Raz Jelinek March 2025

CURRICULUM VITAE AND LIST OF PUBLICATIONS

- **Personal Details**

Department of Chemistry, Ben-Gurion University, Beer Sheva 84105, Israel.
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E-mail: razj@bgu.ac.il
Web: razlab.bgu.ac.il

- **Education**

B.Sc. (summa cum laude)	1985-1988, Hebrew University of Jerusalem, Jerusalem, Israel, Department of Chemistry.
Ph.D.	1988-1993, University of California, Berkeley, California, USA. Department of Chemistry. Adviser: Professor Alexander Pines Title of thesis: Double Rotation NMR Studies of Zeolites and Aluminophosphate Molecular Sieves.

- **Employment History**

2019 – present
Vice President and Dean for Research & Development
Ben Gurion University

2015, 2018
Visiting Professor
New York University – Shanghai (NYUSH)
Shanghai, China

2010 – present
Full Professor
Carole and Barry Kaye Chair in Applied Science
Ben-Gurion University, Department of Chemistry

2008 – 2010
Visiting Associate Professor
Johns Hopkins University, Department of Chemical and Biomolecular Engineering

2005 – 2007
Chairman
Ben-Gurion University, Department of Chemistry

2004 – 2010
Associate Professor
Ben-Gurion University, Department of Chemistry

2001 – 2004
Senior Lecturer
Ben-Gurion University, Department of Chemistry

1996-2001
Lecturer
Ben-Gurion University, Department of Chemistry

1997
Visiting Scientist
University of Pennsylvania, Department of Chemistry

1993-1996
Cancer Research Institute Postdoctoral Fellow
University of Pennsylvania, Department of Chemistry

1988-1993
Research Assistant
University of California Berkeley, Department of Chemistry

- **Professional Activities**

Positions in BGU Academic Administration

2019 – present	- Vice President and Dean for Research & Development, Ben Gurion University
2012 – 2016	- Head, Students Appeals Tribunal, Ben Gurion University
2010 – present	- Member, University Senate
2002 – 2018	- Academic Director, Biophysics Laboratory, Ilse Katz Institute of Nanotechnology
1999 – 2023	- Head, Admission Committee, Chemistry Department, Ben-Gurion University
2012	- Member, Scientific Advisory Committee, 77th ICS Meeting, Tel-Aviv
2011 – 2012	- Member, Promotion Committee, Faculty of Natural Sciences
2008 – 2010	- Member, Steering Committee, Ilse Katz Institute of Nanotechnology, Ben-Gurion University
2005 - 2006	- Director, BGU/Teva Ltd. analytical chemists training program.
2004 – 2006	- Council Member, VLSI Center, Ben-Gurion University
2003	- Fundraising Coordinator, Faculty of Natural Sciences, Ben Gurion University
2002 – 2010	- Coordinator, Biophysical Chemistry Track, Department of Chemistry, Ben-Gurion University
2002 – 2005	- Coordinator, Construction of Nanotechnology Building. Ilse Katz Institute of Nanotechnology, Ben-Gurion University

2000	- Founding Member, Ilse Katz Center for Nano- and Mesoscience and Technology (renamed the Ilse Katz Institute of Nanotechnology), Ben-Gurion University
1999	- Founding Member, Staedler Minerva Center for Mesoscopic Macromolecular Engineering, Ben-Gurion University

Professional Functions Outside of the University

2024 – present	- Head, VP-R&D Forum of Israel Universities
2024 – present	- Board Member, Dead Sea and Arava Science Center
2024	- Co-founder, *Myco Telos, Ltd.* (Startup company focusing on yeast-fermented alternative proteins)
2022 – present	- Co-Editor, *Journal of Colloids and Interface Science* (IF=9.95)
2021	- Co-founder and Board Member, *Biotic Therapeutics Ltd*. (Startup company focusing on kefir-based functional food and therapeutics)
2020	- Chairman, Isranalytica 2020
2019 – 2020	- Member, International Chair Committee, NICE-2020 Conference on Bio-Based and Bio-Inspired Chemistry & Materials
2019 – present	- Member, Board of Directors, BGNegev Technologies Ltd.
2019 – present	- Member, Board of Directors, National Institute for Biotechnology in the Negev (NIBN) Ltd.
2019 – 2022	- Member, Management Committee, COST Action CA18103 "Innovation with Glycans: new frontiers from synthesis to new biological targets"
2019	- Member, Organizing Committee, Isranalytica, Tel Aviv, 2019
2017 - 2026	- Member, Scientific Advisory Committee, Singapore-HUJI Alliance for Research and Enterprise (SHARE)
2017	- Co-Organizer, Symposium on “Carbon quantum dots: emerging science and technology”, Materials Research Society Fall Meeting, Boston
2017	- Co-Organizer, International Conference on “Nanoscience and Nanotechnology at Interfaces” (NaNaInt), Institute of Advanced Sciences, Jerusalem
2015	- Co-Organizer, International Workshop on "Nanoparticles at the Interface Between Biology and the Materials World", Rehovot
2013	- Symposium Organizer “Multifunctional polymer-based materials”, MRS Spring Meeting, San Francisco
2012	- Member, Scientific Committee, Bioinspired and Biobased Chemistry & Materials Conference, Nice, France
2006	- Organizer and Chairman, 71th Meeting of the Israel Chemical Society
2006 – 2008	- Israel Chemical Society Representative, Working Party on Chemistry in Microsystems, EuChemMS
2006 – 2008	- Member of the Executive Committee, Israel Chemical Society

Industry relationships and consulting (last 10 years)

2024 – present	- Joint R&D פרמחקבא, ALS Ltd (traded in ASX: ALQ)
2015 - 2016	- Consultant, Dr. Reddy's Laboratories, Bachupally, India.
2014	- Consultant, Tortech/Plasan Ltd, Sasa, Israel

2013 – 2014 - Consultant, Sphere Fluidics Ltd., Cambridge, UK

Other public activities:

2024 – present Board Member, “Chaim Vesviva” (Life and Environment), the parent organization of environmental NGOs in Israel
2018 Co-founder and Head (2018-2020), "Toshavim Mashpi'im BeModiin" (Residents Influence in Modiin), an environmental NGO.
2014 – 2018 Member, Committee on Tourism and Preservation, Modiin City Council.

- **Educational Activities**

Courses Taught
- 2018 Environment and Energy, NYU-Shanghai
- 2015 Foundations of Science – Chemistry, Freshman class, NYU-Shanghai
- 2009 – present: Biomimetic and Bio-inspired Chemistry – M.Sc. level, Ben Gurion University
- 2009 – present: Bionanotechnology – M.Sc. level, Ben Gurion University
- 2004 – 2010: Elementary and Analytical Chemistry, B.Sc. level, Ben-Gurion University
- 2000 – present: General Chemistry – B.Sc. level, Ben-Gurion University
- 1998 – 2006: Biomolecular Analysis by Computers – M.Sc. level, Ben-Gurion University
- 2000 – 2010: Selected Topics in Biophysical Chemistry – M.Sc. level, Ben-Gurion University

Recent Teaching Ranking (student grading, 1 to 5 scale, 5 is maximum score)

- 2022 General Chemistry: **4.5 (**out of 5) (Faculty of Natural Sciences average: 3.6)

Research Students
- Noa Prishkolnik, current MSc student, Ben Gurion University
- Esra Mhareeq, current MSc student, Ben Gurion University
- Kholod Alatawna, current MSc student, Ben Gurion University
- Yogev Yechezkel, current PhD student, Ben Gurion University
- Elinor Slavsky, current PhD student, Ben Gurion University
- Zurik Shamish, current PhD student, Ben Gurion University
- Sisira Mambram Kunnath, current PhD student, Ben Gurion University
- Daniel Bloch, PhD 2023. Ben Gurion University
- Shani Ben Zikri, Ph.D. 2023. Ben-Gurion University
- Elad Arad, Ph.D. 2023. Ben-Gurion University
- Orit Malka, Ph.D. 2022. Ben-Gurion University
- Reut Israeli, Ph.D. 2022. Ben Gurion University
- Ravit Malishev, Ph.D. 2021. Ben-Gurion University
- Ahiud Morag, Ph.D. 2019. Ben Gurion University
- Xiuxiu Yin, Ph.D. 2018. Ben Gurion University
- Liron Philosof, Ph.D. 2013, Ben-Gurion University

- Liron Silbert, Ph.D. 2013, Ben-Gurion University
- Shani Eliyahu, Ph.D. 2011, Ben-Gurion University
- Natalie Groisman, Ph.D. 2009. Ben-Gurion University
- Tania Sheynis, Ph.D. 2009. Ben-Gurion University
- Roman Volinsky, PhD 2007. Ben-Gurion University
- Marina Katz, PhD 2007. Ben-Gurion University
- Anna Shteinberg, M.Sc. 2022. Ben Gurion University
- Dana Zimmerman, M.Sc. 2022. Ben-Gurion University
- Inna Bourbo, M.Sc. 2021. Ben Gurion University
- Nick Zerby, M.Sc. 2019. Ben-Gurion University
- Yossi Peretz, M.Sc. 2019. Ben-Gurion University
- Guy Otis, M.Sc. 2019. Ben-Gurion University
- Gil Choona, M.Sc. 2016. Ben Gurion University
- Reut Shafir, M.Sc. 2016. Ben-Gurion University
- Alex Trachtenberg, M.Sc. 2015. Ben-Gurion University
- Ella Mann, M.Sc. 2015. Ben-Gurion University
- Shachar Avraham, M.Sc. 2014. Ben-Gurion University
- Noga Gal, M.Sc. 2013, Ben-Gurion University
- Ahiud Morag, M.Sc. 2013, Ben-Gurion University
- Yelena Demihovsky, M.Sc. 2013, Ben-Gurion University
- Anat Friediger, M.Sc. 2013, Ben-Gurion University
- Alina Mogilevski, M.Sc. 2011. Ben-Gurion University
- Ehud Bazar, M.Sc. 2011. Ben-Gurion University
- Amit Shtainfeld, M.Sc. 2010. Ben-Gurion University
- Or Raifman, M.Sc. 2010. Ben-Gurion University
- Nirit Hanin, M.Sc. 2009. Ben-Gurion University
- Noa Markovich, M.Sc. 2008. Ben-Gurion University
- Sarit Fridman, M.Sc. 2008. Ben-Gurion University
- Izek Ben Shlush, M.Sc. 2008. Ben-Gurion University
- Miri Sokolovsky, M.Sc. 2008. Ben-Gurion University
- Alex Pevzner, M.Sc. 2008. Ben-Gurion University
- Dror Meir, M.Sc. 2007. Ben-Gurion University
- Elena Shtelman, M.Sc. 2005. Ben-Gurion University
- Revital Halevi, M.Sc. 2004. Ben-Gurion University
- Shoshana Rozner, M.Sc. 2003. Ben-Gurion University
- Jan Eisenman, visiting MSc student, 2019
- Kumar Sagar Jaiswal, visiting PhD student, 2021-2022
- Kaviya Parambath Kootery, visiting research student. 2012 - 2015
- Agnieszka Mech, visiting research student. 2007-2009
- Danilo Malferrari, visiting research student. 2011
- Magalie Lebreton, visiting research student. 2003 – 2004
- Julia Gevin, visiting research student. 2003 – 2004
- Damien Evrard, visiting research student. 1999 – 2001
- Laurent Boyer, visiting research student. 1997 – 1999

Post-doctoral Fellows

- Dr. Anita Samage (PhD Jain University, Bangalore) 2024 – present
- Dr. Maruthapandi Moorthy (PhD Bar Ilan University, Israel) 2024 –
- Nitzan Shauloff, (PhD 2024. BGU) 2024 – present
- Nila Nandha Kadamanil, (PhD 2024. BGU) 2024 – present

