

YORAM COHEN, Ph.D.

CURRICULUM VITAE

Place and Birth date: Israel, July 28, 1956.

Marital Status: Married, 3 children.

Home Address: 14/8 Rothschild St. Kfar Sava, 44201, Israel

Military Service: 11/74-5/78 Service in the IDF.

E-mail: ycohen@tauex.tau.ac.ilWeb site: <https://lmicentertau.wixsite.com/yoramcohen>Google Scholar: Citations: 16887; H_{index}: 60.Web of Science: Citations: More than 11,500; H_{index}: 54**EDUCATION**

<u>Period</u>	<u>Institute</u>	<u>Degree</u>	<u>Area of specialization</u>
1978-1981	Hebrew University, Jerusalem	B.Sc.	Chemistry
1982	Hebrew University, Jerusalem	---	Organic chemistry
1983-1987	Hebrew University, Jerusalem	Ph.D. (<i>Summa cum Laude</i>)	Organic chemistry

Ph. D. Dissertation: Polyanion Systems: Preparation, Structure, Stability and Charge Distribution. under the supervision of Professors *Joseph Klein* and *Mordecai Rabinovitz*, Department of Organic Chemistry, Hebrew University, Jerusalem, Israel.

MAJOR RESEARCH INTEREST:

1) Self-Assembly of Supramolecular Systems; 2) Applications of NMR Diffusion Measurements to Supramolecular Systems; 3) Hydrogen-Bond Molecular Capsules; 4) Pillararenes as Anti-Biofilm Agents, ¹²⁹Xe Host and for Organogel Preparation; 5) Applications of Diffusion MRI and MRS for Studying CNS Microstructure and Mechanisms and Neurological Disorders; 6) q-Space diffusion MRI (QSI) of the CNS; 7) Double Pulsed-Field Gradient NMR and MRI.

AWARDS and RECOGNITIONS

1982	Recipient of the Yehoiachim Kenat Award.
1985	Recipient of the Pulver Award.
1987	Recipient of the Fulbright Scholarship for postdoctoral appointment.
1990	Recipient of the Gerhard M. J. Schmidt Award from the Weizmann Institute of Science.
1993	Recipient of the Juludan Award from the Technion, Israel Institute of Technology.

1998	Recipient of the Brown Roger-Ziguel Award of the Israel Academy of Sciences and Humanities.
2002	Recipient of the Josefa and Leonid Olschwang Award from the ISF.
2010	Fellow of the International Society of Magnetic Resonance in Medicine (ISMRM)
2011	Joshua Jortner Chair in Chemistry
2015	ICS (Israel Chemical Society) Prize of Excellence
2016	Listed in the list of the 28 peoples that contributed three or more papers to the 100 most cited papers in Neuroimaging History (see <i>NeuroImage</i> , 139, 149-156 (2016))
2018	Visiting professor, UC Berkeley.

ACADEMIC AND PROFESSIONAL EXPERIENCE

<u>Period</u>	<u>Institute</u>	<u>Degree</u>	<u>Area of specialization</u>
2008-2012	Head of the School of Chemistry of Tel Aviv University		
2005-present	Tel Aviv University	Professor	Supramolecular Chemistry, Applications of NMR
2000-2004	Tel Aviv University	Associate Professor	to chemical problems and to brain research
1996-2000	Tel Aviv University	S. Lecturer	Supramolecular Chemistry, Applications of NMR
1992-1996	Tel Aviv University	Lecturer	to chemical problems and to brain research
1987-1990	University of California San Francisco	Postdoctoral fellow	NMR spectroscopy & Imaging of brain in vivo.
1983-1987	Hebrew University, Jerusalem	Instructor	Organic chemistry
1981-1982	Hebrew University, Jerusalem	Teaching Assistant	Organic chemistry

GRANTS RECEIVED

<u>Organization/Foundation</u>	<u>Subject</u>	<u>Total Grant</u>
1. Israel Science Foundation (ISF) Oct. 93/ Oct. 96.	Nitrogen Containing Macrocycles and their Complexes:	120,750 \$
2. Adams Super Center for	<i>In Vivo</i> NMR Spectroscopy	13,000 \$

Brain Research , TAU Jan. 93/ May 94.	of the Brain.	
3. TAU Research Authority April 93/Aug. 94	Solution Properties of Synthetic Ionophores and their Complexes.	5,500 \$
4. TAU Research Authority April 94/ April 95	Experimental Autoimmune Dementia: A MRS/ MRI study.	6,000 \$
5. TEVA pharmaceutical May 94/ Dec. 95	Evaluation of a New Drug against Stroke.	20,000 \$
6. Ministry of Health Jan 96. Dec. 97	Diffusion and T2-Weighted MRI of Brain Ischemia, Trauma and Cold Lesion.	90,000 NIS
7. Israel Science Foundation (ISF) July 93/July 94	Mini-imaging Accessory	147,800 \$
8. Adams Super Center for Brain Research, TAU Jan. 97/ Dec. 97.	f-MRI of Brain Function in Small Animals.	7,000 \$
9. Kodesh Center, TAU Jan. 98/Dec. 98	Structural Information in Brain Tissues from Diffusion MRS and MRI.	6,000 \$
10. TAU Research Authority Aug. 98/Aug. 99.	Nanotubes Obtained by Self-Assembly: Synthetic Models for Ion Channels.	6,000 \$
11. Israel Science Foundation (ISF) Oct. 1998/Oct. 2001	Photo-modulated Synthetic Ion Channels Obtained by Self-Assembly	132,939 \$
12. BSF Oct. 1998/Oct. 2001 (With P. J. Bassar, NIH)	Diffusion MR Spectroscopy and Imaging of the CNS: From Structural Information to Nerve Fibers Imaging <i>in Vivo</i> .	114,000 \$
13. DIP Jan. 2000/ Dec. 2004 (With G. Navon and 3 German Groups)	Advanced MRI techniques	480,000 DM
14. Israel Science Foundation (ISF) July 2001 (With other groups)	An Animal MRI Scanner (equipment)	600,000 \$
15. Israel Science Foundation (ISF) Oct. 2003/Oct. 2007	q- Space Diffusion MRI of Naïve and Myelin Deficient Rat Spinal Cords.	200,000 \$

