CURRICULUM VITAE

1. Personal Details

Permanent Home Address: 13 Odem St. Zichron Yaakov, 3093525, Israel

Office Telephone Number: 04-9901950

Electronic Address: ssivan@braude.ac.il

2. Higher Education

A. Undergraduate and Graduate Studies

Period of Study	Name of Institution and Department	Degree
1995-2000	Technion – Israel Institute of Technology Department of Biomedical Engineering	Ph.D.
1991-1995	Technion – Israel Institute of Technology Department of Biomedical Engineering	M.Sc.
1988-1991	Technion – Israel Institute of Technology Faculty of Biology	B.Sc.

B. Post-Doctoral Studies

Period of Study	Name of Institution and Department	Degree	Name of host
2006-2008	University of Oxford, UK Department of Physiology, Anatomy and Genetics	Marie-Curie Postdoctoral Fellow	Prof. Jill Urban
2003-2005	Technion – Israel Institute of Technology Department of Biomedical Engineering	Research Fellow	The late Prof. Alice Maroudas

3. Academic Ranks and Tenure in Institutes of Higher Education

Dates	Name of Institution and Department	Rank/Position
11/2015-present	Braude College of Engineering, Department of Biotechnology Engineering	Associate Professor
2013-2015	Braude College of Engineering, Department of Biotechnology Engineering	Senior Lecturer
2012-2014	Technion – Israel Institute of Technology, Department of Biomedical Engineering	Adjunct Senior Lecturer
2008-2013	Technion – Israel Institute of Technology, Department of Biomedical Engineering	Adjunct Senior Research Fellow
2006-2008	University of Oxford, UK Department of Physiology, Anatomy and Genetics	Marie-Curie Fellow (Post-doctorate)
2003-2005	Technion – Israel Institute of Technology, Department of Biomedical Engineering	Research Fellow
2001-2003	Technion – Israel Institute of Technology, Department of Biomedical Engineering	Adjunct Lecturer
2000-2001	Technion – Israel Institute of Technology, Department of Biomedical Engineering	Research Fellow
1992-2000	Technion – Israel Institute of Technology, Department of Biomedical Engineering	Teaching and Research Assistant

4. Offices in Academic Administration

*= Activities following the last promotion (2015)

Dates	Name of Institution and Department	Rank/Position
*05/2024-	Braude College of Engineering	**President**
*05/2024-		Chairwoman, Committee for Sabbatical
*05/2024-		Chairwoman, Construction Process Control Committee
*05/2024-		Chairwoman, Fundraising Committee
*04/2018-08/2024	Braude College of Engineering	**Rector (Vice President for Academic Affairs)**
*04/2018-08/2024		Chairwoman, Institutional Academic Council (Senate)
*04/2018-08/2024		Chairwoman, Ethics Committee
*04/2018-08/2024		Chairwoman, Research Committee
*04/2018-05/2020		Chairwoman, International Relations Office (IRO)

*04/2018-08/2024		Chairwoman, Excellence Committee
*04/2018-08/2024		Chairwoman, Students' Appeal Committee
*04/2018-08/2024		Chairwoman, Steering Committee of the Center of Engineering Education and Entrepreneurship
*04/2018-08/2024		Chairwoman, Committee for Training and Research Collaboration
*04/2018-08/2024		Chairwoman, Continuing Education Committee
*04/2018-present		Member, Rank Promotion and Tenure Committee
*04/2018-08/2024		Member, Committee for Academic Affairs
*04/2018-05/2024		Member, Committee for Sabbatical
*10/2020-present		**Head, Research Authority**
*04/2021-08/2024		Chairwoman, Institutional Steering Committee for Expanding the Accessibility of Higher Education to Arab
*04/2021-08/2024		Member, Institutional Computation Committee
08/2013-03/2018	Braude College of Engineering	**Head, Department of Biotechnology Engineering**
08/2013-03/2018		Chairwoman, Internship Committee
08/2013-03/2018		Chairwoman, Curriculum Committee
08/2013-03/2018		Chairwoman, Student Advisory Committee
08/2013-03/2018		Chairwoman, Purchasing Committee

5. Scholarly Positions and Activities outside the Institution

*= Activities following the last promotion (2015)

Years	Member of the Editorial Board
*2022-present	Pharmaceutics (IF 6.5, Q1)

Years	Reviewing for Funding Bodies
*2018-present	Israel Science Foundation (ISF)

