

Date: 04.02.2022

**CURRICULUM VITAE****Personal Details**

Name: Yehoshua Socol

Birth Date: 26.07.1965

Email: socol@jct.ac.il

Google scholar: <https://scholar.google.com/citations?hl=en&user=UoF2rOAAAAAJ>**1. Academic Education**

1988 M.Sc. in Materials' Engineering, National University MISiS, Moscow

Thesis: *Changes of local non-uniformity in cobalt-rich amorphous alloys*

Area: Experimental study of metal glasses

Supervisor: Prof. Yu.A. Skakov

1994 M.Sc. in Applied Physics, Weizmann Institute of Science

Thesis: *Design of Planar Optical Interconnects*

Area: Diffractive optics

Supervisors: Dr. Yaakov Amitai and Prof. Asher Friesem

2000 Ph.D. in Physics, Weizmann Institute of Science

Thesis: *Dilepton Production in Pb-Au collisions at 158 GeV per Nucleon Using the CERES Detector*

Area: Experimental nuclear physics

Supervisor: Prof. Itzhak Tserruya

**2. Academic Appointments**2003 – 2006 Adjunct lecturer, Dept. of Electrical & Electronic Engineering, *Ariel University*2015 – 2016 Adjunct lecturer, Dept. of Mathematics, *Shamoon College of Engineering*2017 – 2019 Adjunct lecturer, Dept. of Mathematics, *Jerusalem College of Engineering*2017 – 2018 Lecturer, Dept. of Electrical & Electronic Engineering,  
*Jerusalem College of Technology*2018 – present Senior lecturer, Dept. of Electrical & Electronic Engineering,  
*Jerusalem College of Technology***3. Relevant Non-Academic Employment**2007 – 2017 *Falcon Analytics* – self-owned consultancy2003 – 2007 Senior Researcher at *National Center for Radiation Sources and Applications* (joint project of Tel-Aviv University and Ariel University under the auspices of the Ministry of Science).

Responsibilities: Coordinator of the Israeli Free-Electron Laser collaboration (~10 members)

1999 – 2003 Researcher at Dept. of Chemistry, *Bar-Ilan University*

Responsibilities: R&D team leader (+ 2 engineers) in the framework of *Digital Printing Consortium* (Chief Scientist, the Ministry of Economics)

1988 – 1990 R&D engineer, Lab. of soft magnetic materials, *I.P. Bardin Research Institute for Ferrous Metallurgy*, Moscow.

Responsibilities: team member – thermo-magnetic alloys

#### 4. Awards and Honors for Academic or Professional Achievement

None

#### 5. Research and Development Activities

##### a. Summary of Past Research and Development Activities

##### ***Falcon Analytics***

Projects with *ELTA Systems Ltd* (a division and subsidiary of *Israel Aerospace Industries*)

- R&D of high-power lasers and their applications
- Supervised by the Director, R&D and Strategic Planning, *ELTA Systems Ltd*
  - Simulations, feasibility studies and preliminary designs
  - Proof-of-concept experiments
  - Formulation of specifications, choice of sub-contractors (academy & industrial)
  - Collaboration with sub-contractors (including travels abroad), contacts with funding agencies
  - Preparation & presentation of proposals & reports

with *IDF Home Front & Technion*

- Radiation effects and protection
- Monte Carlo simulations

with *Helmholz Zentrum Berlin & Budker Inst. for Nucl. Physics (Novosibirsk, Russia)*

- Free-Electron Laser for extreme ultraviolet lithography: feasibility study & conceptual design

##### ***National Center for Radiation Sources and Applications (Ariel)***

- Successful commissioning of the FEL
- Next stages' R&D
- Preparation & presentation of proposals & reports

*Avnet37 (Detection of Concealed Objects) Consortium (MAGNET)*

- Sub-mm wave imaging – experiment, data processing, interpretation

##### ***Bar-Ilan University***

*DPI2000+ Digital Printing Consortium (MAGNET)*

In collaboration with *Aprion Digital Ltd* (presently – part of *HP-Scitex*)

- Inkjet printing head lab prototype – design, development & building
- Spectral imaging of ink drops, machine vision & classification
- Interaction with process engineers – support of inks' formulation
- Study of electrochemistry of conductive inks

##### ***I.P. Bardin Institute, Moscow***

- Developed new class of nickel-rich thermo-magnetic alloys for temperature switches

*b. Summary of Current Research and Development Activities*

For the last decade, my research interests have been centered on of the health effects of ionizing radiation, and also public health and medical ethics. During the last years – also in managing radiological emergency and estimating possible scenarios of radiological events (Red Team). My activity includes coordinating interdisciplinary research performed by international collaborations. My present collaborators are affiliated with SZMC – Shaare Zedek Medical Center, Tel Aviv Sourasky Medical Center (Ichilov Hospital), Ariel University, IRSN – Institute for Radiological Protection and Nuclear Safety (IRSN, France), Loyola University–Chicago, NCBJ – National Centre for Nuclear Research (Poland), Inst. of Gerontology (Kiev, Ukraine), and more.

In 2019, I entered the field of Machine Learning for image processing (threat detection) in collaboration with ELTA Systems Ltd. Currently I am involved in machine learning for analyzing biological systems (with IRSN, France).

*c. Future Directions for Research and Development.*

- Machine Learning for image processing (in collaboration with ELTA), and for analyzing biological systems (with IRSN, France).
- Ethics and public acceptance of machine learning.
- Mathematical modeling of effects of radiation exposure (with NCBJ, Poland) and radiation therapy (with SZMC and Ichilov).

## 6. Publications

### Books, Book Sections

1. Yehoshua Socol. *Practical Aspects of Nuclear Threat* (in Hebrew), 5-th Ed. Academic Forum for Nuclear Awareness, 2017. 54 pp + appendices in English  
יהושע סוקול. *איום גרעיני בהיבט מעשי*. מהדורה חמישית, פורום אקדמאים למודעות גרעינית, 2017. 54 עמ' + נספחים באנגלית
2. A. Vaiserman, A. Koliada and Y. Socol. *Hormesis through low dose radiation*. Book chapter (chap. 13) in: S. Rattan and M. Kyriazis (Eds), "The Science of Hormesis in Health and Longevity", by Elsevier, Oct. 2018, ISBN 978-0-12-814253-0, pp. 129-138.

### Peer-Reviewed Papers in Refereed Journals

1. D'yakonova N.G., V.V. Sadchikov and E.I. Sokol. Thermomagnetic properties of high nickel alloys. *Metal Science and Heat Treatment* **32** (1990) 713–716. Rank: Q3, Impact factor: 0.3
2. Socol E., Y. Amitai and A.A. Friesem. Design of planar optical interconnects. *SPIE Proceedings* **2426** (1995) 433–442. Impact factor: 0.4. Times cited: 4
3. Agakichiev G. *et al.* (CERES Collaboration) New results from NA45/CERES. *Nucl. Phys. A* **590** (1995) 103–116. Rank: Q2, Impact factor: 1.5. Times cited: 49
4. Agakichiev G. *et al.* (CERES Collaboration) Performance of the CERES Electron Spectrometer in the CERN SPS Lead Beam. *Nucl. Instr. Meth. A* **371** (1996) 16–21. Rank: Q1, Impact factor: 2.0. Times cited: 9

5. Faschingbauer U. *et al.* (CERES Collaboration) A doublet of 3" cylindrical silicon drift detectors in the CERES/NA45 experiment. *Nucl. Instr. Meth. A* **377** (1996) 362–366. Rank: Q1, Impact factor: 1.5. Times cited: 11
6. Ullrich T. *et al.* (CERES Collaboration) First results from CERES/NA45 on low-mass electron pair production in Pb-Au collisions. *Nucl. Phys. A* **610** (1996) 317–330. Rank: Q2, Impact factor: 1.5. Times cited: 130
7. Appelshäuser H. *et al.* (CERES Collaboration) Physics with the upgraded CERES detector. *Acta Phys. Polonica B* **29** (1998) 3153–3159. Rank: Q2, Impact factor: 0.6. Times cited: 4
8. Agakichiev G. *et al.* (CERES Collaboration) Low-mass  $e^+e^-$  pair production in 158A GeV Pb-Au collisions at the CERN SPS, its dependence on multiplicity and transverse momentum. *Phys. Lett. B* **422** (1998) 405–412. Rank: Q1, Impact factor: 3.6. Times cited: 439
9. Ceretto F. *et al.* (CERES Collaboration) Hadron physics with CERES: spectra and collective flow. *Nucl. Phys. A* **638** (1998) 467c–470c. Rank: Q2, Impact factor: 1.5. Times cited: 40
10. Ravinovich I. *et al.* (CERES Collaboration) CERES results on low-mass electron pair production in Pb-Au collisions. *Nucl. Phys. A* **638** (1998) 159c–170c. Rank: Q2, Impact factor: 1.5. Times cited: 39
11. Lenkeit B. *et al.* (CERES Collaboration) New results on low-mass lepton pair production in Pb-Au collisions at 158 GeV/c per nucleon. *Nucl. Phys. A* **654** (1999) 627c–630c. Rank: Q2, Impact factor: 1.5. Times cited: 13
12. Lenkeit B. *et al.* (CERES Collaboration) Recent results from Pb-Au collisions at 158 GeV/c per nucleon obtained with the CERES spectrometer. *Nucl. Phys. A* **661** (1999) 23c–32c. Rank: Q2, Impact factor: 1.5. Times cited: 168
13. Socol Y., O. Abramson, A. Gedanken *et al.* Suspensive electrode formation in pulsed sonoelectrochemical synthesis of silver nanoparticles. *Langmuir* **18** (2002), 4736–4740. Rank: Q1, Impact factor: 4.0. Times cited: 97
14. Socol Y., Y. Meshorer, L. Berenstein and A. Zaban. Using ultrasonic energy to improve the ink drying process: a feasibility study. *J. Imag. Sci. Techn.*, **47** (2003) 239–242. Rank: Q2, Impact factor: 0.9. Times cited: 1
15. Socol Y., L. Berenstein, and A. Zaban. Method for in situ measurements of inkjet printed ink drops. *J. Imag. Sci. Techn.*, **48** (2004) 15–21. Rank: Q2, Impact factor: 0.9. Times cited: 11
16. Agakichiev G. *et al.* (CERES Collaboration) Semihard scattering unraveled from collective dynamics by two-pion azimuthal correlations in 158A GeV/c Pb+Au collisions. *Phys. Rev. Lett.* **92** (2004) Art. 032301. Rank: Q1, Impact factor: 7.6. Times cited: 106
17. Bormashenko E., R. Pogreb, Y. Socol, *et al.* Novel scheme for electrically-controlled resonance IR waveguides. *Opt. Applicata* **34** (2004) 303–307. Rank: Q3, Impact factor: 0.6. Times cited: 2
18. Bormashenko E., R. Pogreb, Y. Socol, *et al.* Polyvinylidene fluoride – piezoelectric polymer for integrated infrared optics applications. *Opt. Materials* **27** (2004) 429–434. Rank: Q1, Impact factor: 2.0. Times cited: 35.
19. Bormashenko E., R. Pogreb, O. Stanevsky *et al.* Self-assembled honeycomb polycarbonate films deposited on polymer piezoelectric substrates and their applications. *Polym. Adv. Technol.* **16** (2005) 299–304. Rank: Q1, Impact factor: 2.0. Times cited: 46.
20. Agakichiev G. *et al.* (CERES Collaboration)  $e^+e^-$  pair production in Pb-Au collisions at 158 GeV per nucleon. *Eur. Phys. J.* **C41** (2005) 475–513. Rank: Q1, Impact factor: 4.9. Times cited: 126
21. Bielcikova J. *et al.* (CERES collaboration) Semihard scattering unraveled from collective flow at the SPS. *Eur. Phys. J.* **C43** (2005) 323–327. Rank: Q1, Impact factor: 4.9. Times cited: 2
22. Socol Y., A. Gover, A. Eliran *et al.* Coherence limits and chirp control in long pulse free electron laser oscillator. *Phys. Rev. ST Accel. Beams* **8** (2005) Art. 080701. Rank: Q1, Impact factor: 2.0. Times cited: 7
23. Socol Y. Mechanical means for temperature compensation of planar diffractive optical interconnects. *Opt. Eng. Lett.* **45** (2006) Art. 040502. Rank: Q1, Impact factor: 1.2. Times cited: 1.
24. Socol Y. and I.S. Guzman. Fast ring-shape self-assembling in water-based ink-jetted droplets. *J. Phys. Chem. B*, **110** (2006) 18347–18350. Rank: Q1, Impact factor: 3.2. Times cited: 21.

