

**BIOGRAPHICAL SUMMARY**

NAME Udi Sarig (PhD)	POSITION TITLE Senior Lecturer Head—Laboratory for Advanced Tissue Technologies (LATi-Tech) Vice Head—Department of Medicine Studies Department of Morphological Sciences and Teratology Dr. Miriam and Sheldon G. Adelson School of Medicine  Department of Chemical Engineering and Biotechnology, Faculty of Engineering, Ariel University
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## EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Technion—Israel Institute of Technology (IIT), Israel	BSc	12/06	Biotechnology & Food Engineering
Technion—Israel Institute of Technology (IIT), Israel	MSc	10/09	Stem Cells and Tissue Engineering
Technion—Israel Institute of Technology (IIT), Israel	PhD (Direct track)	05/12	Stem Cells and Tissue Engineering
Nanyang Technological Institute (NTU), Singapore	Postdoctoral training	07/18	Materials Science & Eng. (MSE)

**A. Personal Statement** (Briefly describe how your experience and qualifies you to undertake the role assigned (e.g., PI, researcher, etc.) in the project proposed in the current application).

My research passion focuses on studying and applying developmental biology and embryology principles to the bioengineering of complex multicellular and synthetic models of organogenesis for various biomedical applications. I have 14 years of experience in the fields of stem and progenitor cells, perfusion bioreactor design, and complex solid-organ tissue engineering, yielding over 40 publications in internationally recognized peer-reviewed journals and scientific conferences, and a PCT patent application. Thus, the isolation, characterization, expansion, and guidance of multicellular mammalian (stem) cells self-assembly, and the development and characterization (including biological) of biomaterial scaffolds and bio-inks for 3D bioprinting and tissue engineering—are all well within my past research experience.

**B. Positions and Honors** (List in chronological order previous positions, concluding with the present position. List any honors)Positions

2015-2018	Nanyang Technological University (NTU), Senior Research Fellow and Group Leader, START program, CREATE campus, Singapore.
2018	Health-Tech NTU, Member of advisory strategic planning committee
2018-2019	Research Scientist. Director of Life Sciences & Bioengineering (LSB) Core Facility. Guangdong—Technion Israel Institute of Technology (GTIIT), Shantou, Guangdong Province, China.
2019-2021	Assistant Professor (on tenure track). Guangdong—Technion Israel Institute of Technology (GTIIT), Biotechnology & Food Engineering (BFE), Shantou, Guangdong Province, China.
2018-2019	Academic supervisor for chemical storage and disposal. GTIIT, Shantou, Guangdong, China.
2019	Co-chair. 'Frontiers in Biotechnology & Food Engineering', International academic symposium.
2019-present	Review editor for Frontiers in Bioengineering and Biotechnology—Industrial Biotechnology
2021-present	Senior Lecturer (on tenure track), Department of Morphological Sciences and Teratology, Dr. Miriam and Sheldon G. Adelson School of Medicine (with co-appointment at the faculty of engineering, department of chemical and biotechnology engineering), Ariel University.
2022-present	Vice Head—Department of Medicine Studies, Dr. Miriam and Sheldon G. Adelson School of Medicine, Ariel University

Honors

2006-2007	Technion - Excellent Tutor Award (course 066517)
2007-2010	Technion - Continuous Excellent Tutor Award for three consecutive years
2009-2010	Zeff, Fine and Daniel Award for Excellence in Research.
2020	Innovative and Entrepreneurship Talents Award. Shantou Local Government, 100,000 RMB

**C. Selected Peer-reviewed Publications** (selected peer-reviewed publications 5 most relevant articles are highlighted).

1. **U. Sarig**, M. Machluf. (2011). Engineering cell platforms for myocardial regeneration. *Expert Opin Biol Ther* 11, 1055-1077.
2. **U. Sarig**, E. B. V. Nguyen, Y. Wang, S. Ting, T. Bronshtein, H. Sarig, N. Dahan, M. Gvirtz, S. Reuveny, S. Oh, T. Scheper, F. Y. C. Boey, S. S. Venkatraman, M. Machluf. (2015). Pushing the envelope in tissue engineering: ex vivo production of thick vascularized cardiac constructs. *Tissue Eng Part A* 21(9-10), 1507-1519.
3. **U. Sarig**, H. Sarig, E. de-Berardinis, S. Y. Chaw, E. B. V. Nguyen, V. S. Ramanujam, T. V. Duc, M. Al-Haddawi, S. