Raz Jelinek July 2015

CURRICULUM VITAE AND LIST OF PUBLICATIONS

- **Personal Details**

Work address: Department of Chemistry, Ben-Gurion University, Beer Sheva 84105, Israel. Telephone: +972-8-6428665
Home address: 14 Gilboa St. Reut 71799. Telephone: +972-52-6839384
E-mail: razj@bgu.ac.il
Web: www.bgu.ac.il/~razj

- **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**

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 Academic Administration

2013 – present	- Head, PhD Committee, Nantechnology Interdisciplinary PhD track, Ilse Katz Institute for Nanotechnology
2012 – present	- Head, Students Appeals Tribunal, Ben Gurion University
2012	- Member, Scientific Advisory Committee, 77th ICS Meeting, Tel-Aviv
2011 – 2012	- Member, Promotion Committee, Faculty of Natural Sciences
2010 – present	- Member, University Senate
2008 – 2010	- Member, Steering Committee, Ilse Katz Institute of Nanotechnology, Ben-Gurion University
2007	- Member, President's Committee for development of an Academic Leadership Program
2005 – 2007	- Member, University Senate
2005 - 2006	- Director, BGU/Teva Ltd. analytical chemists training program.
2006	- Organizer and Chairman, 71th Meeting of the Israel Chemical Society
2004 – 2006	- Council Member, VLSI Center, Ben-Gurion University
2003	- Fund-raising Coordinator, Faculty of Natural Sciences, Ben Gurion University
2002 – present	- Academic Director, Biophysics Laboratory, Ilse Katz Institute of Nanotechnology
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 – present	- Head, Admission Committee, Chemistry Department, Ben-Gurion University
1999 – present	- Organizer, Chemistry Department Open Day
1999	- Founding Member, Staedler Minerva Center for Mesoscopic Macromolecular Engineering, Ben-Gurion University

1999 - Member, Organizing Committee, Israel Chemical Society Annual Meeting

Professional Functions Outside of the University

2015 - 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 – 2008 - Israel Chemical Society Representative, Working Party on Chemistry in Microsystems, EuChemMS
2006 – 2008 - Member of the Executive Committee, Israel Chemical Society
2002 - Guest Lecturer, General Chemistry, Beersheva Academic College for Engineering

Industry relationships and consulting

2015 - Consultant, Dr. Reddy's Laboratories, Bachupally, India.
2014 - Consultant, Tortech/Plasan Ltd, Sasa, Israel
2013 – 2014 - Consultant, Sphere Fluidics Ltd., Cambridge, UK
2012 – 2013 - Member, Scientific Advisory Board, Cirle Inc., Miami, FL
2010 - Consultant, Ateris Technologies LLC, Bozeman, MT
2009 - 2010 - Consultant, Procter & Gamble Home Products Ltd., Bangalore, India
2006 - 2009 - Consultant, Biosome Inc., Wilmington, DE
2003 – Consultant, D-Pharm Ltd., Rehovot, Israel

Membership in Editorial Boards of Scientific Journals

2011 – 2013 - *Nanotechnology Reviews*

Reviewer:

2012 – present - *Italian Ministry of Education, University and Research (MIUR)*
2010 -2011 - *Excellence Initiative (2010), Deutsche Forschungsgemeinschaft (DFG), German Research Foundation – Member of Review Committee (Chemistry)*

Other activities:

2014 – present Member, Committee on Tourism and Preservation, Modiin City Council

- **Educational Activities**

Courses Taught

- 2004 – 2010: Elementary and Analytical Chemistry, B.Sc. level - Ben-Gurion University
- 2000 – present: 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 – present: Selected Topics in Biophysical Chemistry – M.Sc. level, Ben-

Gurion University
- 2009 – present: Biomimetic and Bio-inspired Chemistry – M.Sc. level, Ben Gurion University
- 2009 – present: Bionanotechnology – M.Sc. level, Ben Gurion University

Recent Teaching Ranking (student grading, 1 to 5 scale, 5 is maximum score)
- 2014 General Chemistry: **4.8** (Faculty of Natural Sciences average: 3.6)
- 2014 Analytical Chemistry: **4.7** (Faculty of Natural Sciences average: 3.6)

Research Students
- Xiuxiu Yin, current Ph.D. student. Ben Gurion University
- Ahiud Morag, current Ph.D. student. Ben Gurion University
- Margarita Ritenberg, current Ph.D. student. Ben Gurion University
- Ravit Butbul, current Ph.D. student. Ben-Gurion University
- Orit Malka, current M.Sc. student. Ben-Gurion University
- Reut Shafir, current M.Sc. student. Ben-Gurion University
- Gil Choona, current M.Sc. student. 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
- 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
- Kaviya Parambath Kootery, visiting research student. 2012 - present
- 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. Susanta Bhunia (PhD Indian Association for the Cultivation of Science, Kolkata) 2015 – present.
- 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 – present.
- Dr. Sukhendu Nandi (PhD University of Wuppertal, Germany) 2013 – present.
- Dr. T.P. Vinod (Ph.D. Kongju National University, Korea) 2012 – present.
- 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. Zuly 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: Research Associate, University of Virginia
- 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