25. Socol Y., G. N. Kulipanov, A. N. Matveenko, O. A. Shevchenko and N.V. Vinokurov. Compact 13.5-nm free-electron laser for extreme ultraviolet lithography. *Phys. Rev. ST Accel. Beams* **14** (2011) 040702. Rank: Q1, Impact factor: 2.0. Times cited: 61.
26. Socol Y., M. Yanovskiy and M. Bronshtein. Challenges of a multi-polar nuclear world. *Obrana a strategie (Defence & Strategy)* **12/1** (2012) 27–40, DOI: 10.3849/1802-7199.12.2012.01.027-040 Times cited: 1
27. Socol Y. High-power free-electron lasers—technology and future applications. *Optics & Laser Technology* **46** (2013) 111–126. Rank: Q2, Impact factor: 1.9. Times cited: 21.
28. Socol Y., M. Yanovskiy and I. Zatskovetsky. Low-dose ionising radiation: scientific controversy, moral-ethical aspects and public choice. *Int. J. Nuclear Governance, Economy and Ecology*, **4** (2013) 59–75. Times cited: 12.
29. Socol Y., L. Dobrzyński, M. Doss *et al.* Commentary: ethical issues of current health-protection policies on low-dose ionizing radiation. *Dose-Response* **12** (2014) 342–348. Rank: Q1, Impact factor: 2.4. Times cited: 31.
30. Socol Y., J. Cuttler, L. Dobrzyński *et al.* Comment on "NAIRAS aircraft radiation model development, dose climatology, and initial validation", *Space Weather* **12/2** (2014) 120–121. Rank: Q2, Impact factor: 2.6. Times cited: 1
31. Socol Y. Chernobyl's legacy: black prophecies' bubble. *Europhysics News* **45/1** (2014) 27, DOI: 10.1051/epn/2014199. Times cited: 2
32. Socol Y. Nuclear-powered unmanned aerial vehicles for science, industry and telecommunications. *Int. J. Nuclear Governance, Economy and Ecology* **4/2** (2014) 77–82.
33. Fornalski KW., M. Cohen, J. Cuttler *et al.* Letter to the Editor: French nuclear power plants and childhood leukemia. *Dose-Response*. **12** (2014) 518–21. Rank: Q1, Impact factor: 2.4. Times cited: 1
34. Socol Y. Reconsidering health consequences of the Chernobyl accident. *Dose-Response* **13/1** (2015) 14–040. Rank: Q1, Impact factor: 2.4. Times cited: 11.
35. Socol Y. and L. Dobrzyński. Atomic bomb survivors life-span study: insufficient statistical power to select radiation carcinogenesis model. *Dose-Response* **13/1** (2015) 14-034. Rank: Q1, Impact factor: 2.4. Times cited: 32.
36. Socol Y. and J.S. Welsh. Regarding the credibility of data showing an alleged association of cancer with radiation from CT scans. *Technol. Cancer Res. Treat.* **15/1** (2016) 159–162. Rank: Q2, Impact factor: 2.2. Times cited: 7
37. Socol Y. and J.S. Welsh. Changing attitude toward radiation carcinogenesis and prospects for novel low-dose radiation treatments. *Technol. Cancer Res. Treat.* **15/6** (2016) 732–736. Rank: Q2, Impact factor: 2.2. Times cited: 2.
38. Dobrzyński L., KW. Fornalski, Y. Socol and J.M. Reszcyńska. Modeling of irradiated cells' transformation: the dose- and time-dependent effects. *Radiation Research*. **186/4** (2016) 396–406. Rank: Q1, Impact factor: 2.5. Times cited: 14.
39. Cuttler J, L. Feinendegen and Y. Socol. Evidence that lifelong low dose-rates of ionizing radiation increase lifespan in long- and short-lived dogs. *Dose-Response*, Jan-Mar (2017) 1–6. Rank: Q1, Impact factor: 2.4. Times cited: 27.
40. Siegel JA, B. Sacks and Y. Socol. The LSS Cohort of Atomic Bomb Survivors and LNT. *Radiation Research*, **188** (2017), 463–464. Rank: Q1, Impact factor: 2.5 Times cited: 7
41. Vaiserman A., A. Koliada, O. Zabuga and Y. Socol. Health Impacts of Low-Dose Ionizing Radiation: Current Scientific Debates and Regulatory Issues. *Dose-Response* **16/3** (2018) 1559325818796331 Rank: Q2. Impact factor: 2.4 Times cited: 107.
42. Cuttler J, L. Feinendegen and Y. Socol. Evidence of a dose-rate threshold for lifespan reduction of dogs exposed lifelong to  $\gamma$ -radiation. *Dose-Response* **16/4** (2018) 1559325818820211. Rank: Q1, Impact factor: 2.4 Times cited: 7
43. Yanovskiy M., Y.Y. Shaki and Y. Socol. Ethics of adoption and use of the linear no-threshold model. *Dose-Response* **17/1** (2019) 1559325818822602. Rank: Q1, Impact factor: 2.4, Times cited: 4.

