Lior Arazi November 7, 2022

CURRICULUM VITAE

- **Personal details**

  Name: Lior Arazi

  Date and place of birth: March 11, 1971, Haifa, Israel

  Address and telephone number at work: Ben-Gurion University, Faculty of Engineering Sciences, Nuclear Engineering Unit, 08-6461347, 052-4419952; Email: larazi@bgu.ac.il

  Address and telephone number at home: Bney Efrayim 201/1, Tel Aviv 69984, Israel, 03-6449358

  ORCID iD: 0000-0002-7624-5827

- **Education**

  B.Sc.: 1989-1992, Hebrew University, IDF Talpiot Program, Physics and Mathematics (cum laude)

  M.Sc.: 1993-2001 (parallel to military service, see below), Tel Aviv University (TAU), Physics (cum laude). Advisors: Prof. Itzhak Kelson (TAU) and Dr. Dov Shvarts (NRCN). Thesis title: "A Drag-Buoyancy Based Study of the Late-Time Rayleigh-Taylor and Richtmyer-Meshkov Instabilities Scaling Laws".

  Ph.D.: 2001-2008 (parallel to founding a startup company, see below), TAU, Physics. Advisor: Prof. Itzhak Kelson. Thesis title: "Diffusing Alpha-emitters Radiation Therapy – Theoretical and Experimental Dosimetry".

- **Employment history**

  1/10/2017 – present: Senior Lecturer, Nuclear Engineering Unit, Faculty of Engineering Sciences, Ben-Gurion University.

  2015-2017: Associate Staff Scientist, Physics Core Facilities, Faculty of Physics, WIS. 2012–2015: Senior Intern with Prof. Amos Breskin, Department of Particle Physics and Astrophysics, WIS. Detector Physics.

  2010-2012: Post-doctoral fellow, Department of Particle Physics and Astrophysics, WIS. Advisor: Prof. Amos Breskin. Detector physics.

  2009-2010: Post-doctoral fellow, Chemical Physics Department, WIS. Advisor: Dr. Barak Dayan. Experimental quantum optics.

  2005–2011: Senior Physicist and Co-Founder, Althera Medical Ltd. Alpha-particle based cancer therapy.

  2001-2008: Ph.D. student, School of Physics and Astronomy, Raymond and Beverly Sackler Faculty of Exact Sciences, TAU. Advisor: Prof. Itzhak Kelson.

  1992–2001: Research and analysis officer and section head in various roles in the IDF, including two years as a physicist in NRCN. Retired at the rank of Major (M.Sc. studies done in parallel to military service).

  1989-1992: Cadet in IDF Talpiot Program (B.Sc. student)

- **Awards**
    - 1991 Dean's List, Hebrew University (physics)
    - 2002 Excellence in Teaching Award, Tel Aviv University
    - 2003 Excellence in Teaching Award, Tel Aviv University
    - 2005 Judah Eisenberg Award for Academic Achievements, Tel Aviv University

- **Professional activities**

(a) Significant professional consulting:

Close work with Alpha TAU Medical Ltd., focusing on all aspects related to the dosimetry of the company's technology

(b) Ad-hoc reviewer for journals

Journal of Instrumentation (JINST)

European Journal of Physics C (EPJC)

Nuclear Instruments and Methods A

Instruments

(c) Editorials

Member of the reviewer board of Instruments (2020-)

(d) Membership in scientific societies/collaborations

- Member of the NEXT collaboration (BGU PI, member of the collaboration's institutional board)
- (Adjunct) member of the DARWIN collaboration (BGU is not formally a member institute; I participate in DARWIN through the WIS group).
- Member of the Israel Physical Society
- Member of the American Brachytherapy Society
- Previous memberships:
    - CERN RD51 collaboration on R&D of Micro-Pattern Gaseous Detectors (was an active member at WIS; have not yet renewed my membership as BGU).
    - Israeli representative (together with A. Breskin from WIS) in the EU COST action on Fast Advanced Scintillator Timing (FAST). The action was active between 2014 and 2018.
    - XENON100 and XENON1T dark matter experiments
    - CALICE collaboration for the development of future hadronic calorimeters.