Years	Reviewing for Refereed Journals
*2015-present	Osteoarthritis and Cartilage
2013-present	Advanced Drug Delivery Reviews
2013-present	Israel Journal of Chemistry
2012-present	Connective Tissue Research
2012-present	Spine
2011-present	Cartilage
2010-present	Acta Biomaterialia
2007-present	European Spine Journal

Years	Reviewing for Conferences
*2017	Marie-Curie Actions Conference (Member of the Judge Panel)
*2016	World Biomaterials Conference (Member of the Judge Panel)

Years	Membership in Professional Societies
2010-2012	Israel Society for Medical and Biological Engineering (ISMBE)
2005-2013	American Society for Biochemistry and Molecular Biology (ASBMB)
2003-2005	Orthopaedic Research Society (ORS)

Years	Membership in Rank Promotion Committees
*2018	Promotion to the rank of Senior Lecturer (Azrieli College)

Years	Research Affiliate
*2019 (Aug-Sep)	Visiting Fellow, MIT (Prof. Robert Langer)

6. Presentation in Scholarly Conferences

A1. International Conferences

(KN – Keynote; PP – paper presentation; P – poster presentation; IL – invited lecturer; SC – session chair; Pan – panelist; MOC – member of the organizing committee).
*= Presentation in Scholarly Conferences following the last promotion (2015)

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
*October, 2024	Stem Cells and Regenerative Medicine	Berlin (virtual)	Encapsulation of human bone marrow-derived mesenchymal stem cells	IL

	(SCRM2024)		in small alginate beads using one-step emulsification by internal gelation: in vitro and in vivo evaluation in a degenerate disc model	
*November, 2023	3rd International Conference on Microbiology & Infectious Diseases. (Presented by co-author, Dr. Marcella Karpuj).	Dubai, UAE	Comparative bioinformatic analysis identifies conserved regions for enhanced detection and therapeutics targeting of SARS-CoV-2 and future pandemics.	IL
*September, 2023	3rd Global Conference on Polymers, Plastics and Composites (PPC-2023)	Barcelona**,** Spain	Polyanhydride-based Nanoparticles for Controlled and time-scheduled Ocular drug delivery	IL, SC
*April, 2019	BioNanoMed 2019 (Presented by co-author, Dr. Iris Weitz).	Graz, Austria	Preparation of PLGA nanospheres as carriers for copper oxide nanoparticles-based imaging contrast agent	PP
*August 2018	17th Biennial Congress of the Metastasis Research Society and Young Investigator Satellite Meeting. (Presented by the student, Benguigui Madeleine).	Princeton University	Copper oxide nanoparticles inhibit pancreatic tumor growth by targeting tumor initiating cells.	PP
*June, 2018	CIMTEC 2018, 8th Forum on New Materials. (Presented by co-author, Dr. Iris Weitz).	Perugia, Italy	Synthesis and characterization of copper oxide based polymeric nano-systems for biomedical imaging.	PP
*June, 2018	PolymerTech18	Meresburg, Germany	Biomimetic approach to the development of glycosaminoglycan analogues for intervertebral disc repair	IL

*September, 2016	14th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE)	Tel-Aviv	Novel biomimetic glycosaminoglycan analogues for IVD repair: Replacing like with like	IL
November, 2014	BIT's 5th World Gene Convention-2014 (WGC-2014)	Haikou, China	Bio-inspired, enzymatically active, anti-restenotic/anti-thrombotic carrier	IL
May, 2013	7th Polish-German Symposium on Pharmaceutical Sciences	Gdańsk, Poland	Insights into the proline hydroxylation of elastin derived from different tissues and species	Pos
November, 2012	Marie Curie People Conference	Nicosia, Cyprus	Technologies for disc repair **(Winner of the 2012 Marie Curie Prize)**	**KN**
September 2012	7th European Elastin Meeting	Ghent, Belgium	Molecular insights into alterations of elastic fibers	PP
July 2011	Gordon Research Conference (GRC) Elastin & Elastic Fibers (Presented by co-author, Dr. Christian Schmelzer)	Biddeford, ME, USA	Molecular comparison of elastins from different human tissues	Pos
June, 2011	International Society for the Study of the Lumbar Spine, ISSLS	Gothenburg, Sweden	Bovine caudal discs: relationship between disc height, cell density and blood supply	PP
April, 2011	BSMS	Bristol, UK	Cell density of the intervertebral disc is regulated by blood supply	PP
September, 2010	23rd European Society for Biomaterials, ESB2010	Tampere, Finland,	A sulphonate based hydrogel for nucleus pulposus repair.	PP
February, 2010	17th International Local Drug Delivery (LDDR) meeting and cardiovascular course on	Geneva, Switzerland	Targeted delivery at stent surface of in-situ produced drugs: A novel therapeutic	PP

	Revascularization and Molecular Strategies		approach	
July, 2008	ASME 2008 9th Biennial Conference on Engineering Systems Design and Analysis	Haifa, Israel	Surface active phospholipids as cartilage lubricants	PP
June, 2007	ASME 2007 Summer Bioengineering Conference	Colorado, USA	Intra- and extrafibrillar fluid exchange in the disc	PP
December, 2006	International Society of Liposomes (ISL)	London, UK	Liposomes as potential biolubricant and wear reduction in human synovial joints	PP
September, 2005	World Tribology Congress-III	Washington D.C.	Effect of active additives on the friction of human articular cartilage.	Pos
February, 2005	51st Annual Meeting of the Orthopedic Research Society, ORS	Washington D.C.	Racemization of aspartic acid and non-enzymatic glycation of human intervertebral disc constituents as measures of turnover	Pos
February, 2005	51st Annual Meeting of the Orthopedic Research Society, ORS	Washington D.C.	The origin of proteoglycans heterogeneity in the human intervertebral disc	PP
July, 2004	XIXth Annual Federation of European Connective Tissue Society, FECTS Meeting,	Sicily, Italy	Turnover of human disc constituents using aspartic acid as a marker of molecular age	Pos
November, 1998	XIVth International Society for Artificial Organs	Bologna, Italy	Modification of hemoglobin with NAD-based molecules: design and synthesis	IL

A2. Local Conferences

*= Local Conferences following the last promotion (2015)

Date	**Name of Conference**	**Place of Conference**	**Subject of Lecture/Discussion**	**Role**
*May, 2023	Osot Atzmaut (in the auspice of the	zoom	Liposomes to combat osteoarthritis	IL

	president of the state of Israel, for its 75th Anniversary)			
*****November ,2023 (postpone due to war)	The 16th BrauTED Conference	Kfar Giladi	Liposomes to treat osteoarthritis	PP
*October, 2019	Braude 15th Interdisciplinary Research Conference	Kfar Blum	Liposomes as Effective Biolubricants for Friction, Wear and Pain Reduction in Human Synovial Joints	PP
*October, 2016	Braude 12th Interdisciplinary Research Conference	Kibbutz Ha'Goshrim	Biologically-inspired interfaces	PP
*October, 2015	Braude 11th Interdisciplinary Research Conference	Kibbutz Ha'Goshrim	Bio-inspired enzymatically-active, anti-restenotic/anti thrombotic carriers	PP
December, 2013	The 2nd Conference of the Israel Society for Biotechnology Engineering (ISBE)	Tel-Aviv	Injectable hydrogels with high fixed charge density and swelling pressure for nucleus repair: biomimetic glycosaminoglycan analogues	PP
February, 2011	Israeli Society for Medical and Biological Engineering (ISMBE)	Tel-Aviv	Therapeutically-active implants exhibiting improved biocompatibility: an ex vivo study	PP
October, 2010	7th Israeli Chapter of Controlled Release Society (CRS)	Haifa	Sequential multi-factorial releasing scaffolds for tissue engineering: fabrication by the solvent/non-solvent sintering technology	**IL**

February, 2010	Israeli Heart Society (IHS)	Haifa	Novel therapeutic approach: drug factories on stent.	PP
June, 2009	Soft Matter at Interfaces: From Self Assembly to Nano-Confinement	Neve-Ilan	Phospholipid liposomes as potential biolubricants agents for friction and wear reduction in cartilage of human synovial joints: The role of phospholipid physical chemistry and nanoism	PP
December, 2007	Innovations in Cardiovascular Innovations (ICI)	Tel-Aviv	Drug factories on stents	PP
September, 2007	Israeli Controlled Release Society (ICRS)	Caesarea	Liposomes as potentiel biolubricant for friction and wear reduction in human synovial joints	PP
September, 2004	5th Annual meeting of the Israeli Chapter of the Controlled Release Society (ICRS)	Tel-Aviv	Immobilized biochemical systems: design and optimization of their spatial arrangement.	PP
July, 2004	XXIVth Annual Meeting Israeli Society for Vision and Eye Research	Neve-Ilan	Controlled release of local anesthetics from biodegradable and eye-injectable nanoparticles	Pos
September, 1993	Annual Meeting Israeli Society of Medical and Biological Engineering (ISMBE)	Tel-Aviv	Enzyme-based molecular logic systems	**IL**