- Dr. Shubra Bhaumik (PhD IISER-K, India) 2023 - present
- Dr. Sudipta Biswas (PhD IIT Kharagpur, India) 2022 - present
- Dr. Rajendran Manikandan (PhD CSIR National Chemistry Laboratory, Pune, India) 2020 - 2023
- Dr. Amrita de Adhikari (PhD IIT Dhanbad) 2019 - 2020
- Dr. Rajesh Bisht (PhD CSIR National Chemistry Laboratory, Pune, India) 2019 – 2022
- Dr. Vartika Kadhari (PhD CSIR National Chemistry Laboratory, Pune, India) 2019 – 2020
- Dr. Seema Singh (PhD IIT Patna, India) 2018 - 2020
- Dr. Kesava Rao (PhD University of Hyderabad, India) 2017 – 2019
- Dr. Nagappa Taradal (PhD Karnatak University, India) 2015 – 2019. Current Position: Assistant Professor, Undergraduate and Postgraduate College, Belagavi, India.
- Dr. Sagarika Bhattacharya (PhD University of Calcutta) 2015 – 2019. Current position: Assistant Professor, NIT Raipur, Induia)
- Dr. Susanta Bhunia (PhD Indian Association for the Cultivation of Science, Kolkata) 2015 – 2017. Current Position: Associate Professor, Velore Institute of Technology, India.
- Dr. Sukhendu Nandi (PhD University of Wuppertal, Germany) 2013 – 2016. Current position: INSPIRE Faculty Member, IIT Chandri, India.
- Dr. Joydeb Manna (PhD Indian Institute of Chemical Technology, Hyderabad) 2014 – 2015. Current position: Assistant Professor, Mahishadal Raj College, India.
- Dr. Hao Jiang (PhD University of Science and Technology, China) 2013 – 2015. Current position: Professor, Huazhong University of Science and Technology, Wuhan, China.
- Dr. T.P. Vinod (Ph.D. Kongju National University, Korea) 2012 – 2015. Current position: Associate Professor, Christ University, Bangalore, India.
- Dr. Tania Sheynis (Ph.D. Ben-Gurion University) 2009 – 2011. Current position: Teva Pharmaceuticals Ltd.
- Dr. Marina Katz (Ph.D. Ben-Gurion University) 2007 – 2010. Current position: Research Scientist, Teva Ltd.
- Dr. Myint Myint Khine (Ph.D. Halle University, Germany) 2007 – 2009. Current position: Assistant Professor, Yangon University, Myanmar
- Dr. Roman Volinsky (Ph.D. Ben-Gurion University) 2007 – 2009 Current position: Research Associate, Aalto University, Finland.
- Dr. Zulfiya Orynbayeva (Ph.D. Almaty University, Kazakhtan) 2002 – 2007. Current position: Research Professor, Drexel University.
- Dr. Yogesh Scindia (Ph.D. Indian Institute of Technology, Bombay) 2004 – 2006. Current position: Assistant Professor, University of Florida.
- Dr. Fabien Gaboriaud (Ph.D. Rennes University, France) 2000 – 2002. Current position: Research Director, Michelin Srl., Nancy, France.
- Dr. Ramesh Jaganathan (Ph.D. Indian Institute of Science, Bangalore) 1998 – 2000
- Dr. Nagarajao Suryaprakash (Ph.D. Indian Institute of Science, Bangalore) 1997 – 1999. Current position: Professor, IISc, Banglaore.

- Dr. Sofiya Kolusheva (Ph.D. Tashkent University, Uzbekistan) 1997 – 2002. Current position: Staff Scientist, Ilse Katz Institute of Nanotechnology, BGU.

- **Awards, Citations, Honors, Fellowships**

Honors, Citation Awards

- 1988 Student Speaker at Israel's Knesset (parliament), National Award Ceremony for Distinguished Students
- 1998 Siegel-Roger-Brown Prize, the Israel Academy of Science and Humanities
- 2003 Participant, the 1st Middle East Frontiers of Science and Engineering Conferences, Istanbul (among 25 selected leading scientists and engineers from Israel)
- 2008 – 2010 Ruth L. Kirschstein National Research Service, Senior Fellowship Award, the National Institutes of Health (NIH), USA
- 2009 Toronto Prize for Research Excellence, Ben-Gurion University
- 2011 Distinguished Lecturer Award, Ben Gurion University
- 2015 Carole and Barry Kaye Chair in Applied Science
- 2016 – 2021 Guest Professor, Jilin University, China
- 2018 UK-Israel Science Lectureship Award
- 2020 Quality of Teaching Award, Ben Gurion University
- 2021 Wohl Clean Growth Alliance Award
- 2021 ICS-Adama Prize for Technological Innovation, the Israel Chemical Society

- **Scientific Publications**

Books - Author

1. "Biomimetics, a Molecular Perspective", **Raz Jelinek**¸ De-Gruyter, Berlin 2013, ISBN: 978-3-11-028117-0. **2nd Edition 2021.**
2. "Nanoparticles", **Raz Jelinek**¸ De-Gruyter, Berlin 2015, ISBN: 978-3-11-033002-1.
3. "Carbon Quantum Dots", **Raz Jelinek,** Springer, Berlin 2016, ISBN: 978-3-319-43911-2
4. "Membranes", **Raz Jelinek,** De-Gruyter, Berlin 2018, ISBN: 978-3-11-045369-0.

Refereed Articles in Scientific Journals

- **Total number of publications: 253**
- **h-index: 52 (ISI Web of science); 52 (Scopus); 60 (Google Scholar)**
- **Sum of times cited: 8599 (without self-citations; ISI Web of science)**

Publications (last FIVE years)

189. ″Purpurin modulates Tau-derived VQIVYK fibrillization and ameliorates Alzheimer's disease-like symptoms in animal model″
V. Guru KrishnaKumar, Dana Shwartz, Elad Arad, Edward Pichinuk, Hamutal Engel, Avi Raveh, **Raz Jelinek**, Ehud Gazit, Daniel Segal
Cellular and Molecular Life Sciences, **2020**, *77,* 2795-2813.

190. ″Solar-Mediated Oil-Spill Cleanup by a Carbon Dot-Polyurethane Sponge″
Seema Singh, **Raz Jelinek**
Carbon, **2020**, *160*, 196-203.

Jelinek, R.

191. ″Imaging flow cytometry illuminates new dimensions of prion-protein membrane interactions″
Reut Israeli, Sofiya Kolusheva, Uzi Hadad, **Raz Jelinek**
Biophysical Journal, **2020**, *118,* 1270-1278.

192.″An Aβ42 double mutant inhibits Aβ42-induced plasma and mitochondrial membrane disruption in artificial membranes, isolated organs and intact cells″
Ofek Oren, Shani Ben Zichri, Ran Taube, **Raz Jelinek**, Niv Papo
ACS Chemical Neuroscience, **2020**, *11,* 1027-1037.