- **Educational activities**

(a) Courses taught

- Basic principles of radiation detection (BGU, 2018-present; previous course name – "theory of radiation detectors")
- Modern Physics for Nuclear Engineering (BGU, 2019)

- Interaction of radiation with matter (BGU, 2017-2019)
- Students' laboratory on radiation detectors (BGU, 2017-present)
- Advanced topics in radiation detection (BGU, 2020-present)
- 2017: Co-lecturer in a graduate course on experimental particle cosmology at WIS (together with Dr. Ran Budnik – I was responsible for classes on detector physics and technology).
- 2012–2016: Lecturer: Physics for biology and medicine students (mechanics, electricity and magnetism) – preparatory course, Tel Aviv University
- 2001–2004: Teaching assistant, Tel Aviv University. Courses:
  - Physics for B.Sc. biology students (2001-2003)
  - Waves for B.Sc. physics students (2003)
  - Classical Physics 2 (electricity and magnetism) for B.Sc. physics students (2004)

(b) Research students mentored

- Postdoctoral fellows at BGU
  - Dr. Ander Simon Estevez (2017-present)
  - Dr. Arindam Roy (2017-presnet)
  - Dr. Mirta Dumancic (started December 2019)
  - Dr. Gonzalo Martinez Lema (shared postdoc with WIS, started December 2019)
- Internal PhD students at BGU
  - Yevgeniya Korotinsky (started October 2018)
  - Adam Redwine (started February 2019)
  - Guy Heger (started March 2020)
  - Darina Zavazieva (started July 2021)
- External PhD students
  - Yair Ifergan, NRCN (started 2018)
  - Lior Epstein, Soreq NRC, co-advisor together with I. Kelson (TAU) and I. Gannot (TAU). Started 2018 (I am formally her co-advisor since December 2019).
  - Ryan Felkai: PhD student from Valencia University, Spain. Came for one full academic year at BGU as part of the "sandwich" PhD program.
- External M.Sc. students
  - David Michaeli, NRCN (started 2018)
  - Sagi Nissim, Soreq NRC (started 2019)
  - Lior Afenjar, NRCN (started 2019)
  - Michael Faziev (started 2020)

- **Patents**

Method and Device for Radiotherapy, Kelson I, Arazi L, WO/2004/096293, filed 29/04/2004

- **Research Grants**

(a) Active grants:

- ISF grant number 1223/21: Demonstrating the feasibility of barium-tagging for a background-free search of neutrinoless double beta decay with a novel technique based on radium sources", 1,000,000 NIS, 1/10/21-30/9/25.
- ERC Synergy grant "BOLD" (subproject "SABRA"), together with J. J. Gomez-Cadenas (Donostia Physics International Center, Donostia, Spain), F. P. Cossio (DIPC, Spain) and R. Guenette (Harvard University, Boston, MA, USA). Currents funds allocated to BGU – 1,180,000 NIS, December 2020-October 2025.
- Ministry of Science grant number 8775281: "Development of a new generation of neutron and gamma ray cameras for applications in nuclear power, radiography and medical imaging", together with A. Beck from NRCN. 1/10/2019-30/9/2022. 1,499,020 NIS total.
- Pazy equipment grant number 87704111: "Radiation Detection Physics Laboratory". 1/1/2019-31/12/2022. 1,000,000 NIS total.
- Pazy research grant number 87704011: "New directions for event topology reconstruction in the NEXT experiment, in search of neutrinoless double beta decay in ^{136}Xe". 1/10/2018-30/9/2022. 840,000 NIS total.
- BG Negev research grant (funded by Alpha TAU Medical Ltd.) number 87798411: "Radiation therapy with diffusing alpha emitters". 1/1/2020-31/12/2020. 262,500 NIS total. To be extended by two years, with similar annual funds.

(b) Previous grants:

- BG Negev research grant (funded by Alpha TAU Medical Ltd.) number 87710211: "Radiation therapy with diffusing alpha emitters". 1/12/2018-30/11/2020. 462,625 NIS total.
- PI on ISF grant with Dr. Shikma Bressler. Grant number 1719/16: "Investigations of the Resistive-Plate WELL detector as a sampling element for (S)DHCAL and other applications" (2016-2020). USD 340,000 total. Grant ended 2019 as Dr. Bressler received a conflicting ISF grant.
- Weizmann Institute Staff Scientist Internal Grant Program (single PI): "Feasibility study of a positive-ion time projection chamber" (2016-2017). USD 35,000 total

List of publications

1. D. Shvarts, D. Oron, D. Kartoon, A. Rikanati, O. Sadot, Y. Srebro, Y. Yedvab, D. Ofer, A. Levin, E. Sarid, G. Ben-Dor, L. Erez, G. Erez, A. Yosef-Hai, U. Alon, **L. Arazi**. *Scaling laws of nonlinear Rayleigh-Taylor and Richtmyer-Meshkov instabilities in two and three dimensions*. Comptes Rendus De L'Academie Des Sciences Serie Iv Physique Astrophysique, 1 (2000), 719-726.
2. O. Sadot, A. Yosef-Hai, D. Oron, A. Rikanati, D. Kartoon, D, **L. Arazi**, Y. Elbaz, E. Sarid, G. Ben-Dor, D. Shvarts. *The dependence of the Richtmyer-Meshkov instability on the Atwood number and dimensionality - theory and experiments.* SPIE-Int. Soc. Opt. Eng. Proceedings of SPIE - the International Society for Optical Engineering, 4183 (2001) 798-806.
3. O. Sadot, D. Oron, D. Kartoon, **L. Arazi**, A. Yosef-Hai, Y. Elbaz, U. Alon, D. Shvarts. *Dimensionality dependence of late time evolution of Rayleigh-Taylor and Richtmyer-Meshkov instabilities.* SPIE-Int. Soc. Opt. Eng. Proceedings of SPIE - the International Society for Optical Engineering, 4424 (2001) 352-8
4. D. Oron, **L. Arazi**, D. Kartoon, A. Rikanati, U. Alon, D. Shvarts. *Dimensionality dependence of the Rayleigh-Taylor and Richtmyer-Meshkov instability late-time scaling laws.* Physics of Plasmas 8 (2001) 2883-9.
5. Y. Srebro, Y. Elbaz, O. Sadot, **L. Arazi**, D. Shvarts. *A general buoyancy-drag model for the evolution of the Rayleigh-Taylor and Richtmyer-Meshkov instabilities.* Laser & Particle Beams 21 (2003) 347-53.
6. D. Kartoon, D. Oron, **L. Arazi**, D. Shvarts. *Three-dimensional multimode Rayleigh-Taylor and Richtmyer-Meshkov instabilities at all density ratios.* Laser & Particle Beams 21 (2003) 327-34.
7. **L. Arazi**, I. Kelson, Y. Ducommun, E. Kapon. *Inverse ray-tracing method for nondestructive mapping of three-dimensional surfaces*. J App Phys 95 (2004) 7888-91.
8. **L. Arazi**, T. Cooks, M. Schmidt, Y. Keisari and I. Kelson. *Treatment of solid tumors by interstitial release of recoiling short-lived alpha emitters.* Phys Med Biol 52 (2007) 5025–42.
9. T. Cooks, **L. Arazi**, M. Schmidt, G. Marshak, I. Kelson and Y. Keisari. *Growth retardation and destruction of experimental squamous cell carcinoma by interstitial radioactive wires releasing diffusing alpha-emitting atoms.* Int J Cancer 122 (2008) 1657-64.
10. T. Cooks, **L. Arazi**, M. Efrati, M. Schmidt, G. Marshak, I. Kelson, Y. Keisari. *Interstitial wires releasing diffusing alpha emitters combined with chemotherapy improved local tumor control and survival in squamous cell carcinoma-bearing mice.* Cancer 115 (2009) 1791-1801**.**
11. T. Cooks, H. Bittan, E. Lazarov, Y. Keisari, M. Schmidt, **L. Arazi**, I. Kelson. *Local Control of Lung Derived Tumors by Diffusing Alpha-Emitting Atoms Released From Intratumoral Wires Loaded With Radium-224.* Int J Rad. Oncol, Biol, Phys 74 (2009) 966-973.
12. **L. Arazi**, T. Cooks, M. Schmidt, Y. Keisari and I. Kelson. *Treatment of solid tumors by alpha emitters released from ^{224}Ra-loaded sources – internal dosimetry analysis.* Phys Med Biol 55 (2010) 1203-18.
13. G. Horev-Drori, T. Cooks, H. Bittan, E. Lazarov, M. Schmidt, **L. Arazi L**, M. Efrati, I. Kelson, Y. Keisari. *Local control of malignant pancreatic tumors by a combined treatment with chemotherapy and intratumoral ^{224}Radium-loaded wires releasing alpha-emitting atoms.* Translational Research, 159 (2012) 32-41.
14. E. Lazarov, **L. Arazi**, M. Efrati, T. Cooks, M. Schmidt, Y. Keisari and I. Kelson. *Comparative In Vitro Microdosimetric Study of Murine- and Human-Derived Cancer Cells Exposed to Alpha Particles.* Radiation Research 177 (2012), 280-7. **[L. Arazi Corresponding author].**
15. A. Breskin, I. Israelashvili, M. Cortesi, **L. Arazi**, S. Shchemelinin, R. Chechik, V. Dangendorf, B. Bromberger and D. Vartsky, *A novel liquid-Xenon detector concept for combined fast-neutrons and gamma imaging and spectroscopy*. 2012 JINST 7 C06008.
16. S. Duval, **L. Arazi**, A. Breskin, R. Budnik, W. T. Chen, H. Carduner, A. E. C. Coimbra, M. Cortesi, R. Kaner, J. P. Cussonneau, J. Donnard, J. Lamblin, O. Lemaire, P. Le Ray, J. A. M. Lopes, A. F. M. Hadi, E. Morteau, T. Oger, J. M. F. dos Santos, L. S. Lavina, J. S. Stutzmann, D. Thers, *Hybrid multi micropattern gaseous photomultiplier for detection of liquid-xenon scintillation.* Nucl. Instrum. Meth. A 695 (2012) 163-7. arXiv:1110.6053.
17. **L. Arazi**, H. Natal da Luz, D. Freytag, M. Pitt, C. D. R. Azevedo, A. Rubin, M. Cortesi, D. S. Covita, C. A. B. Oliveira, E. Oliveri, R. Herbst, S. Park, J. Yu, R. Chechik, J. M. F. dos Santos, M. Breidenbach, G. Haller,

A. White, J. F. C. A. Veloso, A. Breskin, *THGEM-based detectors for sampling elements in DHCAL: laboratory and beam evaluation*. 2012 JINST **7** C05011. arXiv:1112.1915.

18. T. Cooks, M. Tal, S. Raab, M. Efrati, S. Reitkopf, E. Lazarov, R. Etzyoni, M. Schmidt, **L. Arazi**, I. Kelson, Y. Keisari, *Intratumoral ^{224}Ra-Loaded Wires Spread Alpha-Emitters Inside Solid Human Tumors in Athymic Mice Achieving Tumor Control*, Anticancer Research 2012 vol. 32 no. 12 5315-5321.
19. A. Rubin, **L. Arazi**, S. Bressler, A. Dery, L. Moleri, M. Pitt, D. Vartsky, A. Breskin, *Optical readout: a tool for studying gas-avalanche processes*, 2013 JINST 8 P08001. arXiv:1305.1196.
20. A. Rubin, **L. Arazi**, S. Bressler, L. Moleri, M. Pitt and A. Breskin, *First studies with the Resistive-Plate WELL gaseous multiplier*, 2013 JINST 8 P11004. arXiv:1308.6152.
21. S. Bressler, **L. Arazi**, C. D. R. Azevedo, L. Moleri, H. Natal da Luz, E. Oliveri, M. Pitt, A. Rubin, J. M. F. dos Santos, J. F. C. A. Veloso, A. Breskin, *Beam studies of novel THGEM-based potential sampling elements for Digital Hadron Calorimetry*; 2013 JINST 8 P07017. arXiv:1305.4657.
22. **L. Arazi**, C. D. R. Azevedo, A. Breskin, S. Bressler, L. Moleri, H. Natal da Luz, E. Oliveri, M. Pitt, A. Rubin, J. M. F. dos Santos, J. F. C. A. Veloso, A. P. White, *Beam Studies of the Segmented Resistive WELL: a Potential Thin Sampling Element for Digital Hadron Calorimetry*, Nucl. Instum. Meth. A 732 (2013) 199-202, Proceedings of the 13th Vienna Conference on Instrumentation 2013. arXiv:1305.1585.
23. **L. Arazi**, A. E. C. Coimbra, R. Itay, H. Landsman, L. Levinson, B. Pasmantirer, M. L. Rappaport, D. Vartsky and A. Breskin, *First observation of liquid-xenon proportional electroluminescence in THGEM holes*, 2013 JINST 8 C12004. arXiv:1310.4074.
24. S. Bressler, **L. Arazi**, L. Moleri, M. Pitt, A. Rubin, A. Breskin, *Recent advances with THGEM detectors*, 2013 JINST 8 C12012, arXiv:1310.3912.
25. S. Bressler, L. Moleri, **L. Arazi**, E. Erdal, A. Rubin, M. Pitt and A. Breskin, *A concept for laboratory studies of radiation detectors over a broad dynamic-range: instabilities evaluation in THGEM-structures*, 2014 JINST 9 P03005, arXiv:1311.0340.
26. S. Reitkopf, H. Confino, M. Schmidt, T. Cooks, M. Efrati, **L. Arazi**, L. Rath-Wolfson, G. Marshak, I. Kelson and Y. Keisari, *Ablation of experimental colon cancer by intratumoral Radium-224 loaded wires is mediated by alpha particles released from atoms which spread in the tumor and can be augmented by chemotherapy*, Int J Radiat Biol. 2014 Sep 2:1-15.