B. Organization of Conferences or Sessions

*= Conferences or Sessions following the last promotion (2015)

Date	Name of Conference	Place of Conference	Subject of Conference/Role at Conference/Comments	Role
* September, 2016	14th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE 2016)	Tel-Aviv, Israel	Spine biomechanics/session chair	SC
April, 2011	Genodisc Meeting	Nahsholim, Israel	Disc degeneration linked pathologies /speaker	MOC

7. Invited Lecture\Colloquium Talks

*= Invited Lecture\Colloquium Talks following last promotion (2015)

Date	Place of Lecture	Name of Forum	Presentation/Comments
*October, 2019	Kfar Blum	Braude 15th Interdisciplinary Research Conference	Liposomes as Effective Biolubricants for Friction, Wear and Pain Reduction in Human Synovial Joints
November, 2013	Technion, Department of Biomedical Engineering	Colloquium Talk	Biologically-inspired materials for connective tissue repair
May, 2013	Institute of Pharmacy, Biosciences, Martin Luther University, Halle-Wittenberg, Germany	Colloquium Talk	Biomimetic approach to repair of cartilaginous tissues
March, 2013	Department of Biomedical Engineering, Technion, IIT, Haifa, Israel	Colloquium Talk	Structure, degeneration and repair of intervertebral disc
March, 2010	Budapest, National Center for Spinal Disorders, Buda Health Center,	Annual GenoDisc Meeting	Determination of the turnover of collagen, aggrecan and elastin in the human intervertebral disc using aspartic acid
March,	Institute of Biology NCSR	Annual GenoDisc	A needle micro-osmomter for measurement of

2009	Demokritos, Athens	Meeting	glycosaminoglycans
December, 2008	Istituto Ortopedico Galeazzi, Milan, Italy	Annual GenoDisc Meeting	Tissue turnover and matrix degradation: production and role of matrix fragments
May, 2007	University of Oxford, England	Colloquium Talk	Biomimetic approach to nucleus disc replacement and repair
September, 2005	University of Warwick, England	Annual EuroDisc Meeting	Turnover of the major components of the intervertebral disc
April, 2005	Department of Biomedical Engineering, University of Eindhoven, The Netherlands	Annual EuroDisc Meeting	Correlation of swelling pressure, intra-fibrillar water and collagen tensile in young and aged human intervertebral discs
April, 2004	Institut für Unfallchirurgische Forschung und Biomechanik, Universität Ulm, Germany	Annual EuroDisc Meeting	Major biochemical components of the intervertebral disc, their turnover and some functional properties

8. Research Grants

a. Grants Awarded

*= Research Grants following the last promotion (2015)

Role in Research	Co-researchers	Title	Funded by/Amount (C-competitive fund)	Year
*PI	Mirit Sharabi (PI)	Structural biomimetics of the intervertebral disc interfaces: lessons by reverse engineering **Published papers: 2**	Israel Science Foundation (ISF)[C] 1,080,000 NIS	2022-2026
*PI	Michal Amit (PI)	Novel injectable biomimetic glycosaminoglycan analogues for intervertebral disc	Israel Science Foundation (ISF)[C] 1,250,000 NIS	2017-2021

		regeneration **Published papers: 4, 7**		
PI		Molecular mechanism of synovial joint lubrication **Published papers: 25**	European Commission, FP7[C]: Marie Curie European Reintegration Grant (ERG)/45,000 Euros	2011-2014
Co-PI	Klein J. (PI) Maroudas A. (PI)	The molecular origin of lubrication in synovial Joints	McCutchen Foundation/ $100,000 (out of $400,000)	2011-2013
Co-PI	Maroudas A. (PI)	Disc-degeneration linked pathologies: novel biomarkers and diagnostics for targeting treatment, prevention and repair. **Published papers: 19, 21, 22**	European Commission, PF7[C]: 'Health' - GENODISC/220,000 Euros (out of 3.7M Euros)	2008-2013
PI		Development of injectable materials for intervertebral disc repair. **Published papers: 13, 14, 16, 17, 18, 23**	European Commission, FP6[C]: Marie Curie Intra European Fellowship /$335,000	2006-2008
Co-PI	Etsion, I. (PI) Maroudas A. (PI)	Nano particles to combat osteoarthritis in human joints. **Published papers**: **8, 15**	Technion, IIT: NEVET/ $10,000	2006-2007
Co-PI	Maroudas A. (PI)	Intervertebral disc degeneration: interplay of age, environmental and genetic factors. **Published papers**: **5, 6, 7, 9, 10, 12, 13**	European Commission, FP5[C]: 'Quality of Life' - EURODISC)/ $400,000 (out of 2.3M dollars)	2003-2005