Prizes Awarded to Research Fellows in the Jelinek Laboratory

- Dr. Susanta Bhunia, 2015-2017, Israel-India Post-doctoral Fellowship, Vatat.
- Dr. Joydeb Manna, 2014-2015, Kreitman Post-doctoral Fellowship, Ben Gurion University
- Margarita Ritenberg, 2014, Shariv Prize, Department of Chemistry, BGU
- Xiuxiu Yin, 2013-2016, "Negev" PhD Fellowship, Ben Gurion University
- Alexander Trachtenberg, 2013-2014, Teva Fellowship for Analytical Sciences.
- Dr. Hao Jiang, 2013-2015, Israel-China Post-doctoral Fellowship, Vatat.
- Dr. Sukhendu Nandi, 2013-2015, Kreitman Post-doctoral Fellowship, Ben Gurion University
- Margarita Ritenberg, 2012-2015, "Negev" PhD Fellowship, Ben Gurion University
- Margarita Ritenberg, 2012, Efrima Excellence Prize, IKI, Ben Gurion University
- Noga Gal, 2012, Shariv Prize, Chemistry Department, BGU
- Ahiud Morag, 2012, Shariv Prize, Chemistry Department, BGU
- Ahiud Morag, 2011, Efrima Excellence Prize, IKI, Ben Gurion University
- Liron Mazor-Philosof, 2010, Intel Prize, Intel Israel
- Ehud Bazar, 2010, Zingerman Prize, Chemistry Department, BGU
- Liron Silbert, 2009, Shariv Prize, Chemistry Department, BGU
- Liron Philosof, 2008-2012, Negev Fellowship, Ben-Gurion University
- Izek Ben Shlush, 2008, Dean Prize, Faculty of Natural Sciences, BGU
- Marina Katz, 2007, Shariv Prize, Chemistry Department, BGU
- Tania Sheynis, 2007, Orchin prize, awarded at 72nd ICS meeting, Tel-Aviv, Israel
- Tania Sheynis, 2006, Shariv Prize, Chemistry Department, BGU
- Roman Volinsky, 2006, Orchin Prize, Chemistry Department, BGU
- Tania Sheynis, 2005, Amnon Zingerman prize, Chemistry Department, BGU
- Tania Sheynis, 2004, Dean Prize for MSc Degree, Faculty of Natural Sciences, BGU
- Roman Volinsky, 2004, Intel Prize, Intel Israel
- Roman Volinsky, 2003, TevaTech Prize, Teva Co.

- **Scientific Publications**

Books

1. "Cellular and Biomolecular Recognition: Synthetic and Non-Biological Molecules", **Raz Jelinek** (Editor), WILEY-VCH, Weinheim 2009, ISBN: 978-3-527-32265-7.
2. "Lipids and Cellular Membranes in Amyloid Diseases", **Raz Jelinek** (Editor), WILEY-VCH, Weinheim 2011, ISBN: 978-3-527-32860-4.
3. "Biomimetics, a Molecular Perspective", **Raz Jelinek**¸ De-Gruyter, Berlin 2013, ISBN: 978-3-11-028117-0.
4. "Nanoparticles", **Raz Jelinek**¸ De-Gruyter, Berlin 2015, ISBN: 978-3-11-033002-1.

Chapters in Collective Volumes

1. "Biological and Biomimetic Systems in Chemical Sensors"

Jelinek, R.

R. Jelinek, S. Kolusheva, in "Chemical Sensors, Fundamentals of Sensing Materials" [G. Korotcenkov, Ed.], Momentum Press, New York, 2011.