27. **L. Arazi**, M. Pitt, S. Bressler, L. Moleri, A. Rubin and A. Breskin, *Laboratory studies of THGEM-based WELL structures with resistive anodes*, 2014 JINST 9 P04011, arXiv:1310.6183.
28. I. Israelashvili, M. Cortesi, D. Vartsky, **L. Arazi**, D. Bar, E. N. Caspi and A. Breskin, *A Comprehensive Simulation Study of a Liquid-Xe Detector for Contraband Detection*, 2015 JINST 10 P03030, arXiv:1501.00150.
29. **L. Arazi**, A. E. C. Coimbra, E. Erdal, I. Israelashvili, M. L. Rappaport, S. Shchemelinin, D. Vartsky, J. M. F. dos Santos and A. Breskin, *Cryogenic gaseous photomultipliers and liquid hole-multipliers: advances in THGEM-based sensors for future noble-liquid TPCs*, J. Phys: Conf. Ser. 650 (2015) 012010.
30. **L. Arazi**, E. Erdal, A. E. C. Coimbra, M. L. Rappaport, D. Vartsky and A. Breskin, *Liquid Hole-Multipliers: bubble-assisted electroluminescence in liquid xenon*, 2015 JINST 10 P08015, arXiv:1505.02316.
31. **L. Arazi**, A. E. C. Coimbra, E. Erdal, I. Israelashvili, M. L. Rappaport, S. Shchemelinin, D. Vartsky, J. M. F. dos Santos, and A. Breskin, *First results of a large-area cryogenic gaseous photomultiplier coupled to a dual-phase liquid xenon TPC*, 2015 JINST 10 P10020, arXiv:1508.00410.
32. E. Erdal, **L. Arazi**, V. Chepel, M. L. Rappaport, D. Vartsky and A. Breskin, *Direct observation of bubble-assisted electroluminescence in liquid xenon*, 2015 JINST 10, P11002, arXiv:1509.02354.
33. S. Rosenblum, Y. Lovsky, **L. Arazi**, F. Vollmer and B. Dayan, *Cavity ring-up spectroscopy for ultrafast sensing with optical microresonators*, Nature Communications 6 (2015), 6788, arXiv:1501.01423.
34. The XENON Collaboration: E. Aprile, …, **L. Arazi** and 98 additional authors, *Exclusion of Leptophilic Dark Matter Models using XENON100 Electronic Recoil Data*, Science 2015 vol. 349 no. 6250 pp. 851-854, arXiv:1507.07747.
35. The XENON Collaboration: E. Aprile, …, **L. Arazi** and 99 additional authors, *Search for Event Rate Modulation in XENON100 Electronic Recoil Data*, Phys. Rev. Lett. 115, 091302 (2015), arXiv: 1507.07748.

36. The XENON collaboration: E. Aprile, …, **L. Arazi** and 96 additional authors, *Lowering the radioactivity of the photomultiplier tubes for the XENON1T dark matter experiment*, Eur. Phys. J. C 75 (2015) no.11, 546, arXiv:1503.07698.

37. The XENON collaboration: E. Aprile, …, **L. Arazi** and 113 additional authors, *Physics reach of the XENON1T dark matter experiment*, JCAP 04 (2016) 027, arXiv:1512.07501.