16. BSF Oct. 2004/Oct. 2008 (With P. J. Basser, NIH)	Restricted and Anisotropic Diffusion in Model Systems and Neuronal Fibers	135,000 \$
17. Clal Biothecnology July 2006/July 2009 (With E. Gazit, TAU)	Development of Novel Site-Directed Peptide Self-Assembled Contrast Agents	150,000 \$
18. Israel Science Foundation (ISF) Oct. 2007/Oct 2011	Self-Assembly of Hydrogen-Bond Molecular Capsules in Solutions and on Nanoparticles by Diffusion NMR.	180,000 \$
19. Yeshaya Horowitz Association June 1, 2007	A 600 MHz Wide-bore NMR/MRI Scanner	2,500,000 \$
20. EU commission Dec. 2009/Dec. 2012	CONNECT	200,000 Euro
21. Ministry of Health March 2011-2013	New Nanoparticles for Cellular and Molecular MRI in the CNS	300,000 NIS
22. BSF Oct. 2010/Oct. 2014 (With Basser, NIH)	Double-PFG NMR and MRI: From Model Systems to CNS	140,000 \$
23. IDF Oct. 2012/Sep. 2013	MRI/MRS of Paraoxon intoxication	100,000 NIS
23. Israel Science Foundation (ISF) Oct. 2013/Sep. 2017	Hydrogen Bonds Molecular Systems :	1,000,000 NIS
24. BSF Oct. 2014/Sep. 2018 (With Westin, Harvard)	Double-PFG MRI in Neuronal Tissues	147,000 \$
25. Israel Science Foundation (ISF) Oct. 2015/Sep. 2016 (With Goldbourt and Nevo)	Hybrid NMR/MRI System for Solid-State NMR and MR Imaging	1,100,000 NIS
26. TAU Research Authority Oct, 2017/Sep, 2018	Pillararene as anti-biofilm agents	28,000 NIS
27. Kamin (With Fridman and Aldar-Abramovitch) Mar. 2018/Mar. 2020	Pillararene for composite dental materials	280,000 NIS

28. Israel Science Foundation (ISF) Oct. 2019/Sep. 2023	New Water Soluble Self-Assembled Supramolecular Boxes Based on Pillar[6]arene Derivatives	1,040,000 NIS
29. BSF Oct. 2020/Sep. 2024 (With Duncan, Wisconsin)	Advanced Diffusion MRI of Inherited Myelin Disorders	268, 800 \$

PLENARY/INVITED LECTURES IN NATIONAL AND INTERNATIONAL MEETINGS ONLY

1. Diffusion Weighted MRI: A Tool for Studying Brain Pathophysiology. Bat-Sheva Seminar on Functional Brain Imaging, Tel Aviv, Israel, June 5-10, **1994**.
2. Application of Magnetic Resonance Spectroscopic Imaging and Magnetic Resonance Imaging (MRI) to Brain Pathophysiology, 10th ESN Meeting, Jerusalem, Israel, August 14-19, **1994**.
3. Application of NMR Diffusion Measurements in Studying Supramolecular Systems in Solution. The 61st Meeting of the Israel Chemical Society, Jerusalem, Israel, February 13-14, **1996**.
4. ^1H and ^2H NMR Diffusion of Water and Metabolites in Brain Tissue. The 62th Israel Chemical Society Meeting, February 3-5, **1997**, Haifa, Israel.
5. Multiexponential diffusion of water and N-acetyl aspartate (NAA) in in vitro and in vivo brain: The effect of the "b" value and diffusion time. Research Workshop of the Israel Science Foundation on Advanced NMR Techniques in the Study of Ordered Biological Tissues and Elastomers. June 16-19, **1997**, Tel Aviv, Israel.
6. Applications of NMR Diffusion Measurements in Organic Supramolecular Chemistry. Research Workshop of the Israel Science Foundation on Chemical and Biomedical Applications of Supramolecular Systems, January 3-7, **1998**, Tel Aviv, Israel.
7. Diffusion weighted MRI and MRS of the CNS: From Pathophysiology to Structural Information, The Israel Society for Biophysics, February 8, **1998**, Tel Aviv, Israel.
8. NMR Diffusion Measurements in Chemical and Biological Supramolecular Systems, NATO Workshop on NMR Applications to the Study of Structure and Dynamics of Supramolecular Complexes, May 5-9, **1998**, Sitgs, Spain.
9. From Pathophysiology to Structural Information: Diffusion-Weighted MRI and MRS of the CNS, Fourth Jerusalem Imaging Meeting, January 13-14, **1999**, Jerusalem, Israel.
10. q-Space Diffusion NMR and MRI: From Chemical to Neuronal Systems. The 65 Meeting of the Israel Chemical Society, Beer Sheva, Israel, February 8-9, **2000**.

