

CURRICULUM VITAE

Neven Soić

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- e-mail address: soic@irb.hr
- born in Varaždin, Croatia, 25. 03 1967., Croatian Citizenship
- marital status: married, one child

Education

- physics study at the University of Zagreb (1985-1991)
- B. Sc. Experimental Nuclear Physics: “Resonances in the nuclear processes ${}^7\text{Li} + p$ ”, Department of Physics, Faculty of Science, University of Zagreb, Croatia Apr 1991
- postgraduate studies in nuclear physics at the University of Zagreb (1991-1994)
- M. Sc. Experimental Nuclear Physics: “Nuclear reactions ${}^7\text{Li} + {}^7\text{Li}$ ”, Department of Physics, Faculty of Science, University of Zagreb, Croatia Dec 1994
- Ph. D. Experimental Nuclear Physics: “Nuclear reactions induced by ${}^7\text{Li}$ and clustering in the light nuclei”, Department of Physics, Faculty of Science, University of Zagreb, Croatia Jul 1999

Work Experience

- Senior Scientist (equivalent to Professor at university) at Ruđer Bošković Institute, Zagreb, Croatia, Feb 2015 - present
- member of Ministry of Science and Education Committee for new science and high education legislation, 2018 - 2019
- RBI Deputy Director for Research and Education, Feb 2014 - Feb 2018
- Acting head of the Division of Molecular Medicine, Feb 2015 - May 2016
- member of RBI Committee for EU structural funds projects, Apr 2012 - Jun 2013

- member of RBI Council for cooperation with business sector, May 2012 - Jun 2013
- member of RBI Council for strategic scientific program in physics, 2009 - 2010
- Acting head of the Laboratory for Nuclear Reactions, Feb - Dec 2008
- Senior Research Associate at the Ruđer Bošković Institute, Zagreb, Croatia, Nov 2006 - Jan 2015
- Lecturer at the Department of Physics, Faculty of Science, University of Zagreb, 2005 - 2010
- Research Associate at the Ruđer Bošković Institute, Zagreb, Croatia, Sep 2002 - Nov 2006.
- Research Fellow at the University of Birmingham, United Kingdom, Sep 2000 - Sep 2002
- Senior Research Assistant at the Ruđer Bošković Institute, Zagreb, Croatia, Oct 1999 - Sep 2002
- visiting researcher at Laboratori Nazionali del Sud INFN, Catania, Italy, Mar 1996, May - Jul 1996, Oct - Dec 1997, Oct - Nov 1999, Jul 2000, 9 months in total
- visiting researcher at Paul Scherrer Institute, Villigen, Switzerland; Jul 1995 - Feb 1996
- Research Assistant at the Ruđer Bošković Institute, Zagreb, Croatia, Dec 1994 - Oct 1999
- Graduate Assistant at the Ruđer Bošković Institute, Zagreb, Croatia, May 1991 - Dec 1994

Projects/Grants

- one of the three proposers and spokesperson of part of the proposed research on research grant of Croatian Science Foundation (Hrvatska zaklada za znanost - HrZZ) "Neutron Rich Side of the Nuclear Landscape" project no. 1257, Dec 2018 - May 2024
- leader of the project "Synergy for excellence in research and development of detectors, sensors and electronics" funded by European Structural and Investment Funds, June 2018 - November 2019
- co-proposer and member of the Management Committee Core group (steering committee) of the COST action CA16117 "Chemical Elements as Tracers of the Evolution of the Cosmos", April 2017 - October 2021
- project manager and one of the three proposers of the Horizon 2020 ERA Chair project "Expanding Potential in Particle and Radiation Detectors, Sensors and Electronics in Croatia" - PaRaDeSEC approved after call H2020-WIDESPREAD-2014-2015/H2020-WIDESPREAD-2014-2, Jul 2015 - Mar 2021
- member and one of the proposers of National Scientific Centre of Excellence for materials and sensors, subunit "Physics and Technology of Ion Beams", Nov 2014 - Dec 2023