193.″Revisiting thioflavin T (ThT) fluorescence as a marker of protein fibrillation – the prominent role of electrostatic interactions"
Elad Arad, Hodaya Green, **Raz Jelinek***, Hanna Rapaport*
Journal of Colloids & Interface Science, **2020**, *573,* 87-95.

194.″Polydiacetylene-perylenediimide supercapacitor"
Amrita De Adhikari, Ahiud Morag, Joonsik Seo, Jong-Man Kim, **Raz Jelinek**
ChemSusChem, **2020**, *13*, 3230-3236.

195.″Polydiacetylene hydrogel self-healing capacitive strain sensor"
V. Kesava Rao, Nitzan Shauloff, XiaoMeng Sui, H. Daniel Wagner, **Raz Jelinek**
Journal of Materials Chemistry C, **2020**, *8,* 6034-6041.

196.″Porous graphene oxide-metal ion composite for selective sensing of organophosphate gases"
Nitzan Shauloff, Nagappa Teradal, **Raz Jelinek**
ACS Sensors, **2020***, 5,* 1573-1581.

197.″Nickel Doping Significantly Enhances the Power Density of Ruthenium-Based Supercapacitors"
Ahiud Morag, Nitzan Shauloff, Nitzan Maman, Natalya Froumin, Vladimir Ezersky, **Raz Jelinek**
Batteries & Supercaps, **2020***, 3,* 946-952. Selected for a Cover Image.

198.″Sunlight-activated phase transformation in carbon dot-hydrogels facilitates water purification and optical switching "
Seema Singh, **Raz Jelinek**
ACS Applied Polymer Materials, **2020***, 2,* 2810-2818.

199.″Tyrosine carbon dots inhibit fibrillation and toxicity of the human Islet amyloid polypeptide"
Daniel Bloch, Shani Ben Zichri, Sofiya Kolusheva, **Raz Jelinek**
Nanoscale Advances, **2020***, 2,* 5866-5873. (Article selected to appear in a special collection on "Quantum and carbon dots")

200.″The pro-apoptotic domain of BIM protein forms toxic amyloid fibrils"
Ravit Malishev, Shani Ben- Zichri, Ofek Oren, Nitzan Shauloff, Ran Taube, Niv Papo, **Raz Jelinek**
Cellular and Molecular Life Sciences, **2021***, 78,* 2145-2155

201.″Mitochondrial membrane transformations in prostate and colon cancers and their biological implications"
Shani Ben Zichri, Sofiya Kolusheva, Alexander I Shames, Elina Abaev Schneiderman, Juan L Poggio, David E Stein, Elena Doubijensky, Dan Levy, Zulfiya Orynbayeva, **Raz Jelinek**
BBA-Biomembranes, **2021***, 1863,* 183471

202."The Amphibian Antimicrobial Peptide Uperin 3.5 is a Cross-α/Cross-β Chameleon Functional Amyloid**"**
Nir Salinas, Einav Tayeb-Fligelman, Massimo Sammito, Daniel Bloch, **Raz Jelinek**, Dror Noy, Isabel Uson, and Meytal Landau
PNAS, **2021***, Vol. 118,* e2014442118

203."Aggregation-dependent chromism and photopolymerization of aminoanthraquinone-substituted diacetylenes**"**
Rajesh Bisht, Vartika Dhyani, **Raz Jelinek**
Advanced Optical Materials, **2021***,* 9, 2001497.

204."Sniffing Bacteria with a Carbon-Dot Artificial Nose**"**

Nitzan Shaulof, Ahiud Morag, Karin Yaniv, Seema Singh, Ravit Malishev, Ofra Paz-Tal, Lior Rokach, **Raz Jelinek**
Nano-Micro Letters, **2021***, 13,* 112. **99% percentile in media exposure among all tracked scientific articles of the same age; in the top 5% in all articles ever tracked (Altmetric)**

205."Modulation of tau amyloid assemblies associated with Alzheimer's disease by Naphthoquinone-Dopamine hybrid"
Ashim Paul, Guru KrishnaKumar Viswanathan, Adi Huber, Elad Arad, Hamutal Engel, **Raz Jelinek**, Ehud Gazit, Daniel Segal
FEBS Journal, **2021***, 13,* 112

206."Cross-kingdom quorum sensing disruption by probiotic milk-fermented yeast"
Orit Malka, Dorin Kalson, Karin Yaniv, Reut Shafir, Ariel Kushmaro, Michael M. Meijler, **Raz Jelinek**
Microbiome, **2021***, 9,* 70. **99.5% percentile in media exposure among all tracked scientific articles of the same age; in the top *0.2%* all articles ever tracked (Altmetric)**

207."Carbon Dot-Polymer Nanoporous Membrane for Recyclable Sunlight-Sterilized Facemasks"
Seema Singh, Nitzan Shauloff, Chetan P. Sharma, Christopher J. Arnusch, **Raz Jelinek**
Journal of Colloids and Interface Science, **2021***, 592,* 342-348.

208."Inhibition of *Staphylococcus aureus* Biofilm-forming Functional Amyloid by Molecular Tweezers"
Ravit Malishev, Nir Salinas, James Gibson, Angela Bailey Eden, Joel Mieres-Perez, Yasser Ruiz-Blanco, Orit Malka, Sofiya kolusheva, Frank-Gerrit Klärner, Thomas Schrader, Elsa Sanchez-Garcia, Chunyu Wang, Meytal Landau, Gal Bitan, **Raz Jelinek**
Cell Chemical Biology, **2021***, 28,* 1310-1320.

209."Triphenylphosphonium-Derived Bright Green Fluorescent Carbon Dots for Mitochondrial Targeting and Rapid Selective Detection of Tetracycline"
Sathish Rajendran, Shani Ben Zichri, Varsha UshaVipinachandran, **Raz Jelinek**, Susanta Kumar Bhunia
ChemNanoMat, **2021***, 7,* 545-552.

210."Tungsten-disulfide / polyaniline high frequency supercapacitors"
Amrita De Adhikari, Nitzan Shauloff, Yury Turkulets, Ilan Shalish, **Raz Jelinek**
Advanced Electronic Materials, **2021***, 7,* 2100025.

*211."*A Mechanism for the Inhibition of tau Neurotoxicity: Studies with Artificial Membranes, Isolated Mitochondria and Intact Cells"
Segev Naveh Tassa, Shani Ben Zichri, Shiran Lacham-Hartman, Ofek Oren, Zeev Slobodnik, Ekaterina Eremenko, Debra Toiber, **Raz Jelinek**, Niv Papo
ACS Chemical Neuroscience, **2021***, 12,* 1563-1577.

*212."*Chromatic Dendrimer / Polydiacetylene Nanoparticles"
Reut Israeli, Sofiya Kolusheva, Pablo Mateos-Gil, Electra Gizeli, **Raz Jelinek**
ACS Applied Polymer Materials, **2021***, 3,* 2931-2937.

*213."*b-amyloid fibrils catalyze neurotransmitter degradation"
Elad Arad, Avigail Baruch-Leshem, Hanna Rapaport, **Raz Jelinek**
Chem Catalysis, **2021***, 1,* 908-922.

214."Dual concentration-dependent effect of Ascorbic acid on PAP(248-286) amyloid formation and SEVI-mediated HIV infection"
Satabdee Mohapatra, Guru Krishna Kumar Viswanathan, Lukas Wettstein, Elad Arad, Ashim Paul, **Raz Jelinek**, Jan Münch, Daniel Segal
RSC Chemical Biology, **2021***, 2,* 1534-1545.

215."Metal-catalyst-free gas-phase synthesis of long-chain hydrocarbons"
Lidia Martinez, Pablo Merino, Gonzalo Santoro, Jose Martinez, Katsanoulis Stergios, Jesse Ault, Alvaro Mayoral, Luis Vazquez, Mario Accolla, Alexandre Dazzi, Jeremie Mathurin, Ferenc

Borondics, Enrique Blázquez-Blázquez, Nitzan Shauloff, Rosa Lebron-Aguilar, Jesus Quintanilla, **Raz Jelinek**, José Cernicharo, Howard Stone, Victor de la Pena O'Shea, Pedro de Andres, George Haller, Gary Ellis
Nature Communications, **2021***, 12,* 5937.

216."Bcl-2-homology-only pro-apoptotic peptides modulate β-amyloid aggregation and toxicity" Shani Ben- Zichri, Ravit Malishev, Ofek Oren, Daniel N. Bloch, Ran Taube, Niv Papo, **Raz Jelinek**
ACS Chemical Neuroscience, **2021**, *12,* 4554-4563.

217."Size-selective detection of nanoparticles in solution and air by imprinting" Linoy Dery, Nitzan Shauloff, Yury Turkulets, Ilan Shalish, **Raz Jelinek***, Daniel Mandler*
ACS Sensors, **2022**, *7,* 296-303.

218."Amyloid fishing: β-amyloid adsorption using tailor-made coated titania nanoparticles" Elad Rad, **Raz Jelinek**, Hanna Rapaport
Colloids and Surfaces B: Biointerfaces, **2022**, *112,* 112374.

219."Visual Organophosphate Vapor Sensing by Dibenzylidine Derivatives Exhibiting Intramolecular Charge Transfer and Aggregation Induced Emission" Rajendran Manikandan, Nitzan Shauloff, Ashim Nandi, Alexander Pevzner, Sharon Marx, **Raz Jelinek** *Journal of Materials Chemistry C,* **2022**, *10*, 5458-5465.

220."Catalytic amyloids", Elad Arad, **Raz Jelinek** *Trends in Chemistry,* **2022**, *4,* 907-918.

221."Native glucagon amyloids catalyze key metabolic reactions", Elad Arad, Gal Yosefi, Sofiya Kolusheva, Ronit Bitton, Hanna Rapaport, **Raz Jelinek***, ACS Nano,* **2022**, *16,* 12889-12899.

222."Resveratrol Carbon Dots Disrupt Mitochondrial Function in Cancer Cells", Shani Ben-Zichri, Sathish Rajendran, Susanta K. Bhunia, **Raz Jelinek***, Bioconjugate Chemistry,* **2022,** *33,* 1663-1671.

223."Stimulus-responsive Tubular Conjugated Polymer 2D Nanosheets", Daewoong Jang, Jung-Moo Heo, Fadilatul Jannah, Mohammed Iqbal Khazi, Young Ji Son, Jaegeun Noh, Hyosung An, Soon Mo Park, Dong Ki Yoon, Nila Nandha K, **Raz Jelinek*,** Jong-Man Kim**, Angewandte Chemie International Edition,* **2022,** *61*, e202211465. ***Very Important Paper (VIP)***.

224."High resolution cryo-electron microscopy reveals unique striated hollow structure of photocatalytic macrocyclic polydiacetylene nanotubes", Nila Nandha Kadamannil, Jung-Moo Heo, Daewoong Jang, Ran Zalk, Sofiya Kolusheva, Raz Zarivach, Jong-Man Kim, **Raz Jelinek***, Journal of the American Chemical Society,* **2022,** *144,* 17889-17996.

225."Ultra-low-temperature reversible thermochromism and contactless bacterial sensing by chalcone-functionalized polydiacetylene", Rajendran Manikandan, Nitzan Shauloff, **Raz Jelinek***, Journal of Materials Chemistry C,* **2022,** *10,* 16265-16272.

226."Synergistic activity of anti-cancer polyphenols embedded in amphiphilic dendrimer nanoparticles", Shani Ben-Zichri, May Meltzer, Shiran Lacham-Hartman, Sofiya Kolusheva, Uzi Hadad, Niv Papo, **Raz Jelinek,** *ACS Applied Polymer Materials,* **2022**, 4, 12, 8913-8925.

227."Multispectral and circular polarization-sensitive carbon dot polydiacetylene capacitive photodetector", Nitzan Shauloff, Rajesh Bisht, Yury Turkulets, Rajendran Manikandan, Ahiud Morag, Avi Lehrer, Joshua Baraban, Ilan Shalish, **Raz Jelinek,** *Small,* **2023**, *19,* 2206519.

228."Scavenging neurotoxic aldehydes by lysine carbon dots", Daniel Bloch, Michele Sandre, Shani Ben Zichri, Anna Masato, Sofiya Kolusheva, Luigi Babaco, **Raz Jelinek,** *Nanoscale Advances,* **2023**, *5*, 1356 - 1367. ***Selected for inclusion in the 2023 Popular Advances collection.***

229."Genistein carbon dots exhibit antioxidant and anti-inflammatory effects *in vitro"*, Kumar Sagar Jaiswal, Orit Malka, Nitzan Shauloff, Marina Bersudsky, Elena Voronov, Bhawna Gupta, **Raz Jelinek,** *Colloids and Surfaces B: Biointerfaces,* **2023**, *223,* 113173.

*230."*Tryptophol acetate and tyrosol acetate, small molecule metabolites identified in a probiotic mixture, inhibit hyperinflammation", Orit Malka, Ravit Malishev, Marina Bersudsky, Manikandan Rajendran, Mathumathi Krishnamohan, Jakeer Shaik, Evgeni Tikhonov, Eliya

Sultan, Daniel Chamovitz, Omry Koren, Ron N. Apte, Benyamin Rosental, Elena Voronov, **Raz Jelinek,** *Journal of Innate Immunity,* **2023***, 15,* 531-547.

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237. "*Staphylococcus aureus* functional amyloids catalyze degradation of β-lactam antibiotics", Elad Arad, Kasper B. Pedersen, Orit Malka, Sisira Mambram Kunnath, Nimrod Golan, Polina Aibinder, Birgit Schiøtt, Hanna Rapaport, Meytal Landau, **Raz Jelinek***, Nature Communications,* **2023,** *14,* 8198.

238. "Hierarchically self-assembled multifunctional nanotoroids", Nila Nandha Kadamannil, Daewoong Jang, Haksu Lee, Jong-Man Kim, **Raz Jelinek**. *Small Methods,* **2024,** *8,* 2301286.

239. "Carbon dot / polylactic acid nanofibrous membranes for solar-mediated oil absorption/separation: performance, environmental sustainability, ecotoxicity and reusability", Monica Torsello, Shani Ben-Zichri, Lucia Pesenti, Sisira M. Kunnath, Chiara Samorì, Andrea Pasteris, Greta Bacchelli, Noa Prishkolnik, Uri Ben-Nun, Serena Righi, Maria L. Focarete, Sofiya Kolusheva, **Raz Jelinek**, Chiara Gualandi, Paola Galletti, *Heliyon,* **2024**, *10,* e25417.

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243. "High performance functionalized anthracene organic supercapacitors", Sudipta Biswas, Rajendran Manikandan, Nitzan Shauloff, Shubhra Kanti Bhaumik, **Raz Jelinek**, *RSC Applied Interfaces,* **2024**, *1,* 920-927.

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248. "Capacitive carbon dot electronic nose for bacterial detection", Vinoth Selvaraj, Nitzan Shauloff, **Raz Jelinek,** *Inventions Disclosure,* **2024***,* 4, 100031.

249. "Similar but distinct – Biochemical Characterization of the *Staphylococcus aureus* Serine Hydrolases FphH and FphI", Matthias Fellner, George Randall, Ianah R. C. G. Bitac, Annmaree K. Warrender, Ashish Sethi, **Raz Jelinek**, Itamar Kass**,** *Proteins,* **2024***,* 10.1002/prot.26785.

250."Photo-rechargeable carbon dot/thermo-responsive polymer supercapacitor", Noa Prishkolnik, Nitzan Shauloff, Sudipta Biswas, Ahiud Morag, **Raz Jelinek**, *Small Structures,* **2025,** *6,* 2400533.

251. "Photo-rechargeable organic supercapacitor via light-activatecd electrolytes", Shubhra Bhaumik, Sudipta Biswas, Nitzan Shauloff, Ahiud Morag, **Raz Jelinek**, *Advanced Science,* **2025**, *in press.*

252."Unlocking the potential of chlorophyll-based carbon dots towards water-splitting, white-light LED and encryption applications", R. Blessy Pricilla, Ali Can Guler, Pavel Urbanek, Michal Urbanek, **Raz Jelinek**, Barbora Hanulikova, Ivo Kuritka, *Carbon*, **2025**, 120205.

253. "Chiral Amine-Induced Assembly of Toroidal Structures with a Carboxylic Acid-Functionalized, Polymerizable Macrocyclic Diacetylene", Haksu Lee, Mohammed Iqbal Khazi, Daewoong Jang, Nila Nandha Kadamannil, **Raz Jelinek***, Jong–Man Kim*, *Langmuir***, 2025**, doi.org/ 10.1021/ acs.langmuir.5c00347.

Submitted manuscripts

- "Allosteric amyloid catalysis by coiled coil fibrils", Sisira Mambram Kunnath, Elad Arad, Ran Zalk, Itamar Kass, Albert Batushansky, Hanna Rapaport, **Raz Jelinek**, *submitted for publication.*
- "Exceptionally efficient overall water splitting by electrodeposited NiRu alloy-RuO_2 electrdoes", Sudipta Biswas, Nitzan Shauloff, Ahiud Morag, **Raz Jelinek**, *submitted for publication.*

Reports on Jelinek work in the general press:

- "**Flexible electronics: 21st century alchemy that's reshaping your world**" – *Haaretz International Edition,* April 2014. https://www.haaretz.com/science-and-health/.premium-new-alchemy-of-flexible-electronics-1.5243465
- "**Can a cup of yogurt 'cure' your case of COVID-19?**" – Jerusalem Post, April 2021. https://www.jpost.com/health-science/could-a-cup-of-yogurt-cure-your-case-of-covid-19-664976
- "**Israeli lab 'cures' mice of COVID-style inflammation using yogurt molecules**" – The Times of Israel, April 2021. https://www.timesofisrael.com/using-yogurt-molecules-israeli-lab-cures-mice-of-covid-style-inflammation/
- "**Yeast in kefir drink combats disease-causing bacteria**", *Medical News Today,* April 2021. https://www.medicalnewstoday.com/articles/yeast-in-kefir-drink-combats-disease-causing-bacteria
- "**Ben-Gurion University Researchers Introduce Novel Probiotic Yogurt-Based Treatment for Inflammatory Conditions**", *Yahoo Finance* https://finance.yahoo.com/news/ben-gurion-university-researchers-introduce-103900966.html

- **"Ben-Gurion University researchers developing probiotic yogurt-based drugs,** *Microbiome Times* https://www.microbiometimes.com/ben-gurion-university-researchers-developing-probiotic-yogurt-based-drugs/
- "**BGU researchers develop antibiotic tweezers to battle resistant bacteria**", *The Jerusalem Post,* May 2021 https://www.jpost.com/health-science/bgu-researchers-develop-antibiotic-tweezers-to-battle-resistant-bacteria-667162
- "**Scientists invent an artificial nose for continuous bacterial monitoring**", *Phys.Org,* June 2021 https://phys.org/news/2021-06-scientists-artificial-nose-bacterial.html
- "**Israeli researchers develop electronic nose to detect diseases, poisons**", *The Jerusalem Post,* June 2021 https://www.jpost.com/health-science/israeli-researchers-develop-electronic-nose-to-detect-diseases-poisons-671446
- "**New Study shows how amyloid plaques cause Alzheimer's disease**", *The Jerusalem Post,* August 2021 https://www.jpost.com/health-science/new-study-shows-how-amyloid-plaques-cause-alzheimers-disease-676068
- **"Do amyloid plaques cause Alzheimer's disease?".** *Psychiatric Times*, August 2021 https://www.psychiatrictimes.com/view/do-amyloid-plaques-cause-alzheimer-disease
- **"E-nose developed to detect nanoplastics in the air".** *The Science Times*, August 2022 https://www.sciencetimes.com/articles/39536/20220824/e-nose-developed-detect-nanoplastics-air.htm
- **"The electronic noses designed to prevent food poisoning",** *BBC News,* November 2023 https://www.bbc.com/news/business-67354443?fbclid=IwAR2d7h78DGa77xOhxXvGaLZS85vm7FYq-MM-XAh7m9p9oipbIIcKZhgEziY

Plenary and Invited Lectures [last five years]

Presentation of papers at conferences/meetings

2024

- "Photo-rechargeable carbon dot supercapacitors", Workshop Novel Materials and Processes for Energy, Center for Nanointegration Duisburg-Essen (CENIDE)/BGU Workshop on Energy. Duisburg, Germany.
- "Enabling Local Solutions, Achieving Global Impact", **Invited Panel Speaker,** WAITRO Summit, Nanjing, China.

2023

- "New capacitive photodetectors based on carbon dot / polymer composites", New perspectives in carbon dot design and applications Workshop. Alghero, Italy. **Invited Lecture.**
- **"**New horizons of carbon dot research", International Conference on the Cooperation and Integration of Industry, Education, Research and Application, Jilin University, China. **Invited Lecture.**

2022

- "Carbon dots: from sensing to environmental applications and back", 11th International Colloids Conference. Lisbon, Portugal. **Plenary Lecture.**
- "Carbon-dot based smart materials", Nature Inspired Creativity Engineers (N.I.C.E.) conference, Nice, France. **Keynote Lecture.**
- **"**Carbon dots in environmental applications", ACS Fall Meeting, Chicago, US. **Invited Lecture.**

2021

- "Nickel-Ruthenium High Frequency Supercapacitors", International Workshop on World-Leading Energy Materials (IWWEM), Hanyang University, Korea *(hybrid conference)*. **Invited Lecture**
- *"*Cross-kingdom quorum sensing disruption by probiotic milk-fermented yeast", Asian Chemical Biology Initiative, 2021 Online Meeting. **Invited Lecture.**
- "New strategies for disrupting bacterial biofilms and bacterial virulence", 4th CRC1093 International Symposium: Supramolecular Chemistry Meets Biology. Essen University, Germany. **Plenary Lecture.**
- **"**E-nose for "smelling" bacteria", NanoIL, Jerusalem, **Invited Lecture.**

2020

- "BIM forms cytotoxic amyloid fibrils", 4th Ulm Meeting on Amyloid Biophysics, Ulm, Germany. **Invited lecture.**

Seminar presentations at universities and institutions (last 5 years)

2024

- RWTH Aachen, Germany
- Jilin University, China
- Tel Aviv University

2023

- Technion, Israel
- Nanjing University, China
- East China Normal University, Shanghai, China

2022

- ETH Zurich
- Universidad Catolica del Maule, Chile

- **Patents and Patent Applications**

- 2014 Polydiacetylene / poly(methyl methacrylate) matrices as colorimetric and/or fluorescent detectors (US 10,101,277)
- 2015 Gold nanostructures and processes for their preparation (US 10,895,013)
- 2018 Microorganism mixtures, molecules derived therefrom, and methods of use thereof. (WO 2020/031191; US 17/266,717)
- 2018 Synthesis of antimicrobial carbon dots and uses thereof. (European Patent Application No. 19878213.8; US 12,108,759)
- 2019 An electrode and a pseudo-capacitor based on the electrode.

(US patent 11,791,108)
- 2020 Therapeutic activity of molecules extracted from fermented milk and their derivatives (US Provisional Application 63/022,598)
- 2020 Device and methods for detecting bacteria (US Provisional Application 63/112,260)
- 2020 Compositions of tryptophol derivatives and 4-ethyl-phenol derivatives and methods of using same (US Provisional Application ,63/132,619)
- 2020 Methods for modulating microbial populations (US Provisional Application 63/158,342)
- 2021 High sensitivity broad-target porous graphene oxide capacitive vapor sensor (US Patent 10,890,550)
- 2022 Therapeutic effect of molecules derived from probiotic milk-based fermentation microbial consortium ("kefir") embedded in ointments on wounds healing (PCT/IL2023/050789; WO 2024/028863)
- 2022 Functional diacetylene monomers, their polymerization and uses Thereof (WO 2024/028876)
- 2022 Detecting nanoplastics in the air (US Provisional Application 63/397,846)