11. q-Space Diffusion MRI of CNS Maturation and Degeneration. XIX International Conference on MR in Biological Systems, the Satellite Meeting on Diagnostic NMR, Siena, Italy, August 17-19, **2000**.
12. Cerebral Ischemia, Head Trauma and Multiple Sclerosis- MRI Studies. 44th OHOLO Conference on Blood Brain Barrier, Drug Delivery and Brain Pathology, Dead Sea, Israel, September 10-14, **2000**.
13. High b Value q-Space Diffusion MRI of the Central Nervous System. 14th ISMAR Conference of the International Society of Magnetic Resonance, Rhodes, Greece, August 19-23, **2001**.
14. Applications of High-Value q-Space Diffusion MRS and MRI in the Nervous System: From Isolated Organs to The Entire Human Brain. ISMRM workshop on Diffusion MRI: Biophysical Issues, Palais du Grand large Saint-Malo, France, March 10-12, **2002**.
15. q-Space Diffusion MRS and MRI in Neuronal Tissues: What Can We Learn with the Present Technology. **Gordon Research Conference (GRC)** on in Vivo Magnetic Resonance, New London, NH, July 28-August 2, **2002**, (PLENARY Lecture).
16. From DWI to High b-Value q-Space diffusion MRI: Isolated Organs and Clinical Applications. 2nd Eastern Mediterranean Congress of Magnetic Resonance Imaging (SEMCMRI), Athens, Greece, September 29-October 2, **2004**.
17. Structure and Pathology in the Central Nervous System by q-Space Diffusion Weighted MRI. 13th Annual Meeting of the Israel Society for Neuroscience, Eilat, Israel, November 28-30, **2004**.
18. Restricted Diffusion: From Model Systems to MRI of White Matter in the Central Nervous System. The 2005 Minerva-Gentner Symposium on Magnetic Resonance, Eilat, Israel, December 11-15, **2005**.
19. Diffusion MRI of the Central Nervous System: From Models to the Entire Human Brain. The Minerva Center Symposium on Nano Bio Interfaces: Structure, Sensing, and Imaging. Bar Ilan University, February 8, **2007**.
20. Diffusion NMR in Supramolecular Chemistry: An Old Parameter-New Insights, The Sackler Tel Aviv Symposium in Organic Chemistry. May 14, **2007**.
21. Diffusion NMR of Hydrogen Bond Molecular Capsules: Old Technique New Insights. The 9th International Conference on Calixarene Chemistry (Calix2007), August 6-9, **2007**, University of Maryland College Park, Maryland, USA.
22. q-Space Diffusion MRS and MRI in Neuronal Tissues. The third UWS Symposium on NMR Imaging and Diffusion, UWS Campbell-town Campus, October 27th, **2007**, Western Sydney, Australia (PLENARY lecture).
23. q-Space Diffusion MRS and MRI: From Diffraction in Phantoms to Structure and Pathology in Neuronal Tissues. Israel-UK Bi-National Workshop on MRI of Brain

Connectivity and Microstructures, Daniel Hotel Resort & Spa, The Dead Sea, Israel, November 5-6th, **2007**, Israel.

24. Magnetic Nanoparticles for Cellular MR Imaging of Stem Cell's Trafficking in Experimental Models. Ministry of Health Meeting on Nanomedicine, Novotel-Jerusalem, March 11, **2008**.

25. DTI: Concepts, Quantification, Standardization & Quality Issues, **Educational Course**, *The 16th Scientific Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, Canada, May 03-09, **2008**.

26. MRI of Cell Tracking in Huntington Disease Animal Model, The 4th Tel Aviv Human Brain Mapping Meeting on "Brain Mechanisms", Tel Aviv University, Tel Aviv, 13-14 July, **2008**.

27. Structure and Pathology by q-Space Diffusion NMR and MRI: From Phantoms, to Nerves and CNS. Bat Sheva Seminar on "Frontiers of Biomedical Magnetic Resonance", Safed, Israel, September 20-25, **2008**.

28. New Insights from Diffusion NMR: Molecular Capsules and Beyond, the 75th Meeting of the Israel Chemical Society (ISC), January 56-56, **2010**, Tel Aviv, Israel.