b. Submission of Research Proposals – Not Funded

Role in Research	Co-researchers	Title	Funded by/Amount (C-competitive fund)	Year
*PI	Amir Adler, Mickey Gidon, Zeev Volkovich (PI)	Stroke Risk Prediction for Migraine Patients by Artificial Intelligence	Ministry of Science Technology and Space (MOST)[C]	2022
*Co-PI	Amir Adler (PI), Mickey Gidon, Zeev Volkovich (Co-PI)	Stroke Risk Prediction for Migraine Patients by Artificial Intelligence	Ministry of Health	2022
*PI	Mirit Sharabi (PI)	Towards tissue engineering of a whole intervertebral disc: from a single lamella to a whole organ	Ministry of Science Technology and Space (MOST)[C]	2021

9. Scholarships, Awards and Prizes

2013-2018 Excellent Lecturer, Braude College of Engineering

2012 The 2012 Marie-Curie Prize for Innovation and Entrepreneurship (EU) for the development of biomimetic materials for disc and cartilage repair (first Israeli to win this prize).

2011-2014 Marie-Curie Fellow, Re-integration (EU-ERG): Molecular mechanism of synovial joints lubrication.

2009 Spine Award in Regenerative Technologies for the Intervertebral Disc Biomaterial: 2009 Best New Technology (Sponsored by *Orthopedics This Week).*

2006-2008 Marie-Curie Fellow, Intra-European Grant (EU-IRG): Novel biomimetic approach to disc repair. University of Oxford.

1999-2000 Archie Micay Biomedical Research Fellowship

1998 Forchheimer Foundation Fellowship

1995-1997 Leonard and Diane Sherman Research Fund Fellowship

1992-1995 Julius and Dorothy Harband Fund Fellowship

10. Teaching

According to the Council of Higher Education (CHE), the VP for Academic Affairs is exempted from teaching obligations due to her/his many intensive duties within the institute.
Despite the exemption, I co-teach an advanced course and supervise graduate students within the framework of the M.Sc. program in Biotechnology, and final-year (Capston) undergraduate projects within the framework of the B.Sc. program in Biotechnology Engineering.

A. Courses Taught in Recent Years

Year	Name of Course	Type of Course	Degree	Number of Students
2013-2018	Technologies in Cells and Tissue Engineering	Lecture/Lab	M.Sc.	8-10
2013-2018	Methods in Separation and Diagnostics	Lab Course (Mandatory)	B.Sc.	30-40
2013-2018	Metabolism and Enzymology	Lecture/Lab (Mandatory)	B.Sc.	30-35
2013-2016	Scientific Writing	Workshop (Mandatory)	B.Sc.	25-30
2012-2015	Engineering Principles in Biology and Biotechnology	Lecture	B.Sc, M.Sc, Ph.D.	30-40

B. Supervision of Graduate and Undergraduate Students

1. Graduate students

*= Supervision following the last promotion (2015)

Name of Student	Title of Thesis	Degree	Date of Completion / in Progress	Student's Achievement
*Hila Tabibian	The effect of fibers direction on the performance of annulus cells	M.Sc	In progress	
Hanukayev Yuliana	Rheumatoid arthritis (RA) therapeutics methods by micro/nano particles	M.Sc. (with Prof. R. Azhari)	2014	
Alagem Meital	Converging technologies at the interface between natural and artificial bio-systems	M.Sc. (with Prof. N. Lotan, Technion)	2011	Co-authored paper **#14**
Tsitron Eve	Molecular age and turnover of proteoglycans and collagen of the human intervertebral disc	M.Sc. (with Prof. A. Maroudas, Technion)	2006	Co-authored papers **#26, 32, 34**
Langzam-Sinai Ronit	Neutral and ionizable polymeric hydrogels in biomedical engineering	M.Sc. (with Profs. N. Lotan and Y. Lanir, Technion)	2006	
Ne'eman Nitsa	Biological materials in polymeric matrices: multi-functional systems for applications in tissue engineering	M.Sc. (with Prof. N. Lotan, Technion)	2006	Co-authored paper **#19**
Merkher Yulia	The effect of new lubrications on the friction of human cartilage	M.Sc. (with Profs. I. Etsion and A. Maroudas, Technion)	2006	Co-authored papers **#12, 13, 15, 17, 18, 21, 23, 24, 28, 31, 33, 34**
Sheskin Tali	Polymeric systems for ocular drug delivery	M.Sc. (with Prof. N. Lotan and O. Geyer, Technion)	2005	Co-authored paper #**6**