- one of the three proposers and spokesperson of part of the proposed research on research grant of Croatian Science Foundation (Hrvatska zaklada za znanost - HrZZ) "Nuclear structure and reactions - experiments towards the neutron drip line" project no. 7194, Sep 2014 - Aug 2018
- one of the three proposers, member of the Project Management Board and silicon detector system workpackage leader of the FP7 REGPOT project "Upgraded Facility for Development of Silicon and Diamond Particle Detector Systems" - Particle Detectors approved after REGPOT-2009-2 call, Aug 2010 - Jan 2014
- principal investigator of the project "Experimental nuclear physics inputs for thermonuclear runaway", part of the international collaborative project "Physics of compact objects: explosive nucleosynthesis and evolution", selected for funding after the EuroGEN-ESIS call of the EUROCORES Programme of European Science Foundation, Apr 2010 - Dec 2013
- coordinator of the FP7 project CLUNA "Clustering phenomena in nuclear physics: strengthening of the Zagreb - Catania - Birmingham partnership" approved after the REGPOT-2007-3 call, May 2008 - Jul 2011
- one of the three proposers of national research grant "Nuclear structure and reactions: experimental approach" and spokesperson of part of the proposed research, Croatian Ministry of Science, Education and Sport, 2008 - 2013
- grant for young scientists: "Nuclear reactions induced by ${}^7\text{Li}$ and cluster structure of the light nuclei", Croatian Ministry of Science and Technology, 1998

Research experience

- participated in 92 experiments performed in international collaborations, in which were used techniques of coincidence detection of nuclear reaction products in the arrays of charged particle detector telescopes, arrays of neutron detectors and γ detectors; spokesperson of 12 experiments at the international laboratories (Vivitron Strasbourg, ANU Canberra, SPIRAL GANIL Caen, INFN-LNS Catania, IPN Orsay, INFN-LNL Padova, TRIUMF Vancouver), co-spokesperson of the experiments at HRIBF ORNL and INFN LNS:
 - 15 experiments at the Ruđer Bošković Institute Tandem Van de Graaff accelerator, Zagreb, Croatia
 - 14 experiments at the Laboratori Nazionali del Sud Tandem Van de Graaff accelerator, Catania, Italy, spokesperson of the experiment "Study of ${}^{24}\text{Mg}$ resonances relevant for carbon burning nucleosynthesis", co-spokesperson of the experiment "Indirect study of the ${}^{16}\text{O}({}^{12}\text{C},\alpha){}^{24}\text{Mg}$ and ${}^{16}\text{O}({}^{12}\text{C},p){}^{27}\text{Al}$ reactions via the Trojan Horse Method applied to the ${}^{16}\text{O}({}^{14}\text{N},\alpha){}^{24}\text{Mg}$ and ${}^{16}\text{O}({}^{14}\text{N},p){}^{27}\text{Al}$ three-body reactions (NitrOx)
 - 1 experiment at the Laboratori Nazionali del Sud Superconducting Cyclotron, Catania, Italy

- 8 experiments at the radioactive beam facility of the Institut de physique nucleaire, FYNU, Louvain-la-Neuve, Belgium
 - 8 experiments at the ANU Heavy Ion Accelerator Facility, the Australian National University, Canberra, Australia, spokesperson of the experiment "Search for molecular-like structures based upon ^{16}O in ^{22}Ne and ^{34}S "
 - 5 experiments at the VIVITRON Accelerator, Institut de Recherches Subatomiques, Strasbourg, France, spokesperson of the experiment "Search for molecular-like structure in ^{22}Ne "
 - 7 experiments at the GANIL LISE radioactive beam facility, Caen, France
 - 7 experiments at the GANIL SPIRAL radioactive beam facility, Caen, France, spokesperson of the experiment E580S "Spectroscopy of neutron rich light nuclei: decays of ^{16}C and ^5H unbound states"
 - 15 experiments at the XTU Tandem accelerator and ALPI Linac of the Laboratori Nazionali di Legnaro, Legnaro, Italy, spokesperson of the experiments "A novel approach to studying clustering in ^{24}Mg and C-C burning (NovACaCaBu)", "High resolution measurements of the $^{20}\text{Ne}+^4\text{He}$ resonant scattering for characterization of the ^{24}Mg states at excitations 14 - 19 MeV", "Study of Carbon-Carbon Burning by Measuring Excitation Function of the $^{20}\text{Ne} + ^4\text{He}$ resonant reactions", "Revealing the structure of carbon nuclei A=10-14 through measurements of the excited state decay properties" and measurements of the $^{12}\text{C},^{10}\text{B} + ^{14}\text{N}$ reactions
 - 3 experiments at the Tandem Van de Graaff accelerator of the Institut de Physique Nucleaire d'Orsay, Orsay, France, spokesperson of the experiment " ^4He and ^6He cluster decay of ^{18}O states"
 - 1 experiment at the Holifield Radioactive Ion Beam Facility, Oak Ridge National Laboratory, USA, and co-spokesperson of the experiment RIB-199 "A detailed study of the $^{18}\text{F}(p,\alpha)^{15}\text{O}$ reaction at low collision energies"
 - 5 experiments at the ISAC-II Radioactive Ion Beam Facility, TRIUMF, Canada, spokesperson of the experiments S2016 "Examining the helium cluster decays of the ^{12}Be excited states by triton transfer to the ^9Li beam" and S2012 "Cluster structure of ^{16}C excited states explored by $^9\text{Li} + ^{11}\text{B}$ reaction"
 - 1 experiment at the ISAC-I Radioactive Ion Beam Facility, TRIUMF, Canada,
 - 1 experiment at the HIE-ISOLDE Radioactive Ion Beam Facility, CERN, Switzerland
 - 1 experiment at the Radioactive Ion Beam Facility of Cyclotron Institute Texas A&M University, College Station, TX USA, using Texas Active Target (TexAT) detector; responsible for data collection.
- participated in the precise measurement of the pion beta decay ratio at Paul Scherrer Institute, Villigen, Switzerland
 - participated in a number of short and simple measurements at the Ruđer Bošković Institute Tandem Van de Graaff accelerator, Zagreb, Croatia

- experienced on silicon detectors (position sensitive, position sensitive strip detectors, single sided and double sided strip detectors), cesium iodide detectors, gas ionisation chambers, multiwire proportional chambers, multiwire drift chambers, scintillation detectors; experienced on nuclear electronics: NIM, VME standards, experienced in detector arrays and electronics setup
- experience in running Tandem Van de Graaff accelerators, cyclotron experience

Main topics in current research:

- cluster and molecular-like structures in light nuclei
- structure of neutron-rich light nuclei
- reactions with weakly bound and strongly deformed nuclei using stable and radioactive ion beams
- resonances in nuclear reactions important for nuclear astrophysics.

Mentoring:

- mentor of six graduate student theses: L. Prepolec (Jan 2009), M. Plodinec (Feb 2009), V. Tokić (Sep 2010), R. Popočovski (Sep 2017), L. Palada (Jul 2019) and I. Bičanić (Mar 2023)
- mentor of five PhD students: Lovro Prepolec (Sep 2015), Vedrana Tokić (Dec 2016), Nikola Vukman (Dec 2022), Luka Palada and Margareta Sigmund
- supervisor of four postdoctoral researchers: Laura Grassi (Apr 2011 - Jan 2014), Daniele Dell'Aquila (Apr 2019 - Jun 2020), Isabela Tišma (Feb 2022 - Oct 2023) and Nikola Vukman (Mar 2023 - present)

Events Organization:

- member of the local organizing committee of the international conference Fifth International Workshop on State of the Art in Nuclear Cluster Physics Hvar Jun 10. - 14. 2024.
- member of the local organizing committee of the international conference Nuclear Structure and Dynamics Opatija July 09. - 13. 2012.
- member of the local organizing committee of the international conference Nuclear Structure and Dynamics Dubrovnik May 04. - 08. 2009.
- member of the organizing committee of the international workshop The first EuroGENESIS workshop - Origin of the Elements and Nuclear History of the Universe Dubrovnik November 23. - 26. 2010.
- member of the organizing committee of the RBI Open Days 2008., 2010. and 2013.

- co-organizer of the popular science lectures Science for public 2010/11

Publications and Conferences:

- according to the Web of Science Core Collection on Apr 10th 2024 149 published articles, 4 articles in journal published by the Croatian Physical Society, more than 2570 citations, h-index=27
- The 7th International Conference on Clustering Aspects of Nuclear Structure and Dynamics, Rab, Croatia, 14.-19. 6 1999., poster presentation "Nuclear reactions induced by ${}^7\text{Li}$ and clustering in light nuclei"
- The 2nd International Conference on Nuclear and Particle physics with CEBAF at Jefferson Laboratory, Dubrovnik, Croatia, 26.-31. 5 2003., invited talk "Experimental evidences for molecular structures in light nuclei"
- The 8th International Conference on Clustering Aspects of Nuclear Structure and Dynamics, Nara, Japan, 24.-29. 11 2003., oral presentation "Alpha-decaying states in carbon and boron isotopes "
- NUSTAR'05: NUclear STructure, Astrophysics and Reactions, University of Surrey, Guildford, United Kingdom, 5.-8. 01 2005., oral presentation "Three-Centre Cluster Structure in ${}^{11}\text{C}$ and ${}^{11}\text{B}$ "
- FUSION06: International Conference on Reaction Mechanisms and Nuclear Structure at the Coulomb barrier, Island of San Servolo, Venezia, Italy, 19.-23. 03 2006, oral presentation "Experimental evidence for cluster structure in ${}^{11}\text{B}$ "
- International Conference Nuclear Structure and Dynamics Dubrovnik Croatia, May 04. - 08. 2009, poster presentation
- International Workshop The first EuroGENESIS workshop - Origin of the Elements and Nuclear History of the Universe Dubrovnik Croatia November 23. - 26. 2010, oral presentation "Experimental nuclear physics inputs for thermonuclear runaway"
- International Workshop Nuclear Reactions of Astrophysical Interest - the EuroGENESIS program, Madrid Spain 27.-29. 04. 2011, oral presentation "Carbon - Carbon Burning and Other Research Topics of Zagreb IP"
- International Workshop "Ab Initio Understanding of Light Nuclei", Birmingham United Kingdom, 12. - 13. 12. 2012., invited talk "Experimental research programme of Zagreb group on structure of light nuclei"
- International Workshop "The 2nd Workshop on the physics at the TANDEM-ALTO facility" IPN Orsay France 14. - 15. May 2013., invited talk "Nuclear Molecules: exotic structure of light nuclei"
- International Conference "THE ORIGIN OF COSMIC ELEMENTS, Past and Present Achievements, Future Challenges" Barcelona, Spain, June 10-15, 2013, oral presentation "Search for ${}^{24}\text{Mg}$ resonances inside the Gamow window for ${}^{12}\text{C} + {}^{12}\text{C}$ fusion "

- The 12th International Conference on Nucleus-Nucleus Collisions - NN2015, Catania Italy, Jun 21th - Jun 26th 2015, oral presentation "Insight into the ^{24}Mg excited states located in Gamow window for carbon - carbon burning"
- The 8th Nuclear Physics in Astrophysics International conference - NPA2017, Catania Italy, Jun 18th - Jun 23th 2017, invited talk "Measurements of the $^{20}\text{Ne}+^4\text{He}$ resonant elastic scattering for characterization of the ^{24}Mg states at relevant excitations for carbon - carbon burning process"
- The 41st Symposium on Nuclear Physics, Cocoyoc, Mexico, Jan 8th - Jan 11th 2018, invited talk "Helium Decays of the $^{17,18}\text{O}$ Excited States and Clustering in Oxygen Nuclei"
- Fourth International Workshop on "State of the Art in Nuclear Cluster Physics" Galveston, Texas, USA, May 13-18, 2018, oral presentation "Study of Clustering in $^{17,18}\text{O}$ via Helium Decays of the Excited States"
- Nuclear Physics in Stellar Explosions Workshop '18, ChETEC Industrial Day, ATOMKI Debrecen, Hungary, September 12th - 14th 2018, invited talk "HORIZON2020 Project Expanding Potential in Particle and Radiation Detectors, Sensors and Electronics in Croatia"
- African Nuclear Physics Conference 2019, Kruger National Park, South Africa, July 1st - 5th 2019, oral presentation "Helium Decays of Excited States and Clustering in $^{17,18}\text{O}$ "
- 10th European Summer School on Experimental Nuclear Astrophysics (Santa Tecla School), INFN-LNS Catania, Italy, June 16th - 23rd 2019, invited lecture "Role of Clustering in Nuclear Astrophysics"
- The 28th International Nuclear Physics Conference (INPC 2022), Cape Town, South Africa, 11 to 16 September 2022, oral presentation "Clustering in $^{10,12}\text{Be}$ and ^{13}B examined by reactions of ^9Li beam on LiF target"