44. Socol Y, Y.Y. Shaki and A. Vaiserman. Thyroid cancer overdiagnosis: implications for understanding radiation carcinogenesis and for medical imaging. *Chemico-Biological Interactions* **305** (2019) 1–2. Rank: Q1, Impact factor: 3.5 Times cited: 3
45. Socol Y, Y.Y. Shaki and M Yanovskiy. Interests, Bias, and Consensus in Science and Regulation. *Dose-Response* **17/2** (2019) 1559325819853669 Rank: Q1, Impact factor: 2.4, Times cited: 2.
46. Socol Y, Y.Y. Shaki, L Dobrzyński. Damped-oscillator model of adaptive response and its consequences. *Int. J. Low Radiation* **11** (3-4) (2020) 186-206.
47. Socol Y, Y.Y. Shaki. Vaccinations: Mandatory or Voluntary? Risk–Benefit Analysis. *Dose-Response* **18** (2), 1559325820920116
48. Yanovskiy M, O.N. Levi, Y.Y. Shaki and Y. Socol. Consequences of a large-scale nuclear accident and guidelines for evacuation: a cost-effectiveness analysis. *International Journal of Radiation Biology* DOI: 10.1080/09553002.2020.1779962 Q1, Impact factor: 2.4 Times cited: 1.
49. Y. Socol, Y. Gofman, M. Yanovskiy and B. Brosh. Assessment of probable scenarios of radiological emergency and their consequences. *International Journal of Radiation Biology* DOI: 10.1080/09553002.2020.1798544, Q1, Impact factor: 2.4. Times cited: 1.
50. Y. Socol, V.S. Rotenberg and J.S. Welsh. Radiation risk and follow-up of accidentally exposed populations: Implications of the search activity concept. *J. American College of Radiology* **18**(3) Part A (2021): 462-463. DOI: 10.1016/j.jacr.2020.06.024, Rank: Q1, Impact factor: 3.8
51. Socol Y, YY Shaki, L Dobrzyński. Irradiation of arbitrary time-dependence: Damped-oscillator model of organism's response. *IEEE Transactions on Radiation and Plasma Medical Sciences*, DOI: 10.1109/TRPMS.2020.3042720 (New journal, no impact factor yet).
52. Vaiserman, A., Cuttler, J.M. & Socol, Y. Low-dose ionizing radiation as a hormetin: experimental observations and therapeutic perspective for age-related disorders. *Biogerontology* (2021). <https://doi.org/10.1007/s10522-020-09908-5>, Rank: Q1, Impact Factor: 3.88. Times cited: 8.
53. Soyfer V, Y Socol, D Bragilovski, BW Corn. The Theoretical Value of Whole-Lung Irradiation for COVID-19 Pneumonia: A Reasonable and Safe Solution until Targeted Treatments are Developed. *Radiation Research* DOI: 10.1667/RADE-20-00261.1 Rank: Q1, Impact factor: 2.5. Times cited: 1.
54. Yanovskiy M & Socol Y. Comments on “Elena Alexandrovna Timofeeva-Resovskaya at the forefront of radiobiology in the XX century” *Int J Rad Biology* doi: 10.1080/09553002.2021.1956012, Rank: Q1, Impact factor: 2.4