Refereed Articles in Scientific Journals (last FIVE years)

- Total number of publications: 126
- h-index: 32 (ISI database)
- Sum cited without self-citations: 2941

78. "Membrane anchoring of diacylglycerol-lactones substituted with rigid hydrophobic acyl domains correlates with biological activities"
O. Raifman, S. Kolusheva, M. J. Comin, N. Kedei, N. E. Lewin, P. M. Blumberg, V. E. Marquez, **R. Jelinek**
The FEBS Journal, **2010**, *277*, 233-243.
79. "The Effect of Backbone Cyclization on PK/PD Properties of Bioactive Peptide-Peptoid Hybrids: The Melanocortin Agonist Paradigm"
O. Ovadia, Y. Linde, C. Haskell-Luevano, M. L. Dirain, T. Sheynis, **R. Jelinek**, C. Gilon, A. Hoffman
Bioorganic and Medicinal Chemistry, **2010**, *18*, 580-589.
80. "Gold nanoparticle self-assembly in saturated phospholipid monolayers"
A. Mogilevsky, R. Volinsky, Y. Dayagi, N. Markovich, **R. Jelinek,**
Langmuir, **2010**, *26*, 7893-7898.
81. "Biophysical techniques for studying membrane interactions of amyloid peptides"
R. Jelinek, T. Sheynis
Current Protein and Peptide Science, **2010**, *11*, 318-328.
82. "Specific mutations alter fibrillation kinetics, fiber morphologies, and membrane interactions of pentapeptides derived from human calcitonin"
Amit Shteinfeld, Tania Sheynis, **Raz Jelinek**
Biochemistry, **2010**, *49*, 5299-5307.
83. "Membrane-surface anchoring of charged diacylglycerol-lactones correlates with biological activities"
Or Raifman, Sofiya Kolusheva, Said El Kazzouli, Dina M. Sigano, Noemi Kedei, Nancy E. Lewin, Ruben Lopez-Nicolas, Ana Ortiz-Espin, Juan C. Gomez-Fernandez, Peter M. Blumberg, Victor E. Marquez, Senena Corbalan, **Raz Jelinek**
ChemBioChem, **2010**, *11*, 2003-2009.
84. "Divergent heparin-induced fibrillation pathways of a prion amyloidogenic determinant"
Ehud Bazar, **Raz Jelinek**
ChemBioChem, **2010**, *11*, 1997-2002.
85. "Membrane interactions of novicidin, a novel antimicrobial peptide: phosphatidylglycerol promotes bilayer insertion"
Jerzy Dorosz, Sofiya Kolusheva, Yana Gofman, Daniel Otzen, Nir Ben Tal, Niels Chr. Nielsen, **Raz Jelinek**
Journal of Physical Chemistry B, **2010**, *114*, 11053-11060.
86. "Fibrillation of human calcitonin inhibits lipid interactions of membrane-active molecules"
Tanya Sheynis, **Raz Jelinek**
Journal of Physical Chemistry B, **2010**, *114*, 15530–15535.
87. "Gold Nanoparticle Self-Assembly in Two-Component Lipid Langmuir Monolayers"
Alina Mogilevsky, **Raz Jelinek**
Langmuir, **2011**, *27*, 1260-1268

88. "Heparin inhibits membrane interactions and lipid-induced fibrillation of a prion amyloidogenic determinant"
Ehud Bazar, Tania Sheynis, Jerzy Dorosz, **Raz Jelinek**
ChemBioChem, **2011**, *12*, 761-767
89. "Some phorbol esters may partially resemble bryostatin 1 in their actions on LNCaP prostate cancer cells and U937 leukemia cells"
Noemi Kedei, Emanuel Lubart, Nancy E. Lewin, Andrea Telek, Langston Lim, Poonam Mannam, Sofiya Kolusheva, Susan H. Garfield, Gary E. Keck, **Raz Jelinek**, Peter M. Blumberg
ChemBioChem, **2011**, *12*, 1242-1251
90. "A Paradigm for Solvent and Temperature Induced Conformational Changes"
Dina Shpasser,Yael S. Balazs, Moshe Kapon, Tania Sheynis, **Raz Jelienk**, Moris S. Eisen
Chemistry – A European Journal, **2011**, *17*, 8285-8289.
91. "Self-Assembled Transparent Conductive Electrodes from Au Nanoparticles in Surfactant Monolayer Templates"
A. Morag, L. Philosof-Mazor, R. Volinsky, E. Mentovich, S. Richter, **R. Jelinek**
Advanced Materials, **2011**, *23*, 4327-4331.
92. "N-methyl-substituted fluorescent DAG-indololactone isomers exhibit dramatic differences in membrane interactions and biological activity"
Noga Gal, Sofiya Kolusheva, Noemi Kedei, Andrea Telek, Nancy E. Lewin, Langston Lim, Poonam Mannan, Susan H. Garfield, Säid El Kazzouli, Dina M. Sigano, Victor E. Marquez, Peter M. Blumberg, **Raz Jelinek**
ChemBioChem, **2011**, *12*, 2331-2340.
93. "Polydiacetylene-supported silica biosensing films formed at the air/water interface"
Y. Demihovsky, S. Kolusheva, M. Geyzer, **Raz Jelinek**
Journal of Colloids and Interface Science, **2011**, *364*, 428-434.
94. "Highly compacted DNA nanoparticles with low MW PEG coatings: *in vitro*, *ex vivo* and *in vivo* evaluation"
Nicholas J. Boylan, Jung Soo Suk, Samuel K. Lai, **Raz Jelinek,** Michael P. Boyle, Mark J. Cooper, and Justin Hanes
Journal of Controlled Release, **2012**, *157*, 72-29.
95. "Biofilm formation on chromatic sol-gel/polydiacetylene films"
Margarita Geyzer, Sofiya Kolusheva, Hadas Ganin, Michael Meijler, **Raz Jelinek**
ChemPlusChem, **2012**, 77, 752-757.
96. "Array-based disease diagnostics using lipid/polydiacetylene vesicles encapsulated in a sol-gel matrix"
S. Kolusheva, R. Yossef, M. Katz, R. Volinsky, M. Welt, U. Hadad, V. Drory, M. Kliger, E. Rubin, A. Porgador, **Raz Jelinek**
Analytical Chemistry, **2012**, *84*, 5925–5931.
97. "Membrane interactions of ionic liquids – possible determinants for biological activity and toxicity"
N. Gal, D. Malferarri, S. Kolusheva, P. Galletti, E. Tagliavini, **Raz Jelinek**
BBA-Biomembranes, **2012**, *1818*, 2967-2974.
98. "Direct three-dimensional visualisation of membrane disruption by amyloid fibrils"
L. Milanesi, W. Xue, T. Sheynis, E. V. Orlova, A. L. Hellewell, **Raz Jelinek**, Eric W. Hewitt, Sheena E. Radford, Helen R. Saibil
PNAS, **2012**, *109*, 20455-20460.
99. "N-terminal aromatic residues closely impact the cytolytic activity of cupiennin 1a, a major spider venom peptide"
Lucia Kuhn-Nentwig, Tania Sheynis, Sofiya Kolusheva, Wolfgang Nentwig, **Raz Jelinek**
Toxicon, **2013**, *75*, 177-186.

Jelinek, R.

100. "Bolaamphiphilic vesicles encapsulating iron oxide nanoparticles: new vehicles for magnetically-targeted drug delivery"
Liron Philosof-Mazor, George R. Dakwar, Mary Popov, Sofiya Kolusheva, Charles Linder, Sarina Grinberg, Eliahu Heldman, David Stepensky, **Raz Jelinek**
International Journal of Pharmaceutics, **2013**, *450*, 241-249.
101. "Patterned transparent conductive Au films through direct reduction of gold thiocyanate"
Ahiud Morag, Natalya Froumin, Dimitry Mogiliansky, Vladimir Ezersky, Edith Beilis, Shachar Richter, **Raz Jelinek**
Advanced Functional Materials, **2013**, *23*, 5663-5668.
102. "Aggregation modulators interfere with membrane interactions of β_2-microglobulin fibrils"
Tania Sheynis, Anat Friediger, Wei-Feng Xue, Andrew L. Hellewell, Kevin W. Tipping, Eric W. Hewitt, Sheena E. Radford, **Raz Jelinek**
Biophysical Journal, **2013**, *105*, 745-755.
103. "Transparent, conductive gold nanowire network assembled from soluble Au thiocyanate"
Ahiud Morag, Vladimir Ezersky, Natalya Froumin, Dimitry Mogiliansky, **Raz Jelinek**
ChemComm, **2013,** *49(76)*, 8552-8554.
104. "Functional Gold Nanofibers Assembled on a Peptide Template through Single-step Reduction of Au(III) Thiocyanate"
T. P. Vinod, Shlomo Zarzhitsky, Ahiud Morag, Leila Zeiri, Yael Levi-Kalisman, Hanna Rapaport, **Raz Jelinek**
Nanoscale, **2013,** *5*, 10487-10493.
105. "Lipid Bilayers Significantly Modulate Cross-Fibrillation of Two Distinct Amyloidogenic Peptides"
Noga Gal, Ahiud Morag, Sofiya Kolusheva, Roland Winter, Meytal Landau, **Raz Jelinek**
Journal of the American Chemical Society, **2013,** *135*, 13582-13589
106. "Polydiacetylenes – Recent Molecular Advanced and Applications"
Raz Jelinek, Margarita Ritenberg
RSC Advances, **2013,** *3(44)*, 21192-21201.
107. "Aggregation of Oligoarginines at Phospholipid Membranes: Molecular Dynamics Simulations, Time-Dependent Fluorescence Shift, and Biomimetic Colorimetric Assays"
Mario Vazdar, Erik Wernersson, Morteza Khabiri, Lukasz Cwiklik, Piotr Jurkiewicz, Martin Hof, Ella Mann, Sofiya Kolusheva, **Raz Jelinek**, Pavel Jungwirth
Journal of Physical Chemistry B, **2013,** *117*, 11530-11540.
108. " "Beating speckles" via electrically-induced vibrations of Au nanorods embedded in sol-gel"
Margarita Ritenberg, Edith Beilis, Asaf Ilovitsh, Zehava Barkai, Asaf Shahmoon, Shachar Richter, Zeev Zalevsky, **Raz Jelinek**
Scientific Reports (Nature Group Journal), **2014,** *4*, 3666, doi:10.1038/srep03666
109. "Flexible conductive surfaces via "bottom-up" gold nanotechnology"
T.P. Vinod and **Raz Jelinek**
ACS Applied Materials and Interfaces **2014,** *6*, 3341-3346.
110. "A new approach for noninvasive sensing and delivery through the amniotic sac"
Aharon Azagury, Eliz Lewis-Amar, Ella Mann, **Raz Jelinek**, Moti Halak and Joseph Kost
Journal of Controlled Release **2014**, *183*, 109-120.
111. "Synthesis, Biological, and Biophysical Studies of DAG-indololactones Designed as Selective Activators of RasGRP"
Lia C. Garcia, Lucia Gandolfi Donadío, Ella Mann, Sofiya Kolusheva, Noemi Kedei, Nancy E. Lewin, Colin S. Hill, Jessica S. Kelsey, Jing Yang, Timothy E. Esch, Marina Santos, Megan L. Peach, James A. Kelley, Peter M. Blumberg, **Raz Jelinek**, Victor E. Marquez, Maria J. Comin
Bioorganic and Medicinal Chemisry **2014**, *22*, 3123-3140.

112. "Poly(methyl methacrylate)-supported polydiacetylene films: unique chromatic transitions and molecular sensing"
Kaviya Parambath Kootery, Hao Jiang, Sofiya Kolusheva, T. P. Vinod, Margarita Ritenberg, Leila Zeiri, Roman Volinsky, Danilo Malferrari, Paola Galletti, Emilio Tagliavini, **Raz Jelinek**, *ACS Applied Materials and Interfaces* **2014,** *6,* 8613-8620.
113. "Nanostructure Synthesis at the Solid/Water Interface: Spontanoeus Assembly and Chemical Transformations of Tellurium Nanorods"
TP Vinod, Natalya Froumin, Dimitry Mogiliansky, Leila Zeiri, **Raz Jelinek**
ChemPhysChem **2014,** *15,* 3026-3031.
114. "Spontaneous assembly of extremely long, aligned, conductive gold micro-wires in a surfactant monolayer template"
Hao Jiang, TP Vinod, **Raz Jelinek**
Advanced Materials Interfaces **2014,** *1,* 1400187
115. "Membrane analysis with amphiphilic carbon dots"
Sukhendu Nandi, Ravit Butbul, Kaviya Parambath Kootery, Yelena Mirsky, Sofiya Kolusheva, **Raz Jelinek**
ChemComm **2014,** *50 (71),* 10299 - 10302
116. "Transparent, conductive polystyrene in three dimensional configurations"
Alexander Trachtenberg, T.P. Vinod, **Raz Jelinek**
Polymer **2014,** *55,* 5095-5101.
117. "Dramatic shape modulation of surfactant/diacetylene microstructures at the air/water interface"
Hao Jiang, **Raz Jelinek**
Chemistry – A European Journal **2014,** *20,* 16747-16752.
118. "Single-step assembly of large-area, transparent conductive patterns induced through edge adsorption of template-confined Au-thiocyanate"
Xiuxiu Yin, T. P. Vinod, Dimitry Mogiliansky, **Raz Jelinek**
Advanced Materials Interfaces, **2015,** *2,* 1400430.
119. "Colorimetric polymer assay for the diagnosis of plasma lipids atherogenic quality in hypercholesterolemic patients"
Ella Mann, Sofiya Kolusheva, Rami Yosef, Angel Porgador, Michael Aviram, **Raz Jelinek**
Molecular Diagnosis and Therapy, **2015,** *19,* 35-43.
120. "Stacking interactions by two Phe side chains stabilize and orient assemblies of even the minimal amphiphilic β-sheet motif"
Shlomo Zarzhitsky, T.P. Vinod, **Raz Jelinek,** Hanna Rapaport
ChemComm, **2015,** *51,* 3154-3157.
121. "Unilamellar vesicles from amphiphilic graphene quantum dots"
Sukhendu Nandi, Sofiya Kolusheva, Ravit Malishev, T. P. Vinod, Alexander Trachtenberg, **Raz Jelinek**
Chemistry – A European Journal., **2015,** *21,* 7755-7759 *(designated a Hot Paper)*
122. "Chromatic polymer assays for the analysis of lipid and lipoprotein peroxidation"
Raz Jelinek, Sofiya Kolusheva, Ella Mann, Michael Aviram
Lipid Technology, **2015,** in press.
123. "Bacterial sensing with amphiphilic carbon dots"
Sukhendu Nandi, Margarita Ritenberg, **Raz Jelinek**
Analyst, **2015,** *140,* 4232-4237.
124. "Mixed diacetylene / octadecyl melamine nanowires formed at the air/water interface exhibit unique structural and colorimetric properties"
Jiang Hao, **Raz Jelinek**
Langmuir, **2015,** in press.

Jelinek, R.

125. "Polymeric carrier-mediated intracellular delivery of phosphatidylinositol-3,4,5-trisphosphate to overcome insulin resistance"
Ilana Kachko, Tamar Traitel, Riki Goldbart, Liron Silbert, Marina Katz, Nava Bashan, **Raz Jelinek**, Assaf Rudich, and Joseph Kost
Journal of Drug Targeting, **2015,** in press.
126. "Flexible high-sensitivity piezoresistive sensor comprising of Au nanoribbon-coated polymer sponge"
X. Yin, TP Vinod, **Raz Jelinek**
Journal of Materials Chemistry C, **2015,** in press.

Submitted papers

1. "Toxicity inhibitors protect lipid membranes from disruption by Aβ42", Ravit Malishev, Sukhendu Nandi, Sofiya Kolusheva, Yael Levi-Kalisman, Frank-Gerrit Klärner, Thomas Schrader, Gal Bitan, **Raz Jelinek**, *submitted for publication.*
2. "Enhanced Photocatalysis by Hybrid Au/ZnO Nanoparticles Assembled Through a One-Pot Method" J. Manna, TP Vinod, K. Flomin, T. Mokari, **Raz Jelinek**, *submitted for publication.*

- **Reports on Jelinek's work in the general press**

  - "Simplified Method For Detecting Antibodies" – *Vidyya Medical News Service*, 3/4/2003
  - "Hanging by a thread" – *Jerusalem Post*, 19/10/2003
  - "A new molecular culprit for type II diabetes, Alzheimer's and Parkinson's" – *bio.com* newsletter, 22/10/2003
  - "And maybe these are the 'Amyloid donuts' that cause cell destruction" – *Haaretz*, 28/10/2003
  - "The blue and the red" – *Scientific American Israel*, April-May 2004.
  - "Un biocapteur colorimetrique pour l'etude des phenomenes membranaires" – *Daguesh* Newsletter for Israeli-French cooperation.
  - "Israeli 'nano-lightbulbs' could help detect drug's efficiency" – *Israel21C*, 12/1/2005
  - "Nano-lighbulbs" – *Forbes/Wolfe Nanotech Weekly*, January 2005.
  - "Polymer Color Show Lights Up Membranes" – *Chemical and Engineering News*, 3/2/2005
  - "Nanopatches" – *MIT Technology Review*, April 2005.
  - "A new Israeli development for bacterial sensing" – *Yediot Ahronot*, May 2006.
  - "Flexible electronics: 21st century alchemy that's reshaping your world" – *Haaretz International Edition*, April 2014.

- **Lectures and Presentations at Meetings and Invited Seminars [last five years]**

Presentation of papers at conferences/meetings

2015
Plenary/Invited Lectures

1. "Colorimetric polymer assay for forensic applications", Isranalytica 2015, Israel. **Keynote lecture**.
2. "Carbon dots for biological imaging", OSA's 2015 Optics in life sciences congress, Vancouver, Canada. **Invited lecture.**

Contributed Presentations:

3. “Gold thiocyanate – a new precursor for Au nanotechnology”. Materials Research Society annual meeting, San Francisco, US.

2014

Plenary/Invited Lectures

4. “Functional Au nanostructures assembled on amphiphilic peptide scaffolds at the air/water interface”, The Batsheva de Rothschild Workshop on Functional Peptides, Tsuba, Israel. **Invited lecture**.

Contributed Presentations:

5. “Transparent conductive Au patterns through self-assembly”. ACS Colloids Meeting, Philadelphia, US
6. “Carbon quantum dots light up membranes and cells”, Israel Vacuum Society Meeting, Herzliyya, Israel.

2013

Contributed Presentations:

7. “Single-step formation of Au nanostructured films”. Materials Research Society Spring Meeting, San Francisco, US
8. "Transparent, conductive electrodes self-assembled on amphiphilic peptide templates at the air-water interface". Materials Research Society Fall Meeting, Boston, US
9. "Carbon quantum dots for biological imaging". Materials Research Society Fall Meeting, Boston, US

2012

Plenary/Invited Lectures

10. “Polydiacetylene for membrane, bacterial, and cell sensing”. International Conference on Bioinspired and Biobased Chemistry & Materials, Nice, France. **Keynote lecture**.