2. Undergraduate students

Name of Student	Title of Final Project	Degree	Date of Completion/in Progress	Student's Achievement
*Simon Chen	Viability of fibroblasts on silk fibers	B.Sc	10/2022	**Co-authored paper** #2
*Lee Ohayon	Pfn1-dependent regulation of phosphoinositide **(PhD graduate, University of Pittsburgh)**	B.Sc.	07/2019	Internship with the University of Pittsburgh
*Nimrod Korda	Development, characterization and translational evaluation of varying FCD NP repairs ***(*MSc graduate, Vanderblit University)**	B.Sc.	10/2018	Joint Internship with Iatridis' group at Icahan School of Medicine, Mount Sinai, NY
*Dar Segev	Ectopic Lymph Node-Mimetic Hydrogel for Cancer Immunotherapy Harvard Medical School - Brigham and Women's Hospital **(MSc graduate, Technion)**	B.Sc.	03/2018	Internship with Artzi's group at Harvard Medical School - Brigham and Women's Hospital
*Noam Zyser	Environmentally-triggered PEG cap for improving checkpoint therapy tumor targeting **(Currently PhD student at the Technion)**	B.Sc.	03/2018	Joint Internship with the Langer's group at MIT
* Ginat Nitzan	Biofilm-inspired encapsulation of probiotics provides protection against antibiotics and a strategy to overcome antimicrobial resistance (MSc graduate, Bar-Ilan University)	B.Sc.	03/2018	**Co-authored paper #11** Joint Internship with the Langer's group at MIT
* Eilon Moran	Molecular modeling of glycosaminoglycan-analogues for	B.Sc.	07/2018	**Co-authored paper** #7 Joint study with Dr.

	intervertebral disc repair			Knani (student's supervisor)
*Sandra Bakoushe	Mechanical evaluation for a cellularized osmo-responsive GAG analogue hydrogel for disc replacement	B.Sc.	3/2018	Joint project with the Iatridis' group at the Ichan School of Medicine, Mount Sinai, NY
*Shani Elgin	Tuning release mechanism of therapeutic molecules from dendrimer –dextran **(Currently MSc student, Tel Aviv University)**	B.Sc.	03/2016	Internship with Artiz's group at Harvard Medical School - Brigham and Women's Hospital
*Daniel Panitz	Assessing the health implications of electronic cigarette refill liquids and vapors on *C. elegans* **(MSc graduate, Haifa University)**	B.Sc.	03/2016	Internship with Nehrke's group at the University of Rochester
*Adar Oren	A novel hydrogel platform for a macrophage-medicated angiogenesis	B.Sc.	03/2016	Internship with the Edelman's group at MIT
* Abu-Khalla Hibba	Copper oxide loaded PLGA nanospheres: toward a multifunctional nanoscale platform for ultrasound-based imaging and therapy	B.Sc.	03/2016	**Co-authored paper #9** Joint study with Dr. Iris Weitz (student's supervisor)
Kramarenko, Dennis	Gel development for orthopaedic tissue	B.Sc.	10/2014	Internship with Artzi's group at Harvard Medical School - Brigham and Women's Hospital
Denisenko, Dima	Controlling microstructure to increase extracellular matrix elaboration in elastomeric scaffold for soft tissue regeneration	B.Sc.	10/2014	Internship with D'Amore's group at the University of Pittsburgh

Kivovich, Ellina	Immobilization of enzyme on metallic surfaces	B.Sc.	10/2014	**Co-authored paper #14**
Seliktar, Shani	Disease affects tissue microenvironment and material performance	B.Sc.	10/2014	Internship with Artiz's group at Harvard Medical School - Brigham and Women's Hospital

PUBLICATIONS

*= Publications following the last promotion (2015)

Indices

Google Scholar

h-index: 23

i-10: 29

Citations: 2401

Scopus

h-index: 21

Citations: 1625

A. Ph.D. Dissertation

Title: Molecular engineering of bioactive materials with predefined specificity: design and synthesis of hemoglobin derivatives. 2000. (Supervised by Prof. Noah Lotan and Prof. Rafael Beyar). Submitted to the Technion - Israel Institute of Technology. (#C38).

B. Scientific Books (refereed)

Authored Books

1. Wilke CN, Urban JPG, Roberts S, Maroudas A, **Sivan S,** Kletsas D, Videman T, Huyghe J. (Wilke AJ. Ed.). (2006). Why do intervertebral discs degenerate? Presentation of the European Research Project EURODISC.

C. Articles in refereed Journals

(Q is the journal quartile and **IF** is the impact factor – both are reported for the year of publication. (Names of students and research assistants involved are underlined)**.**

*1. **Sivan S,** Bonshtein I, Khoury M, Kreinin Y, Korneyev D, Mekler T, Kaiyal S, Weitz I.S, Korin N. Biomimetic glycosaminoglycan-analog hydrogel for improved embolization of aneurysms: Environment-selective Swelling. Accepted for publication in: *Advanced Healthcare Materials* (2025). **DOI:** 10.1002/adhm.202404506. **(Q1, IF-10).**

Contribution: conceptualization, data generation and processing, writing and editing the original draft of the manuscript, consultation and manuscript revision.

*2. Karpuj MV, Shaytov DR, Shemer-Avni Y, Gidon M, Frenkel, ZM, **Sivan S.** Comparative Bioinformatic Analysis Reveals Conserved Regions in SARS-CoV-2 Genome for RAPID Pandemic Response. *International Journal of Molecular Sciences* (2024), 25(11), 5764. (**Q1, IF-4.9**).

Contribution: conceptualization, data processing, methodology, supervision, writing and editing the original draft of the manuscript, consultation and manuscript revision.

*3. Mordechai HS, Ben-Yehuda A, Bonstein I, Simon C, **Sivan S**, Sharabi M. Toward a mechanically biocompatible intervertebral disc: engineering of combined biomimetic annulus fibrosus and nucleus pulposus analogs. *Journal of Biomedical Materials Research Part A* (2023), 111:618–633 (**Q2, IF-3.9).**

Equal contribution (joint ISF).

***4. Adam Biczo, Ferenc Bereczki, Kristóf Koch, Peter Pal Varga, Urban J, Fairbank J, Heywood C, **Sivan S,** Roberts S, Neidlinger-Wilke C, Kaprio J, Battie Michele C, Kletsas D, Ito K, Huyghe J, Brayda-Bruno M, Velikonja Nevenka K, Aron L. Genetic variants of interleukin 1B and 6 are associated with clinical outcome of surgically treated lumbar degenerative disc disease. *BMC Musculoskeletal Disorders* (2022), 23 (1), 774. (**Q2, IF-2.3).**

Equal contribution (outcome of a joint GENODISC multicenter international research collaboration).

***5. **Sivan S**, Bonstein I, Marmor Y.N, Pelled G, Gazit Z, Amit M. Encapsulation of human-bone-marrow-derived mesenchymal stem cells in small alginate beads using one-step emulsification by internal gelation: in vitro, and in vivo evaluation in degenerate intervertebral disc model. *Pharmaceutics* (2022), 14:1179. https://doi.org/10.3390/ pharmaceutics14061179. **(Q1, IF-5.4).**

Contribution: conceptualization, fund raising, project supervision and administration, validation, data processing, visualization, writing the original draft of the manuscript, review and editing.

*6. Weitz IS, Perlman O, Azhari H, **Sivan S.** In vitro evaluation of copper release from MRI-visible, copper-containing PLGA-based nanospheres. *Journal of Materials Science* (2021), 56:718–730. **(Q2, IF-4.7).**

Contribution: conceptualization, data processing, writing the original draft of the manuscript, review and editing.

*7. Sheskin T, Geyer O, Lotan N, **Sivan S**. Controlled and time-scheduled delivery of drugs: Polyanhydride-based nanoparticles as carriers for ocular medication. *Polymers for Advanced Technology* (2021), 32:4851-4859. (**Q2, IF-3.4**).

Contribution: student supervision, data processing, writing the original draft of the manuscript, review and editing.

***8.** Knani D, Eilon M, **Sivan S.** Molecular modeling of glycosaminoglycan-analogues for intervertebral disc repair. *Polymers for Advanced Technology* (2020), 31:2733–2741. **(Q2, IF-3.6).**

Contribution: conceptualization, methodology, data processing, review and editing the manuscript.