38. D. Vartsky, I. Israelashvili, M. Cortesi, **L. Arazi**, A. E. Coimbra, L. Moleri, E. Erdal, D. Bar, M. Rappaport, S. Shchemelinin, E. N. Caspi, O. Aviv, A. Breskin, *Liquid-Xe detector for contraband detection*¸ Nucl. Instum. Meth. A 824 (2016), 240-242.

39. The DARWIN consortium: J. Aalbers, …, **L. Arazi** and 117 additional authors, *DARWIN: towards the ultimate dark matter detector*, JCAP 11 (2016) 017, arXiv:1606.07001 **[L. Arazi L one of four corresponding authors].**

40. S. Bressler, L. Moleri, M. Pitt, S. Kudella, C. D. R. Azevedo, F. D. Amaro, M. R. Jorge, J. M. F. dos Santos, J. F. C. A. Veloso, H. Natal da Luz, **L. Arazi**, E. Oliveri and A. Breskin, *First in-beam studies of a Resistive-Plate WELL gaseous multiplier*, 2016 JINST 11 P01005, arXiv:1510.03116.

41. L. Moleri, F. D. Amaro, **L. Arazi**, C. D. R. Azevedo, A. Breskin, A. E. C. Coimbra, E. Oliveri, F. A. Pereira, D. Shaked Renous, J. Schaarschmidt, J. M. F. dos Santos, J. F. C. A. Veloso, and S. Bressler, *In-beam evaluation of a medium-size Resistive-Plate WELL gaseous particle detector*, 2016 JINST 11 P09013, arXiv:1607.02587.

42. E. Erdal, **L. Arazi**, M. Rappaport, S. Shchemelinin, D. Vartsky, and A. Breskin, *First demonstration of VUV-photon detection in liquid xenon with THGEM and GEM based Liquid Hole Multipliers*, Nucl. Instrum. Meth. A 845 (2017) 218-221, arXiv: 1603.07669. **[L. Arazi corresponding author].**

43. L Moleri, F. D. Amaro, **L. Arazi**, C. D. R. Azevedo, E. Oliveri, M. Pitt, J. Schaarschmidt, D. Shaked-Renous, J. M. F. dos Santos, J. F. C. A. Veloso, A. Breskin and S. Bressler, *The Resistive-Plate WELL with argon mixtures – a robust gaseous radiation detector*, Nucl. Instrum. Meth. A 845 (2017) 262-265 (Proceedings of the 14th Vienna Conference on Instrumentation). arXiv: 1603.04820.

44. I. Israelashvili, A. E. C. Coimbra, D. Vartsky, **L. Arazi**, S. Shchemelinin, E. N. Caspi, A. Breskin, *Fast-neutron and gamma-ray imaging with a capillary liquid xenon converter coupled to a gaseous photomultiplier*, 2017 JINST 12 P09029, arXiv:1707.04794.

45. **L. Arazi**, *On* the *possibility of positive-ion detection in gaseous TPCs and its potential use for neutrinoless double beta decay searches in* ^{136}Xe, 2018 J. Phys.: Conf. Ser. 1029 012004,

46. E. Erdal, **L. Arazi**, A. Tesi, A. Roy, S. Shchemelinin, D. Vartsky and A. Breskin, *Recent Advances in Bubble-Assisted Liquid Hole-Multipliers in Liquid Xenon*, 2018 JINST 13 P12008, arXiv:1708.06645. **[Arazi L corresponding author]**

47. R. Felkai, F. Monrabal, D. Gonzalez-Díaz, et al. (NEXT collaboration, 75 authors including **L. Arazi**), *Helium-Xenon mixtures to improve the topological signature in high pressure gas xenon TPCs*, Nucl. Instrum. Meth. A 905 (2018) 82, arXiv:1710.05600.

48. G. Martínez-Lema, J. A. Hernando Morata, B. Palmeiro, et al. (NEXT collaboration, 77 authors including **L. Arazi**), *Calibration of the NEXT-White detector using* ^{83m}Kr *decays*, 2018 JINST 13 P10014, arXiv:1804.01780.

49. A. Simón, R. Felkai, G. Martínez-Lema, et al. (NEXT collaboration, 75 authors including **L. Arazi**), *Electron drift properties in high pressure gaseous xenon*, 2018 JINST 13 P07013, arXiv:1804.01680.

