbows in thin crystals: the explanation of ion channeling applied to Ne^{10+} ions transmitted through a $\langle 100 \rangle$ Si thin crystal, *Physical Review B* 61, 184 (2000).
25. **N. Nešković**, S. Petrović, and L. Živković, Rainbows with a $\langle 111 \rangle$ Si thin crystal, *European Physical Journal B* 18, 553 (2000).
26. **N. Nešković**, M. Laušević, S. B. Pajović, and J. J. Čomor, Programs in materials science and life sciences within the TESLA Scientific Center, *Proceedings of the International Conference of*

- Experts on Reconstruction of Scientific Cooperation in South East Europe*, March 24-27 2001, Venice (UNESCO ROSTE, Venice, 2001), p. 223.
27. **N. Nešković**, S. Petrović, D. Borka, and S. Kossionides, Rainbows with a tilted $\langle 111 \rangle$ Si very thin crystal, *Physics Letters A* 304, 114 (2002).
 28. **N. Nešković** and S. Petrović, Crystal rainbows, *Journal of Electron Spectroscopy and Related Phenomena* 129, 233 (2003).
 29. **N. Nešković**, J. Ristić-Djurović, S. B. Vorozhtsov, P. Beličev, I. A. Ivanenko, S. Ćirković, A. S. Vorozhtsov, B. Bojović, A. Dobrosavljević, V. Vujović, J. J. Čomor, and S. B. Pajović, Status report on the VINCY Cyclotron, *Nukleonika* 48, Supplement 2, S135 (2003).
 30. P. Beličev, M. Šiljegović, A. Dobrosavljević, and **N. Nešković**, Acceptance of the channel for modification of materials (L3A) of the TESLA Accelerator Installation, *Review of Scientific Instruments* 75, 1678 (2004).
 31. S. Petrović, D. Borka, and **N. Nešković**, Rainbows in transmission of high energy protons through carbon nanotubes, *European Physical Journal B* 44, 41 (2005).
 32. **N. Nešković**, S. Petrović, and D. Borka, Angular distributions of 1 GeV protons channeled in bent short single-wall carbon nanotubes, *Nuclear Instruments and Methods in Physics Research B* 230, 106 (2005).
 33. **N. Nešković**, J. J. Čomor, and A. Dobrosavljević, Fast track phase of construction of the TESLA Accelerator Installation, *Proceedings of the 17th International Conference on Cyclotrons and their Applications*, October 18-22, 2004, Tokyo (Particle Accelerator Society of Japan, Tokyo, 2005), p. 191.
 34. M. Pešić and **N. Nešković**, Concept of an accelerator-driven subcritical research reactor within the TESLA Accelerator Installation, *Nuclear Instruments and Methods in Physics Research A* 562, 642 (2006).
 35. D. Borka, S. Petrović, **N. Nešković**, D. J. Mowbray, and Z. L. Mišković, Influence of the dynamical image potential on the rainbows in ion channeling through short carbon nanotubes, *Physical Review A* 73, 062902 (2006).
 36. D. Borka, S. Petrović, and **N. Nešković**, Channeling star effect with bundles of carbon nanotubes, *Physics Letters A* 354, 457 (2006).
 37. **N. Nešković**, TESLA Accelerator Installation as a large scale facility for science and medicine, *Proceedings of the Sixth Nikola Tesla International Symposium*, October 18-20, 2006, Belgrade (Serbian Academy of Sciences and Arts, Belgrade, 2006), p. 79.
 38. **N. Nešković**, On positron emission tomography and proton therapy, *European Papers on the New Welfare* 8, 91 (2007).
 39. D. Borka, D. J. Mowbray, Z. L. Mišković, S. Petrović, and **N. Nešković**, Dynamic polarization effects on the angular distributions of protons channeled through carbon nanotubes in dielectric media, *Physical Review A* 77, 032903 (2008).
 40. S. Petrović, I. Telečki, D. Borka, and **N. Nešković**, Proton channeling through long chiral carbon nanotubes: the rainbow route to equilibration, *Physics Letters A* 372, 6003 (2008).
 41. D. Borka, D. J. Mowbray, Z. L. Mišković, S. Petrović, and **N. Nešković**, Channeling of protons through carbon nanotubes embedded in dielectric media, *Journal of Physics: Condensed Matter* 20, 474212 (2008).
 42. A. Dobrosavljević, **N. Nešković**, P. Beličev, J. J. Čomor, V. Vujović, R. Balvanović, and J. Ristić-Djurović, A channel for modification of materials with post-accelerated or decelerated multiply charged ion beams, *Nuclear Instruments and Methods in Physics Research A* 597, 136 (2008).
 43. A. Ž. Ilić, J. L. Ristić-Djurović, S. Ćirković, A. Dobrosavljević, and **N. Nešković**, Optimal acceleration in isochronous straight sector cyclotrons, *IEEE Transactions on Nuclear Science* 56, 1498 (2009).
 44. **N. Nešković**, S. Petrović, and D. Borka, Superfocusing of channeled protons and crystal rainbows, *Nuclear Instruments and Methods in Physics Research B* 267, 2616 (2009).
 45. D. Borka, D. J. Mowbray, Z. L. Mišković, S. Petrović, and **N. Nešković**, Donut and dynamic polarization effects in proton channeling through carbon nanotubes, *New Journal of Physics* 12, 043021 (2010).

46. **N. Nešković**, D. Borika, S. Šopić, and S. Petrović, Rainbows in channeling of 1 GeV protons in a bent very short (11, 9) single-wall carbon nanotube, *International Journal of Nonlinear Sciences and Numerical Simulation* 11, 1131 (2010).
47. D. Borika, S. Petrović, and **N. Nešković**, Channeling of Protons through Carbon Nanotubes (Nova Science, New York, 2011).
48. **N. Nešković**, I. Telečki, B. Bojović, and S. Petrović, A square electrostatic rainbow lens: catastrophic ion beam focusing, *Nuclear Instruments and Methods in Physics Research A* 635, 1 (2011).
49. J. Ristić-Djurović and **N. Nešković**, Influence of cyclotron magnet gap size on stripping extraction, *IEEE Transactions on Nuclear Science* 58, 1188 (2011)
50. S. Petrović, **N. Nešković**, V. Berec, and M. Čosić, Superfocusing of channeled protons and subatomic measurement resolution, *Physical Review A* 85, 032901 (2012).

X. Date

June 20, 2012