Contributed Presentations:

11. “Polydiacetylene colloids for biosensing and diagnostic applications”. National ACS Meeting, Philadelphia, US

2011

Plenary/Invited Lectures

12. “Organized gold nanostructures at the air/water interface”. Minerva Conference on Mesostructured Materials”, Ein-Gedi, Israel. **Invited lecture**.
13. “Polydiacetylene – a unique chromatic polymer for biosensing applications”. SERMACS 2011, Richmond, VA. **Plenary lecture**.

Contributed Presentations

14. “New sol-gel constructs for diagnostic applications”. Materials Research Society Meeting, San Francisco, CA.
15. “Transparent conductive electrodes produced via self-assembly of gold nanoparticles at the air/water interface”. Materials Research Society Meeting, Boston, MA.

2010

Plenary/Invited Lectures

16. "Nanolithography using soap on water". IKI Inauguration Day Meeting. **Invited lecture**.

Contributed Presentations

17. "Chromatic biomimetic membranes for diagnostic and biochemical applications". Protein screening and bacterial detection using lipid/polymer chromatic films. Biointerfaces: From Molecular Understanding to Applications. Lund, Sweden.

Seminar presentations at universities and institutions (**last five years**)

2015
- Osaka University, Japan
- Tohoku University, Japan
- Kyoto University, Japan

2014
- Clemson University, US
- Furman University, US

2013
- Tel Aviv University
- Czech Academy of Science

2012
- Hebrew University
- University of Bologna, Italy

2011
- Weizmann Institute

2010
- Hebrew University
- Bar Ilan University
- Tel Aviv University

- **Patents and Patent Applications**

- 2000 Selective colorimetric detection method for cations in aqueous solution. Israel Patent IL 129003.
- 2001 Colorimetric detection method. EU Patent 1161688.
- 2003 (Applied for) Nano-patch containing sensor cells. PCT/IL2004/000899
- 2004 Polydiacetylene-containing solid colorimetric and/or fluorescent detector, method for its preparation and uses thereof. US patent 8,008,039; European Patent 04744945.9
- 2004 Cells containing a nanopatch sensor in their membranes. EU patent 04770570. US patent 7,855,073

- 2009 (Applied for) Nanowires, method for fabrication the same and uses thereof. US PCT application.
- 2014 Gold nanostructures and process for their preparation (PCT WO 2014/072969)
- 2014 Polydiacetylene / poly(methyl methacrylate) matrices as colorimetric and/or fluorescent detectors (PCT application submitted)

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

- **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)
- **2013-2014** M.F.S. Fund, Ben Gurion University, PI: **R. Jelinek**
  "Single step assembly of ultrathin transparent conductive metal films"
  $ 100,000
- **2013-2014** Israel-Czech Republic Science Cooperation grant, co-PIs: **R. Jelinek,** M. Hof
  "Membrane interactions of proteins associated with Alzheimer's disease; implications for diseases' pathologies and therapeutic avenues"
  IS 300,000 (Jelinek share)
- **2012** ISF Institutional Equipment Grant, **R. Jelinek,** Y. Golan, J. Kost
  "Fast scanning microscope"
  IS 900,000
- **2012 - 2013** "Nevet" BGU-Technion Cooperation Grant, co-PIs: **R. Jelinek**, A. Porgador, M. Aviram
  "Chromaric nanoparticle-based cardiovascular diagnostic technology"
  Jelinek: **IS 37,500** (total grant IS 150,000)
- **2012 - 2013** Kamin grant, Ministry of Trade and Industry, **R. Jelinek (PI)**
  "Novel bottom-up nanolithography technology for production of transparent conductive electrodes employed in electronic and photonic devices"
  IS 770,000
- **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)
- **2011 - 2014** Ministry of Science and Technology Infrastructure grant, co-PIs: **R. Jelinek**, S. Richter, Z. Zalevsky
  "Electronic and nanophotonic devices based upon new molecular and soft lithography methods"
  Jelinek: **IS 600,000** (total grant IS 1,800,000)

- **2010** Britain-Israel Research and Academic Partnership (BIRAX) grant,
  co-PIs: **R. Jelinek**, S. Radford
  "Membrane interactions of amyloid fibrils and pre-fibril oligomers – a fundamental toxicity factor?"
  Jelinek: **GBP 11,000** (total grant GBP 30,000)
- **2009 - 2010** "Nevet" BGU-Technion Cooperation Grant, co-PIs: **R. Jelinek**, D. Seliktar
  "Biomimetic hydrogels labeled with chromatic polymer nanoparticles for studying cell motility"
  Jelinek: **IS 40,000** (total grant IS 80,000)
- **2009 - 2010** MoST Israel-Ukraine Research Grant, co-PIs: **R. Jelinek**, M. Aviram, O. Kuzmenko
  "Biomimetic chromatic platforms for analysis of membrane-associated oxidative stress processes and disease diagnosis"
  Jelinek: **IS 120,000** (total grant IS 300,000)
- **2008 - 2009** BGU Internal Interdisciplinary Research Grant Award, co-PIs: **R. Jelinek,** A. Porgador, I. Sikular, Y. Shemer
  "Development of Biomimetic Membrane-Based Diagnostic Assay for HCV Prognosis and Treatment Efficacy"
  Jelinek: **IS 56,000** (total grant IS 140,000)
- **2007 - 2011** German-Israel Project Cooperation (DIP), co-PIs: **R. Jelinek**, G. Lederkremer, E. Gazit, N. Ben-Tal, U. Hartl, J. Tatzelt, J. Hohfeld
  "Integrated *in vivo*, *in vitro* and *in silico* studies of protein misfolding diseases"
  Jelinek: **Euro 62,000 p/a** (total grant **Euro 1,200,000**)
- **2006** Wolfson Academic Infrastructure Grant, **R. Jelinek (PI)**
  "Live-cell confocal imaging microscope"
  $250,000
- **2006 - 2009** Israel Science Foundation grant, **R. Jelinek (PI)**
  "Chromatic lipid/polymer films for studying membrane processes"
  $50,000 p/a (total grant **$150,000**)
- **2006 - 2010** **R. Jelinek,** Member, BIOCONTROL, Marie Curie Research Training Network (RTN), funded under the EU 6th program (FP6-2005-Mobility-1).
  "Bio-interfaces: From Molecular Understanding to Application"
  Jelinek: **Euro 125,000 (**total grant **Euro 3,000,000)**
- **2005** Israel Science Foundation Equipment grant – co-PIs: **R. Jelinek**, Y. Amitay, A. Rudich.
  "Live cell imaging microscope"
  $100,000
- **2004 - 2007** Human Frontiers Science Program – co-PIs: **R. Jelinek**, E. Gizeli (IMBB Crete, Greece), A. Ouellette (University of California, Irvine), J. Kondoh (Shizuoka University, Japan).
  "Mechanisms of antimicrobial peptide interactions with the target cell membrane"
  Jelinek: **$130,000 p/a** (total grant: **$1,350,000**)
- **2005 - 2007** German-Israel R&D Cooperation BIO-DISC PROGRAM (BMBF-MOST Cooperation in Biotechnology): Co-PIs:

G. Lederkramer (TAU)**, R. Jelinek**, N. Ben-Tal (TAU), E. Gazit (TAU), U. Hartl (Max Planck Ins), J. Hoehfeld (U. Bonn).
"Defeating protein misfolding diseases"
Jelinek: euro-65,000 (total grant **euro 500,000**)

- **2002 – 2006** "Pharmalogica" MAGNET industry-academy consortium – **R. Jelinek (PI)**
"A New Colorimetric Sensor for Screening of Molecular Penetration Through Lipid Barriers: Blood-Brain Barrier, Gastrointestinal Mucosa, and Stratum Corneum"
Jelinek: **$630,000** (total grant $4M)
- **2002 - 2006** US-Israel Binational Science Foundation [BSF] Grant – **R. Jelinek (co-PI)**, A.J. Ouellette, University of California, Irvine (co-PI) -
"Novel biomimetic approaches to investigate defensin microbicidal mechanisms"
Jelinek: $25,000/pa (total grant: **$200,000**)
- **2003 - 2005** Institute for Security Research, Technion - **R. Jelinek (PI)**
"A biosensor system for identification of biological and chemical warfare substances"
$40,000
- **1999 – 2006** Minerva Center. Co-PI: **R. Jelinek**, M. Gottlieb, A. Berman, R. Yerushalmi, O. Regev
"Mesoscale engineering of biological and synthetic polymeric materials"
permanent fund: **$800,000**
"NMR studies of combinatorial peptide libraries"

Present Academic Activities

Synopsis of Research

Research in the laboratory of Dr. R. Jelinek is multidisciplinary and spans nanotechnology, surfaces and thin films, sensors, and biological membranes. The research activity in the laboratory has a certain applied-science emphasis, with several patents awarded/submitted. Current projects focus on ***self-assembled functional Au coatings in 2D and 3D*** through the use of a novel ***Au precursor; construction of organized structures at the air/water interface; amphiphilic carbon dots for biological applications;*** development of ***chromatic sensors for biological and chemical molecules*** based upon ***polydiacetylene*** – a unique conjugated polymer; and ***membrane interactions of amyloid peptides***.