50. P. Novella, B. Palmeiro, A. Simón, et al. (NEXT collaboration, 81 authors including **L. Arazi**), *Measurement of radon-induced backgrounds in the NEXT double beta decay experiment*, JHEP 1810 (2018) 112, arXiv:1804.00471.

51. F. Monrabal et al. (NEXT collaboration, 75 authors including **L. Arazi**), *The Next White (NEW) detector*, 2018 JINST 13 P12010, arXiv:1804.02409.

52. L. Rogers, R.A. Clark, B.J.P. Jones, (NEXT collaboration, 81 authors including **L. Arazi**), *High Voltage Insulation and Gas Absorption of Polymers in High Pressure Argon and Xenon Gases*, 2018 JINST 13 P10002.

53. C. A. O. Henriques, C. M. B. Monteiro, D. González-Díaz, et al. (NEXT collaboration, 80 authors including **L. Arazi**), *Electroluminescence TPCs at the thermal diffusion limit*, JHEP 1901 (2019) 027, arXiv:1806.05891.

54. J. Renner, P. Ferrario, G. Martínez-Lema, et al. (NEXT collaboration, 80 authors including **L. Arazi**), *Initial results on energy resolution of the NEXT-White detector*, 2018 JINST 13 P10020, arXiv:1808.01804.

55. A. M. F. Trindade, J. Escada, A. F. V. Cortez, et al. (NEXT collaboration, 78 authors including **L. Arazi**), *Study of the loss of xenon scintillation in xenon-trimethylamine mixtures*, *Nucl. Instrum. Meth. A* **905** (2018) 22, arXiv:1812.05521.

56. E. Erdal, A. Tesi, D. Vartsky, S. Bressler, **L. Arazi**, A. Breskin, *First Imaging Results of a Bubble-assisted Liquid Hole Multiplier with SiPM readout in Liquid Xenon*, 2019 JINST 14 P01028, arXiv:1812.00780.

57. A. D. McDonald, K. Woodruff, B. Al Atoum et al. (NEXT collaboration, 86 authors including **L. Arazi**), *Electron Drift and Longitudinal Diffusion in High Pressure Xenon-Helium Gas Mixtures*, 2019 JINST 14 P08009, arXiv:1902.05544.

58. **L. Arazi** (on behalf of the NEXT collaboration), *Status of the NEXT project*, Nucl. Instum. Meth. A. 958 (2020) 162126.

59. J. Renner, G. Díaz López, P. Ferrario et al. (NEXT collaboration, 90 authors including **L. Arazi**), *Energy calibration of the NEXT-White detector with 1% resolution near $Q_{\beta\beta}$ of ^{136}Xe*, JHEP 10 (2019) 230, arXiv:1905.13110.

60. P. Ferrario, J. M. Benlloch-Rodríguez, G. Díaz López, et al. (NEXT collaboration, 90 authors including **L. Arazi**), *Demonstration of the event identification capabilities of the NEXT-White detector*, JHEP 10 (2019) 052, arXiv:1905.13141.

61. P. Novella, B. Palmeiro, M. Sorel, et al. (NEXT collaboration, 90 authors including **L. Arazi**), *Radiogenic backgrounds in the NEXT double beta decay experiment*, JHEP 10 (2019) 051.

62. A. Roy, M. Morales, I. Israelashvili, A. Breskin, S. Bressler, D. Gonzalez-Diaz, C. Pecharromán, S. Shchemelinin, D. Vartsky, **L. Arazi**, *First results of Resistive-Plate Well (RPWELL) detector operation at 163 K*, 2019 JINST 14 P10014, arXiv:1907.05057.

63. D. Vartsky, A. Roy, A. Coimbra, S. Shchemelinin, I. Israelashvili, **L. Arazi**, E. Erdal and A. Breskin, *CsI-photocathode in-situ monitoring system in gaseous and noble-liquid photomultipliers*, 2019 JINST 14 T07006.

64. A. Popovtzer, E. Rosenfeld, A. Mizrachi, S.R. Bellia, R. Ben-Hur, G. Feliciani, A. Sarnelli, **L. Arazi**, I. Kelson, Y. Keisari, *Initial Safety and Tumor Control Results from a "First-in-Human" Multicenter Prospective Trial Evaluating a Novel Alpha-Emitting Radionuclide for the Treatment of Locally Advanced Recurrent Squamous Cell Carcinomas of the Skin and Head and Neck*, Int. J. Rad. Oncol. Biol. Phys. **106** (2020) 571-8.