*9**.** Benguigui M, Weitz IS, Timaner M, Kan T, Shechter D, Perlman O, **Sivan S**, Raviv Z, Azhari H, Shaked Y. Copper oxide nanoparticles inhibit pancreatic tumor growth primarily by targeting tumor initiating cells. *Scientific Reports* (2019), 9(1):1-10. **(Q1, IF-4.0).**

Contribution: methodology, reviewing the manuscript.

*10. Benguigui M, Weitz IS, Timaner M, Kan T, Shechter D, Perlman O, **Sivan S**, Raviv Z, Azhari H, Shaked Y. Copper oxide nanoparticles inhibit pancreatic tumor growth by targeting tumor initiating cells (TICs). *Clinical and Experimental Metastasis* (2019), 36(2):155. **(Q3, IF-3.0).**

Contribution: methodology, review and editing the manuscript.

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Contribution: methodology, review and editing the manuscript.

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Contribution: student supervision (Ginat N), reviewing the manuscript.

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Submitted papers

41. Structural interface engineering unlocks native-like mechanics in biomimetics intervertebral discs. Mordechai H, Tavakoli J, **Sivan S,** Sharabi M. Under review in: *Nature Biomedical Engineering*. **Equal contribution** (joint ISF).

D. Chapters in Scientific Books

*1. Wachtel E, Maroudas A, **Sivan S.** (Casado-Zapico. Ed.). (2017). Aspartic acid racemization and aging in cartilaginous tissue. In: Mechanisms linking aging, diseases and biological age estimation. CRC Press. pp. 39-53.
Contribution: conceptualization, project supervision and administration, validation, data processing, visualization, writing the original draft of the manuscript, review and editing.

2. **Sivan S**, Lotan N. (2006). Artificial blood. In: Wiley Encyclopedia of Biomedical Engineering (Akay, M. Ed.) pp. 1:130-143.
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E. Conference Proceedings

1. Rougley PJ, Melching L, Mort JS, Pearce RH, **Sivan S**, Maroudas A. The structure, degradation and lifespan of aggrecan in the human intervertebral disc. *European Cells and Materials, ECM VI,* Switzerland, 2005, 10(3):17.
2. Sheskin T, **Sivan S**, Geyer O, Lotan N. Controlled release of local anesthetics from biodegradable and eye-injectable nanoparticles. *XXIV*th *Annual Meeting Israeli Society for Vision and Eye Research.* Israel, 2004, p. 88.
3. **Sivan S**, Lotan N. Modification of hemoglobin with NAD-based molecules: design and synthesis. *Proceedings of the International Journal of Artificial Organs,* Italy, 1998, 21(10):600.

F. Other Scientific Publications

Patents

*1. **Sivan S**, Korin N. Aneurysm treatment using glycosaminoglycans analog hydrogel (2025). US 63/751,284 (pending).
*2. Molinari M, Coussios CC, Gibbons DS, Arora M, Urban JP, **Sivan S**. Intervertebral disc treatment method and apparatus (2016) US Patent 9,408,624.
4. Barenholz C, Nitzan D, Etsion I, Schroeder A, Halperin G, **Sivan S**. Methods for joint lubrication and cartilage wear prevention making use of glycerophospholipids (2014) US Pat 8,895,054.
5. **Sivan S**, Dinnar U, Lotan N. Intravascular apparatus and method. (2003) US Pat 6569688.

G. Innovation and Entrepreneurship

1. *Moebius Medical.* Based on a joint IP (patent #2), *Moebius Medical,* a spin-off company, was established. *Moebius Medical* has recently completed the second FDA-approved clinical trial in Europe and USA followed by the first-in-man clinical study at Hadassah Medical Center, demonstrating its product's (MM-II) fast action onset, efficacy and safety in alleviating pain as compared to hyaluronic acid injection in symptomatic OA sufferers. *Sun Pharma*, the world's fifth largest specialty generic pharmaceutical company and India's top pharmaceutical company, will fund further development of MM-II towards the third phase of clinical trials and undertake its global commercialization.

2. *Super Hemoglobin.* The world's population is expected to increase in number and food consumption. The rationale for developing food substitutes and supplements stems from the potential to reduce the resources required for production as well as their environmental impact on animal farming. Heme proteins are of interest to the food industry, owing to their wide applications, especially as food supplement and iron source. We propose to stabilize hemoglobin, using a novel recombinant technology adapted to the food industry. Specific linkers will be used to connect the subunits, thus allowing for the correct molecular folding and full functionality. Fermentation will be harnessed to produce the proteins' variants in large scale, lower cost, improved efficiency and enhanced sustainability.