### Peer-Reviewed Papers in Refereed Conference Proceedings

1. Y. Socol, E. Dyunin, A. Gover et al. *Present Status of the Israeli FEL: Increasing FEL Power by Electron Beam Energy Boosting*. FEL 2006—28<sup>th</sup> International Free Electron Laser Conference, Aug 27 – Sep 01, 2006, Berlin. pp. 352-355, poster
2. M. Einat, N. S. Ginzburg, N. Yu. Peskov, M. I. Petelin, A. Gover, Y. Socol, A. Kaminsky, S. Sedykh, J. Lucas. *Development of Powerful FEMs for X, Ka and W Bands for Physical and Industrial Applications*. FEL 2006—28<sup>th</sup> International Free Electron Laser Conference, Aug 27 – Sep 01, 2006, Berlin. pp. 390-392, poster
3. A. Faingersh, J. Dadoun, Kh. Garb, A. Gover, Y. Socol, G.G. Denisov, M.Y. Shmelyov, M. Einat, B. Kapilevich, B. Litvak, Y. Pinhasi, A. Yahalom. *New Resonator for the Israeli FEL*. FEL 2006—28<sup>th</sup> International Free Electron Laser Conference, Aug 27 – Sep 01, 2006, Berlin. pp. 349-351, poster
4. Y. Socol, G.N. Kulipanov, O.A. Shevchenko, N. Vinokurov, A.N. Matveenko. *13.5-nm Free-Electron Laser for EUV Lithography*. FEL 2010—32<sup>nd</sup> International Free Electron Laser Conference, Aug 23–27, 2010, Malmo, Sweden. pp.250-252, poster
5. Y. Socol. *Changing Attitude to Radiation Hazards and Consequent Opportunities for LINAC Applications* LINAC12—26<sup>th</sup> Linear Accelerator Conference, Sep 9-14, 2012, Tel-Aviv, Israel. pp. 288-290, poster.
6. Y. Socol. *Positive Trends in Radiation Risk Assessment and Consequent Opportunities for Linac Applications* LINAC14—27<sup>th</sup> Linear Accelerator Conference, Aug 31–Sep 5, 2014, Geneva, Switzerland. pp. 1202-1206, invited lecture at the closing session.

## Patents

1. *Passive solar trackers based on thermo-magnetic effects*. Provisional application US 62/315,021 (2016).

## 7. Funded Projects, Grants or Contracts

### Before latest appointment

1. 1988 – 1990 *R&D of industrial thermo-magnetic alloys*. Funding agency: USSR Min. of Metallurgy. Recipient: Dr. V.V. Sadchikov, I.P. Bardin Research Institute for Ferrous Metallurgy. Role: responsible for the experiments and data processing.
2. 1999 – 2003 *Development of water-based inks for inkjet process*. Funding agency: Chief Scientist, Min. of Economics (MAGNET – DPI2000+ consortium). Recipient: Prof. Arie Zaban, Bar-Ilan University. Role: printing-evaluation team leader
3. 2003 – 2006 *Research and development of the Israeli Free-Electron Laser*. Funding agencies: Min. of Science, Min. of Defense (DDR&D). Recipients: Prof. Avraham Gover (Tel-Aviv University), Prof. Yosef Pinhasi (Ariel University). Role: project coordinator
4. 2005 – 2006 *Feasibility study of airborne infrared free-electron laser*. Funding agency: ELTA Systems Ltd., Chief Scientist, Min. of Economics. Recipients: Prof. Avraham Gover (Tel-Aviv University), Prof. Yosef Pinhasi (Ariel University). Role: project leader.
5. 2006 – 2007 *THz detection of concealed objects*. Funding agency: Chief Scientist, Min. of Economics (MAGNET – Avnet37 consortium). Recipient: Prof. Yosef Pinhasi, Ariel University. Role: team coordinator.
6. 2007 – 2015 *R&D of high-power lasers and applications (classified)*. Funding agency: ELTA Systems Ltd., Recipient: Yehoshua Socol, Falcon Analytics. Role: technology leader.
7. 2017 – 2018 *Development of damped-oscillator model for stochastic and deterministic health effects of ionizing radiation*. Funding agency: Jerusalem College of Technology. Recipient: Yehoshua Socol. Role: principal investigator
8. 2017 – 2018 *Development of mathematical medical-economical model for estimation of evacuation expedience in radiological emergency*. Funding agency: Jerusalem College of Technology. Recipient: Yehoshua Socol. Role: principal investigator

### After latest appointment

9. 2018 – 2019 *Radiological emergency – assessment of probable scenarios and their consequences (Red Team)*. Funding agency: Jerusalem College of Technology. Recipient: Yehoshua Socol. Role: principal investigator
10. 2021 – 2022 *Artificial intelligence for integration of multimodal systems biology data from small size data sets: modeling intestinal tumorigenesis with or without chronic low-dose gamma-irradiation*. In collaboration with IRSN, France. Funding: 80,000 € per year. Funding agency: Israeli-French High Council for Scientific & Technological Cooperation – Research Program "Maïmonide-Israel". Recipient: Yehoshua Socol. Role: principal investigator

## 8. Other Relevant Academic and Professional Activities

### Before latest appointment

#### *Courses taught*

- *Ariel University*, 2003 – 2006:  
Stochastic Signals and Noise • Introduction to Lasers • Semiconductor Materials & Devices • Probability and Statistics • Introduction to Numerical Methods • Digital Systems
- *Shamoon College of Engineering*, 2015 – 2016:  
Probability and Statistics • Linear algebra • Ordinary differential equations
- *Technion civil engineering program (at Jerusalem College of Engineering)*, 2017 – 2018: Probability and Statistics
- *Jerusalem College of Technology*  
Nanotechnologies • Optical electronics • Digital systems • Physics B (Electricity and Magnetism) • Signals and Systems

#### *Course material developed*

- *Ariel University*, 2005 – 2006: Stochastic Signals and Noise (upgrade)
- *Jerusalem College of Technology*, 2018: Signals and Systems–Laboratory Manual (upgrade)
- *Jerusalem College of Engineering*, 2017: Probability and Statistics

#### *Journal refereeing*

- Radiation Research
- Dose-Response
- International Journal of Molecular Sciences,
- International Journal of Environmental Research and Public Health

#### *Conference organization*

- *Risk Assessment of Nuclear Accidents*. James H. (Jimmy) Belfer Memorial Symposium, Technion 29.10.2012 (with Prof. Michael Shapiro and Prof. Ezra Elias).
- *Free-Electron Lasers' Applications*. LINAC12 satellite meeting, Tel-Aviv, 11.09.2012

#### *Conference session chair*

- Session: *Nuclear and Radiation Safety*, at: *Risk Assessment of Nuclear Accidents*. James H. (Jimmy) Belfer Memorial Symposium, Technion 29.10.2012