29. From Porous Materials to CNS and Back: Determination of Pore Size and Shape in Porous Materials and Biological Cells Using Single and Double-PFG MR. Meeting of the Israeli Magnetic Resonance Society, Bar-Ilan University, Israel, 8-9 June, **2010**

30. Diffusion NMR of Hydrogen-Bonded Supramolecular Systems. The 11th International Conference on Calixarenes (Calix11), Tarragona, Spain, June 26-29, **2011**

31. Diffusion NMR and MRI in Confined Spaces: From Model Systems to CNS. Frontiers in Biomedical Magnetic Resonance, Tel Aviv, Israel, October 27, **2011**

32. Single and Double-PFG NMR and MRI: From Molecular Containers to Imaging of the CNS, The 10th YBMRS meeting. Blankenberge, Belgium, November 21-23, **2011**. (PLENARY lecture)

33. Single and Double-PFG NMR and MRI: From Model Systems to Imaging of the CNS. The 10th EUROMAR 2012 meeting, Dublin, Ireland, July 1-5, **2012**

34. From q-Space Diffusion Imaging to Double-PFG MRI of the CNS. ISMRM Workshop on "Advances in Diffusion Imaging", Xiamen, China, December 14, **2012**. (PLANARY Lecture)

35. Double-PFG NMR and MRI: From Model Systems to Imaging of the CNS, Workshop on double-PFG MR, Ice Hotel, Kiruna Sweden, January 15-18, **2013**. (PLENARY lecture)

36. From Supramolecular Chemistry to Microstructure in the CNS: A look from Diffusion NMR and MRI, the 78th Annual Meeting of Israel Chemical Society, Tel Aviv, Israel, February 12-13, **2013**. (PLENARY Lecture)

37. Diffusion NMR of Molecular Capsules and Beyond, the 80th Annual Meeting of Israel Chemical Society, Tel Aviv, Israel, February 17-18, **2015**.
38. NMR Studies of Molecular Capsules and Pillar[5]arenes, 13th International Conference on Calixarenes (Calix 2015), Giardini Naxos, Italy, July 5-9, 2015.
39. Diffusion NMR in Supramolecular Chemistry and in Biomedicine, The 81th Meeting of the Israel Chemical Society, David Intercontinental Hotel, Tel-Aviv, Israel, February 09-10, **2016**. (PLENARY Lecture)
40. Single and Double Encoding Diffusion MRS and MRI: From Model Systems to Imaging of the CNS, The XLV National Congress on Magnetic Resonance, GIDRM, Modena, Italy, September 5-7, **2016**. (PLENARY Lecture)
41. From DWI to QSI and Beyond, A Spin Thro' The History of Restricted Diffusion MR, CUBRIC, Cardiff University, Jan 31st-Feb 1st, **2017**, UK. (PLENARY Lecture)
42. Diffusion NMR of Self-Assembled Polymers, Molecular Capsules and Beyond, 4th International Conference on Cucurbiturils (ICCB2017, Brno, Czech Republic, June 27-30, **2017**.
43. Recent Applications of Water Soluble Pillararenes, The 3rd TAU/NYU Symposium on New Horizons in Chemistry, Tel Aviv, February 4-6, **2018**
44. Diffusion NMR in Supramolecular Chemistry and Beyond, ICS Symposium Honoring the Wolf Prize Laureates Makoto Fujita and Omar M. Yaghi, May 30th, IIT, Haifa, **2018**.
45. Pillararenes and their Applications, The 15th International Conference on Calixarenes, Calix-2019, Cassis, France, June 10-14, **2019**.
46. Pillararenes: From Inhibitors of Biofilm Formation to Supramolecular Organogels and Boxes, The 85th Meeting of the Israel Chemical Society, ICC (Binyanei Hauma), Jerusalem, Israel, February 18-19, **2020**.
47. Applications of Diffusion NMR in Supramolecular Chemistry and Beyond: A personal Perspective, The 10th GERMN, 9th Ibero-American, 7th Iberian NMR Meeting, April 26-29, **2021** (virtual meeting) (PLENARY).
48. Diffusion NMR and DOSY in Cavity Containing Supramolecular Systems in Solution, 3rd Noah Summer School, Berlin Germany, Sept. 20-23, **2021**. (PLENARY).
49. Supramolecular Chemistry of Pillararenes, The 16th International Conference on Calixarenes, Calix-2021, New-Orleans, USA, July 10-14, **2022**.
50. Diffusion NMR in Supramolecular Chemistry, The 2nd International Conference on Non-Covalent Interactions (INCI), Strasburg, France, July 18-22, **2022**. (PLENARY).

COLLABORATIONS (Past and Present)

1. Prof. David Reinhoudt, Department of Chemistry, Twente University, P.O. Box 217, 7500 AE Enschede, The Netherlands.
2. Prof. Rocco Ungaro, Department of Organic and Industrial Chemistry, Parma University, Viale delle Scienze 78, I-43100 Parma, Italy.
3. Prof. Peter Basser, National Institute of Health (NIH), NICHD/LIMB Section on Tissue Biophysics, Building 13, Room 3N-17 Bethesda, MD 20892-5766, USA.
4. Prof. Volker Böhmer, Institut für Organische Chemie, Universität Mainz, J.-J-Becher Weg, 34 SB1, D-55099 Mainz, Germany.
5. Prof. Ilana Gozes, Clinical Biochemistry, Sackler Faculty of Medicine, Tel Aviv University and Prof. Esther Shohami, Pharmacology, The Hebrew University Hadassah Medical Center, Jerusalem
6. Prof. Melchiorre F. Parisi, Department of Organic and Biological Chemistry, University of Massina, Italy
7. Prof. Ian D Duncan, Department of Medical Sciences, School of Veterinary Medicine, University of Wisconsin-Madison, WI, USA
8. Prof. Daniel Offen, Felsenstein Medical Research Center, Department of Neurobiology, Rabin Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Israel.
9. Prof. Leif Schröder, Molecular Imaging, Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP), Berlin, Germany

OTHER ACADEMIC ACTIVITIES

1995-2003, Referee for the Annual Meeting of the International Society of Magnetic Resonance in Medicine (ISMRM)

Member of Organizing Committee of the 63rd Israel Chemical Society Meeting, Dan Panorama Hotel, Tel Aviv, Israel, **1998**

1999-2002, Member of the Committee for Research Equipment of the Israel Science Foundation (ISF) of the Israel Academy of Sciences and Humanities.

2000-2006, Member of Scientific Committee of the Ela-Kodesh Institute, Tel Aviv University

Member of the local Organizing Committee of the 14th Conference of the International Society of Magnetic Resonance, ISMAR **2001**, Jerusalem, Israel.

Member of the local Organizing Committee of the 12th International Symposium on Supramolecular Chemistry (ISSC XII), **2002**, Eilat, Israel

Chair of the Bat-Sheva the Rothschild Seminar on “Diffusion NMR and MRI: From Molecules to the Entire Human Brain”, August 26-30, **2001**, Tel Aviv, Israel

Chair of the 69th Annual Meeting of the Israel Chemical Society (ICS), David Intercontinental, February 3-4 **2004**, Tel Aviv, Israel

Member of Organizing Committee of the 70th Israel Chemical Society (ICS) Meeting, David Intercontinental, February 15-16, **2005**, Tel Aviv, Israel

2005-2008, Director of the MRI unit of Tel Aviv University

2007-2008, Director of the Alfredo Federico Strauss Center for Computational Neuro-Imaging, Tel Aviv University

2007-Scientific Organizer of the Israel-UK Bi-National Workshop on MRI of Brain Connectivity and Microstructures, Daniel Hotel Resort & Spa, The dead Sea, Israel, November 5-6th, **2007**, Israel.

2005-2008, Head of the Department of Organic Chemistry, School of Chemistry, Tel Aviv University.

2010-2012, Senate representative in the BOG of TAU

2008-2012, Head of the School of Chemistry of Tel Aviv University.

2008-2012, Member of the small senate of TAU

2014, Head of the PAZI committee for Chemistry and Materials

2014-2019, Head of the PhD student committee of the School of Chemistry

2014-2015, ISF Grant committee in biomedical engineering

2017, BSF committee in Chemistry

2017, Co-Chair of the Symposium honoring the recipients of Sackler Prize in Physical Sciences (Chemistry in the field of Magnetic Resonance).

2017-2020, Member of the small senate of TAU

2017-2021, Member of the ICS committee for ICS best senior scientist

2023, Co-Chair of the joint conference on calixarene and cucurbituril (JCCC), Dan Panorama, Tel Aviv, Israel, July 16-21, 2023.

MEMBERSHIP IN NATIONAL AND INTERNATIONAL ASSOCIATIONS

1994-Present, Israel Chemical Society (ICS).

1994-Present, International Society of Magnetic Resonance in Medicine (ISMRM).

1999-2010, Israel Society for Neurosciences (ISFN).

2006-Present, American Chemical Society (ACS).

EDITORIAL BOARD

2010- Present, *Israel Journal of Chemistry* (Wiley-VCH).

2011- 2016, *Journal of Nanobiotechnology*.

Reviewer of the Following Journals,

Nature; Nature Chemistry; Nature Protocols; Angew. Chem. Int. Ed.; J. Am. Chem. Soc.; Nano Letters; Chemistry Eur. J.; Chem. Sci.; Chem. Commun.; RSC Advances; Eur. J. Organic Chem.; ChemPhysChem.; Org. Letters; Langmuir; J. Org. Chem.; Inorganic Chem.; New. J. Chem.; Organic & Biomolecular Chem.; J. Phys. Org. Chem.; Magn. Reson. Med.; NMR in Biomed.; J. Magn. Reson.; Israel. J. Chem.; J. Nanobiotechnology; J. Fluorine Chem.; Magn. Reson. Imaging; Magn. Reson. Chem.; J. Material Chem.; NeuroImage; ACSNano; Chemistry Asian J.; Asian JOC; Nanotechnology Reviews; Chem. Soc. Rev.; Physica Medica: Eur. J. Biophysics; Stem Cell Research & Therapy; ChemCatChem.; J. Chem. Phys.; Scientific Report; Chem. (Cell Press); Organic Chem. Front.; Chemistry Open; Polymer Chem., Macro. Rapid Comm. and more.



Yoram Cohen

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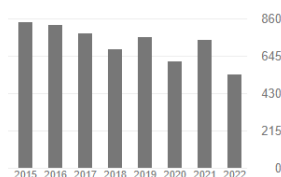
Supramolecular chemistry pillararenes self-assembly diffusion MRI diffusion NMR

FOLLOWING

TITLE	CITED BY	YEAR
Early detection of regional cerebral ischemia in cats: comparison of diffusion-and T2-weighted MRI and spectroscopy ME Moseley, Y Cohen, J Mintonovitch, L Chileuitt, H Shimizu, ... Magnetic resonance in medicine 14 (2), 330-346	2146	1990
Diffusion-weighted MR imaging of anisotropic water diffusion in cat central nervous system. ME Moseley, Y Cohen, J Kucharczyk, J Mintonovitch, HS Asgari, ... Radiology 176 (2), 439-445	1511	1990
Diffusion-weighted MR imaging of acute stroke: correlation with T2-weighted and magnetic susceptibility-enhanced MR imaging in cats. ME Moseley, J Kucharczyk, J Mintonovitch, Y Cohen, J Kurhanewicz, ... American Journal of Neuroradiology 11 (3), 423-429	1235	1990
Diffusion NMR spectroscopy in supramolecular and combinatorial chemistry: an old parameter—new insights Y Cohen, L Avram, L Frish Angewandte Chemie International Edition 44 (4), 520-554	1205	2005
Comparison of diffusion-and T2-weighted MRI for the early detection of cerebral ischemia and reperfusion in rats J Mintonovitch, ME Moseley, L Chileuitt, H Shimizu, Y Cohen, ... Magnetic resonance in medicine 18 (1), 39-50	621	1991
High b-value q-space analyzed diffusion-weighted MRS and MRI in neuronal tissues – a technical review Y Cohen, Y Assaf NMR in Biomedicine: An International Journal Devoted to the Development and ...	308	2002
High b-value q-space analyzed diffusion-weighted MRI: Application to multiple sclerosis Y Assaf, D Ben-Bashat, J Chapman, S Peled, IE Biton, M Kafri, Y Sagev, ... Magnetic Resonance in Medicine: An Official Journal of the International ...	301	2002

Cited by [VIEW ALL](#)

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Citations	16887	4112
h-index	60	30
i10-index	156	91



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Co-authors [EDIT](#)

	Yaniv Assaf Department of Neurobiology, Tel ...	>
	Liat Avram Weizmann Institute of Science	>
	Noam Shemesh Champalimaud Research, Cham...	>
	michael moseley	>

LIST OF PUBLICATIONS

ARTICLES

1. M. Halpern, Y. Cohen, Y. Sasson, and M. Rabinovitz,
Hydroxide Ion Initiated Reactions under Phase Transfer Catalysis Conditions 8: Notes
on the Interfacial Mechanism,
Nouveau J. Chim. 8, 443-444 (1984).
2. A. Minsky, Y. Cohen, and M. Rabinovitz,
Novel Polycyclic Dianions: Metal Reduction of Nitrogen Heterocycles.
J. Am. Chem. Soc. 107, 1501-1504 (1985).
3. Y. Cohen, J. Klein, and M. Rabinovitz,
Novel Heterocyclic Anions: Benzo[b]thiophene Dianion, The First Sulphur Double
Charged $4n\pi$ System,
J. Chem. Soc. Chem. Commun. 1033-1034 (1985).
4. M. Rabinovitz, Y. Cohen, and M. Halpern,
Hydroxide Ion Initiated Reactions Under Phase Transfer Catalysis Conditions:
Mechanism and Implications.
Angew. Chem. Int. Ed. Engl. 25, 960-970 (1986).
5. Y. Cohen, J. Klein, and M. Rabinovitz,
Stable Polycyclic Anions: Dianions From Overcrowded Ethylene,
J. Chem. Soc. Chem. Commun. 1071-1073 (1986).
6. Y. Cohen, A. Y. Meyer, and M. Rabinovitz,
New Polyheterocyclic $4n\pi$ Electron Dianions: Paratropicity, Charge Delocalization
and Reaction.
J. Am. Chem. Soc. 108, 7039-7044 (1986).
7. D. Tamarkin, Y. Cohen, and M. Rabinovitz,
Ring Closure of Heterocyclic Systems by Potassium Graphite Intercalate-C₈K,
Synthesis 196-197 (1987).
8. Y. Cohen, J. Klein, and M. Rabinovitz,
New Heterocyclic Dianions: NMR Characterization of 1,3-Diphenylbenzo[c]
thiophene Dianion: A Stable $4n\pi$ Charged System Containing Sulphur,
J. Chem. Soc. Chem. Commun. 1538-1540 (1987).
9. Y. Cohen, N. H. Roelofs, G. Reinhardt, L.T. Scott, and M. Rabinovitz,
Novel Carbocyclic Dianions: NMR Study of Charge Delocalization, Paratropicity and
Structure in the Dianions of Acephenanthrylene and Aceanthrylene,
J. Org. Chem. 52, 4207-4214 (1987).

10. Y. Cohen, J. Klein, and M. Rabinovitz,
1,3-Diphenylbenzo[c]furan Dianion: NMR Characterization of a $4n\pi$ Heterocyclic Dianion Containing Oxygen,
J. Chem. Soc. Perkin Trans. 2, 31-38 (1988).
11. Y. Cohen, M. Rabinovitz, and J. Klein,
The Charge Alternation Concept: Application to Cyclic Conjugated Doubly Charged Systems,
J. Am. Chem. Soc. 110, 4634-4640 (1988).
12. M. Rabinovitz, and Y. Cohen,
Probing The Nature of Polycyclic Conjugated Anions: From Carboxylic to Heterocyclic Dianions: NMR Studies , π -Delocalization and Electronic Structure,
Tetrahedron, 44, 6957-6994 (1988).
13. Y. Cohen, L.-H. Chang, L. Litt, and T. L. James,
Spatially Localized COSY Spectra from a Surface Coil Using Phase-Encoding
J. Magn. Reson., 85, 203-208 (1989).
14. Y. Cohen, L.-H. Chang, L. Litt, F. Kim, J. W. Severinghaus, P. R. Weinstein, R. L. Davis, I. Germano, and T. L. James,
Stability of Brain Intracellular Lactate and ^{31}P Metabolite Levels at Reduced Intracellular pH During Prolonged Hypercapnia in Rats,
J. Cereb. Blood Flow Metab. 10, 277-284 (1990).
15. M. E. Moseley, Y. Cohen, J. Mintorovitch, L. Chileuitt, H. Shimizu, J. Kucharczyk, M. F. Wendland, and P. R. Weinstein,
Early Detection of Regional Cerebral Ischemia in Cats: Comparison of Diffusion- and T2-weighted MRI and Spectroscopy,
Magn. Reson. Med. 14, 330-346 (1990).
Listed in the 100 most cited papers in Neuroimaging History (see *NeuroImage*, 139, 149-156 (2016)) (Nu. 41, 1217 citations). Google Scholar citations: 1612.
16. M. E. Moseley, J. Kucharczyk, J. Mintorovitch, Y. Cohen, J. Kurhanewicz, N. Deruglin, H. Asgari, and D. Norman,
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Supervised Students (M.Sc.)

- 1) Orna Mayzel, NMR Diffusion Measurements of Ionophores and Their Complexes. August **1995**.
- 2) Yaniv Assaf, Structural and Patho-physiological Studies of *in Vitro* and *in Vivo* Brain Using Diffusion Weighted NMR Spectroscopy and Imaging, February **1996**.
- 3) Michal Komlosh, ¹H NMR Editing of GABA in Brain Tissue Using the 1D-COSY Pulse Sequences. March **1996**.
- 4) Majed Eassa, A New Ligand for the Preparation of Self-Assembled Supramolecular Systems: Synthesis and Complexation. April **1996**.
- 5) Dana Michaelson-Wessely, Self-Assembly of Helical Metallo-supramolecular Systems. October **1998**.
- 6) Ayelet Gafni, NMR Diffusion of Supramolecular Systems Containing Cyclodextrins. October **1998**.
- 7) Liat Avram, Pseudorotaxanes and Positive Cooperativity in Helicates Self-Assembly: A NMR Study. October **2001**.
- 8) Inbal E. Biton, Magnetic Resonance Imaging and Spectroscopy of the Nervous System: Melatonin Stimulation and Sciatic nerve Degeneration. October **2001**.
- 9) Isaac Zigelboim, Self-Assembly of Supramolecular Ladders and Grids on the Way to Channel-like Structures. May **2002**.
- 10) Omri Segev, NMR of Organophosphorus Compounds. September **2003**.
- 11) Moshit Ben-Ishay, Diffusion NMR of Surpramolecular Systems. October **2004**.
- 12) Einat Marcovici, Supramolecular Chemistry of Silicon-Nitrogen Bond Molecular Capsules, November **2006**.
- 13) Sarit Slovak, Diffusion NMR of Supramolecular Systems Based on Calixarne Derivatives, November **2007**.
- 14) Tal Adiri, Toward the Development of Bimodal Magnetic and Fluorescent Contrast Agent for Cellular Imaging, October **2009**.
- 15) Dana Krepel, Cellular MR Imaging of Experimental Models of Parkinson Disease, September **2009**.
- 16) Tal Sarid, Diffusion NMR of Supramolecular Systems Based on Cucurbituril Derivatives, November **2009**.

- 17) Debbie Anaby, q-Space Diffusion MRI (QSI) of the Central Nervous System of Long Evans Shaker (les) Rats, October **2009**.
- 18) Tobi Reuveni, DTI in the spinal cord and ¹⁹F MRI of Amyloid plaques in an Experimental Model of Alzheimer's Disease, February **2009**.
- 19) Maya Tauber, Magnetic Resonance Spectroscopy and Imaging of the CNS: Pathology and Cellular Imaging, April **2014**.
- 20) Alissa Keisar (Naugolny), Water soluble Pillar[5]arene Systems as Platforms for Xenon Hosts and as Anti-biofilm Agents. July **2016**.
- 21) Dana Keizermann, Phosphonium and Ammonium Water-Soluble Pillararenes as Efficient Biofilm Inhibitors, February **2017**.
- 22) Yuval Scher, Measurement of Transmembrane Exchange Rates by Diffusion NMR Methods, November, **2018**.
- 23) Inbar Horin, Molecular Containers: Towards Kinetically Stable and Self-Assembly of a Bis Resorcin[4]arene Derivative, December **2018**.
- 24) Maya Hadar, Structure Activity Relationship of Cationic Pillar[5]arenes as Biofilm Inhibitors. December **2018**.
- 25) Shir Levy, Novel Phantoms for the Validation of the Microstructural Information Extracted from Modeling of Diffusion MRI data, February **2022**.

Supervised Students (PhD)

- 1) Moshe Greenwald, New Helical Supramolecular Systems Obtained by Self- Assembly: Preparation, Structure Elucidation and Evaluation of the Factors Governing Such Processes. January **2000**.
- 2) Ariel Litwak, New ligands and Complexes as Potential MRI Contrast Agents. July **2000**.
- 3) Mazi Shaul, Self-Assembly of Phenanthroline-Containing Supramolecular Systems, April **2001**.
- 4) Yaniv Assaf, Diffusion MRI and MRS: Applications to Pathophysiology and Structure of Neuronal Tissues. November **2001**.
- 5) Limor Frish, Investigation of Supramolecular Systems by Advanced NMR Diffusion Measurements. March **2004**.
- 6) Inbal E. Biton, Diffusion Magnetic Resonance Imaging and Spectroscopy of the Central Nervous System, March **2006**.

- 7) Revital Nossin-Manor, High b-Value q-Space Diffusion MRI of the Normal and Injured Spinal Cord, May **2006**.
- 8) Liat Avram, Diffusion NMR: Applications in Supramolecular Systems and Model Systems of White Matter, April **2007**.
- 9) Isaac Zigelboim, Preparation and Characterization of Target Specific MRI contrast Agents, December **2008**.
- 10) Amnon Bar-Shir, Diffusion Magnetic Resonance Spectroscopy and Imaging of the CNS: From Structure to Pathology, February **2009**.
- 11) Orna Mayzel-Oreg, Application of Magnetic Resonance Imaging (MRI) Techniques for Studying Experimental Models of Neurological Disorders and Brain Function, January **2011**.
- 12) Noam Shemesh, Double-Pulsed-Field-Gradient Magnetic Resonance as a Probe for Underlying Micro-Architecture: From Porous Media to the Central Nervous System, October **2011**.
- 13) Tamar Evan-Salem, Application of Diffusion NMR in the Study of Supramolecular Systems: From Solution to Nanoparticles, December **2011**.
- 14) Einat Wirtheim, From Nanometer Capsules in Solution to Target Specific Magnetic Nanoparticles for MRI, February **2013**.
- 15) Sarit Slovak, Non-Covalent Self-Assembled Polymers and Molecular Capsules: A view from Diffusion NMR. February **2014**.
- 16) Tal Adiri, NMR and Diffusion NMR for Studying Supramolecular Systems in Solutions. December **2015**.
- 17) Debbie Anaby, Diffusion MRS and MRI of Long Evans Shakers: Structure and Pathology. May **2016**.
- 18) Darya Morozov, Single and Double PFG NMR and MRI: From Model Systems to MR Imaging of Microstructure in Neuronal Systems, July **2016**.
- 19) Shani Yariv-Shoushan, Molecular Probes for Chemical and Biological Sensing, August **2017**.

Former Research Associates

2012-2013, Dr. Danielle Marciano, IIBR

2014-2016, Dr. Roymon Joseph, PBC Post-doctoral fellow.

2016-2018, Dr. Yossi Zafrani, IIBR

1-2020-9-2020, Dr. Ori Shalev, Post-doctoral fellow

Current Lab Members

2017-Present, Dana Kaizerman, PhD Student,

2019-Present, Maya Hadar, PhD Student,

2020-Present, Inbar Horin, PhD Student,

2021-Present, Dina Yuffet, PhD Student,

2020-Present, Dr. Tamar Evan-Salem, Research associate

2021-Present, Maysa Teixeira Resende, post-doc.

Most Cited Papers of Professor Yoram Cohen
Citations as of December 1, 2022

1. M. E. Moseley, Y. Cohen, J. Mintorovitch, L. Chileuitt, H. Shimizu, J. Kucharczyk, M. F. Wendland, and P. R. Weinstein, Early Detection of Regional Cerebral Ischemia in Cats: Comparison of Diffusion- and T2-weighted MRI and Spectroscopy, *Magn. Reson. Med.*, 14, 330-346 (1990).

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2. M. E. Moseley, Y. Cohen, J. Kucharczyk, J. Mintorovitch, H. Asgari, M. F. Wendland, J. Tsuruda, and D. Norman, Diffusion-Weighted MRI of Anisotropic Water Diffusion in Cat CNS, *Radiology*, 176, 439-445 (1990).

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3. M. E. Moseley, J. Kucharczyk, J. Mintorovitch, Y. Cohen, J. Kurhanewicz, N. Deruglin, H. Asgari, and D. Norman, Diffusion-Weighted MR Imaging of Acute Stroke: Correlation with T2-weighted and Magnetic Susceptibility Enhanced MR Imaging in Cats, *Am. J. Neuroradiology*, 11, 423-429 (1990).

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4. Y. Cohen, L. Avram, L. Frish, Diffusion NMR Spectroscopy in Supramolecular and Combinatorial Chemistry: An Old Parameter New Insights, *Angew. Chem. Int. Ed.*, 44, 520-554 (2005).

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7. Y. Assaf, D. Ben-Bashat, J. Chapman, S. Peled, I. E. Biton, M. Kafri, Y. Segev, T. Hendler, A. D. Korczyn, M. Graif, and Y. Cohen, High b-Value q-Space Analyzed Diffusion-Weighted MRI: Application to Multiple Sclerosis, *Magn. Reson. Med.*, 47, 115-126 (2002).

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9. L. Avram, and Y. Cohen, Spontaneous Formation of Hexameric Resorcinarene Capsule in Chloroform Solution as Detected by Diffusion NMR., *J. Am. Chem. Soc.*, 124, 15148-15149 (**2002**).

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