- **Research Grants (last 10 years)**

- **2025-2026** Israel Innovation Authority – Kamin Grant. PI: **Raz Jelinek**
  "Capacitive organic photodetector"
  IS 1,320,000
- **2024-2026** UK-Israel BIRAX grant. Co-PIs: **Raz Jelinek,** Sheena Radford
  "Amyloid catalysis and its relationship with cognitive impairment in neurodegenerative diseases"
  GBP 180,000
- **2024-2025** HUJI/BGU Sustainability Research Program. Co-PIs: **Raz Jelinek,** Benny Chefetz
  "Deactivation of antibiotic agents in treated wastewater: Introducing a new technology based on catalytic amyloid fibrils"
  $ 30,000
- **2024-2026** Ministry of Energy. PI: **Raz Jelinek**
  "Solar chargeable organic supercapacitors"
  IS 450,000
- **2023-2026** Ministry of Science and Technology. PI: **Raz Jelinek**
  "Porous sponges containing carbon dots for oil spill removal."
  IS 750,000
- **2023** Clalit HMO-BGU Grant program. Co-PIs: **Raz Jelinek,** Uri Netz
  "Probiotic cream for skin ailments – a clinical trial"
  IS 100,000
- **2021-2023** "Kamin" Program, Israel Innovation Authority. PI: **Raz Jelinek**
  "Electronic nose for monitoring bacteria in foods"
  IS 600,000
- **2021-2023** MoST Italy-Israel Cooperation Grant. Co-PIs: **Raz Jelinek,** Paola Galletti
  "Biobased and Biodegradable Carbon Dot-Polymeric Nanofibrous Membranes for Solar-Assisted Water Remediation and Oil Spill Cleanup"

IS 400,000

- **2020-2021** Bergida Fund. PI: **Raz Jelinek**
  "Aromatic carbon dots - a new therapeutic vehicle for Parkinson's disease"
  $ 105,000
- **2020-2024** Israel Science Foundation Personal Grant. PI: **Raz Jelinek**
  "Carbon dots as new antibacterial and antiviral agents"
  IS 1,100,000
- **2019-2021** "Kamin" Program, Israel Innovation Authority. PI: **Raz Jelinek**
  "Supercapacitors for work in high frequencies"
  IS 800,000
- **2019-2022** Ministry of Energy, Co-PI: **Raz Jelinek**, Zeev Zalevsky
  " Wirelessly-charged micro-supercapacitors for reduced energy loss in microelectronics "
  Jelinek: **IS 325,000**
- **2018-2021** BG3C, Cincinnati Children's Hospital and Ben Gurion University. Co-PI: **Raz Jelinek**, David Morales, Zafar Farhan
  "Non-**i**nvasive **C**ontinuous **He**art Monitor (NICHe Monitor)"
  Jelinek: **$100,000**
- **2018-2021** Horizon 2020 Secured Society. Co-PI: **Raz Jelinek** + 8 participants.
  COSMIC; "CBRNE Detection in Containers"
  Jelinek: **Eu 335,000**
- **2017-2018** MoD Grant. **PI: Raz Jelinek**
  "Novel gas sensor for volatile materials"
  IS 165,000
- **2017-2020** Horizon 2020 FET-OPEN. Co-PI: **Raz Jelinek** + 7 participants.
  CATCH-U-DNA; "Capturing non-Amplified Tumor Circulating DNA with Ultrasound Hydrodynamics"
  Jelinek: **Eu 575,000**
- **2017-2021** Pazy Foundation Grant. Co-PI: **Raz Jelinek,** Ofra Paz-Tal
  "Molecular design and self-assembly of polydiacetylene (PDA) - ligand arrays: A potential tool for radionuclide sensing"
  IS 1,400,000
- **2017-2020** National Grant for Applied and Engineering Research, Ministry of Science and Technology. Co-PI: **Raz Jelinek,** Dani Mandler, Sharon Marx
  "New platform for monitoring and speciation of nanoparticles"
  Jelinek: **IS 400,000**
- **2017-2018** China-Israel Cooperative Scientific Research Grant, Ministry of Science and Technology. PI: **Raz Jelinek**
  "Carbon quantum dots coupled to metal nanoparticles: properties and applications"
  Jelinek**: IS 510,000**
- **2017-2018** Marcus Foundation. Co-PI: **Raz Jelinek,** Shai Arnon
  "Carbon quantum dot "light tracers" for monitoring light exposure in aquatic systems"
  Jelinek: **$25,000**
- **2016-2018** "Kamin" Program, Chief Scientist, Ministry of Trade. PI: **Raz Jelinek**
  "Supercapacitors based upon gold/graphene electrodes"

IS 700,000

- **2016-2019** Applied Science and Engineering Grant, Ministry of Science and Technology, co-PIs: **Raz Jelinek,** Zeev Zalevsky
  "Active solar concentrators through a novel piezoelectric nanoparticle/sol-gel design"
  Jelinek: **IS 750,000** (total grant IS 1,500,000)
- **2016-2017** The Louis and Bessie Stein Fellowship, co-PIs: **Raz Jelinek,** J.L. Poggio
  "Biophysical patterns and clinical aspects of colon tumor mitochondrial membranes"
  $ 20,000
- **2015-2016** "Nofar" Program, Ministry of Trade and Industry, PI: **Raz Jelinek**
  "Monitoring pollutants in drinking water"
  IS 500,000
- **2015** Israel Science Foundation Equipment Grant, **R. Jelinek**, A. Bernheim, S. Cohen
  "Scanning confocal microscope"
  IS 750,000
- **2014-2018** Israel Science Foundation Individual Grant, PI: **Raz Jelinek**
  "Au thiocyanate – a new building block for gold nanotechnology"
  $ 300,000
- **2013-2016** US-Israel Binational Agriculture Research and Development Fund (BARD) grant, co-PIs: **R. Jelinek,** P. Dawson, T. Hanks, W. Pennington, J. Northcutt
  "Bacterial sensors for food processing environments"
  Jelinek: **$ 140,000** (total grant $ 300,000)
- **2011-2015** US-Israel BSF grant, co-PIs: **R. Jelinek**, J. Hanes
  "Mucus transport and membrane interactions of gene carriers"
  Jelinek: **US$ 140,000** (total grant US$ 188,000)

Present Academic Activities - Synopsis of Research

Research in the Jelinek laboratory is multidisciplinary and spans biological chemistry, nanotechnology, advanced sensors, and energy storage. The research activity in the laboratory has a certain applied-science emphasis, with several patents awarded/submitted. Current projects include ***amyloid-mediated chemical catalysis; carbon dots for biological and chemical applications; chromatic polymers; porous matrixes for water purification***; and ***advanced supercapacitors.***