#### *Invited Speaker*

- *Childhood Cancer from Hiroshima to Fukushima: The Myths and the Evidence*. Apulian Pediatric Endocrinology Congress, June 17-18, 2016, Brindisi, Italy
- *Positive Trends in Radiation Risk Assessment and Consequent Opportunities for LINAC Applications*. Closing session, LINAC14—27th Linear Accelerator Conference, Aug 31- Sep 5, 2014, Geneva, Switzerland
- *Systems in Nuclear Environment*. Electricity 2010—International Convention, Nov 17-20, Eilat, Israel
- *Assessing Radiological and Nuclear Terror Scenarios*. ICT's 9th International Conference on Counter-Terrorism, Sep 7-10, 2009, Herzliya, Israel
- *Nuclear Threat—New Challenge for Anti-Missile Defense Systems*, Military Technologies 2009, May 6, Airport City, Israel

## After latest appointment

### *M.Sc. student supervision*

- 2020: "SAR-based threat detection by machine learning (deep learning)". Co-supervised with ELTA Systems Ltd.

### *Committees*

- From 2020: member of the JCT M.Sc. committee

### *Courses taught*

- *Jerusalem College of Technology*  
Nanotechnologies • Optical electronics • Digital systems • Physics B (Electricity and Magnetism) • Signals and Systems • Linear Systems
- *Jerusalem College of Engineering*  
Probability and Statistics

### *Course material developed*

- *Jerusalem College of Technology*,  
2018-20: Physics B (Electricity and Magnetism)  
2018-19: Optical Electronics  
2018-20: Nanotechnologies  
2020-22: Linear Systems

### *Journal refereeing*

- Journal of Nuclear Engineering
- Energies Q2, IF = 3.3
- Science of the Total Environment Q1, IF = 6.5
- Cancers (MDPI) Q1, IF = 6.1
- Toxicology and Applied Pharmacology Q1, IF = 3.6
- PLoS ONE Q1, IF = 2.7
- Radiation Research Q1, IF = 2.7
- Int. J. Environ. Research & Pub. Health Q2, IF = 3.2
- Current Radiopharmaceuticals Q2, IF = 2.8
- Dose-Response Q2, IF = 2.4
- Expert Review of Hematology Q2, IF = 2.3
- Healthcare (MDPI) Q2, IF = 2.6
- Current Medical Imaging Reviews (CMIR)
- Current Medical Imaging (CMIM)
- Coronaviruses (Bentham Science)

### *Conference organization*

- *NPI Nuclear Power International Conference (virtual)*. Oct 15, 2020, Ariel University, Israel. Steering Committee member.

### *Conference session chair*

- Session: *Discussion*, at: *Applications of Low Radiation Doses in Medical Diagnosis and Therapy*, Sep 17-18, 2019, Kielce, Poland

**Invited Speaker**

- *Mass Evacuation for Saving Lives Following Nuclear Accident: Cost-Benefit Considerations*. NP1 Nuclear Power International Conference (virtual). Oct 15, 2020, Ariel University, Israel.
- *Irradiation of arbitrary time-dependence: mathematical model of adaptive response and oscillatory behavior*. Applications of Low Radiation Doses in Medical Diagnosis and Therapy, Sep 17-18, 2019, Kielce, Poland
- *Recent development in radiation research and consequent opportunities for accelerator applications*, MMT-2018—10<sup>th</sup> International Conference on Material Technologies and Modelling, Aug 20-24, 2018, Ariel, Israel

**9. Public Service**

- Chairman, *Academic Forum for Nuclear Awareness* ([www.AFNA-forum.org](http://www.AFNA-forum.org)). Founded in 2007, AFNA is a non-partisan organization promoting awareness and preparedness in the face of nuclear threats.
- Member, *World Nuclear Forum 193*. Founded in 2019, the Forum organizes meetings and knowledge sharing, as well as writing position papers, consulting, organizing professional conferences, lectures to the general public and more.
- Member, *To Rest in Peace* (לנוח בשלום). Founded in 2021, the registered NGO will work to instill the awareness that death from old age is a natural process – a gift from God; the NGO will work to promote the issue of palliative treatment in end-of-life situations in general and in old age in particular, from a halakhic, medical, and other points of view.