65. **L. Arazi**, *Diffusing alpha-emitters radiation therapy: approximate modeling of the macroscopic alpha particle dose of a point source*, Phys. Med. Biol. 65 (2020) 015015.

66. A. F. M. Fernandes, C. A. O. Henriques, R. D. P. Mano, et al. (NEXT collaboration, 91 authors including **L. Arazi**), *Low-diffusion Xe-He gas mixtures for rare-event detection: Electroluminescence Yield*, JHEP 04 (2020) 34, arXiv:1906.03984.

67. D. Ferenc, A. C. Chang, S. Saylor, A. Böser, A. Davide Ferella, **L. Arazi**, J. R. Smith, M. Šegedin Ferenc, *ABALONE Photosensors for the IceCube Experiment*, Nucl. Instrum. Meth. A **954** (2020) 161498.

68. K. Woodruff, J. Baeza-Rubio, D. Huerta, et al (NEXT collaboration, 94 authors including **L. Arazi**), *Radio Frequency and DC High Voltage Breakdown of High Pressure Helium, Argon, and Xenon*, 2020 JINST **15** P04022, arXiv:1909.05860.

69. E. Erdal, **L. Arazi**, A. Breskin, S. Shchemelinin, A. Roy, A. Tesi, D. Vartsky and S. Bressler, *Bubble-assisted Liquid Hole Multipliers in LXe and LAr: towards "local dual-phase TPCs"*, 2020 JINST **15** C04002, arXiv: 1912.10698.

70. L. Rogers, B. J. P. Jones, A. Laing, et al. (NEXT collaboration, 92 authors including **L. Arazi**), *Mitigation of Backgrounds from Cosmogenic ^{137}Xe in Xenon Gas Experiments using ^{3}He Neutron Capture*, 2020 J. Phys. G: Nucl. Part. Phys. **47** 075001, arXiv:2001.11147.

71. J. Aalbers et al. (DARWIN Collaboration, 166 authors, including **L. Arazi**), *Solar neutrino detection sensitivity in DARWIN via electron scattering*, Eur. Phys. J. C **80** (2020) 1133, arXiv:2006.03114.
72. S. Ghosh, J. Haefner, J. Martín-Albo, et al. (NEXT collaboration, 91 authors including **L. Arazi**), *Dependence of polytetrafluoroethylene reflectance on thickness at visible and ultraviolet wavelengths in air*, 2020 *JINST* **15** P11031, arXiv:2007.06626.
73. M. Kekic, C. Adams, K. Woodruff, et al. (NEXT collaboration, 90 authors including **L. Arazi**), *Demonstration of background rejection using deep convolutional neural networks in the NEXT experiment*, *JHEP* 189 (2021), arXiv:2009.10783.
74. G. Martínez-Lema, M. Martínez-Vara, M. Sorel, et al. (NEXT collaboration, 91 authors including **L. Arazi**), *Sensitivity of the NEXT experiment to Xe-124 double electron capture*, *JHEP* 203 (2021), arXiv:2006.07320.
75. C. Adams, V. Alvarez, **L. Arazi**, et al. (NEXT collaboration, 91 authors), *Sensitivity of a tonne-scale NEXT detector for neutrinoless double beta decay searches*, *JHEP* 164 (2021), arXiv:2005.06467.
76. A. Simón, Y. Ifergan, A. B. Redwine, R. Weiss-Babai, **L. Arazi** (NEXT collaboration, 103 authors) *Boosting background suppression in the NEXT experiment through Richardson-Lucy deconvolution*. *JHEP* 146 (2021), arXiv:2102.11931. **[L. Arazi corresponding author]**

Submitted papers

- G. Heger and L. Arazi, *Finite-element modeling of the alpha particle dose of realistic sources used in Diffusing Alpha-emitters Radiation Therapy*, submitted to Phys. Med. Biol. **[L. Arazi corresponding author]**

In preparation

- Y. Ifergan, A. Simón, R. Felkai, A. Roy, I. Israelashvili and **L. Arazi**, *Electroluminescence yield and energy resolution in cold xenon gas*.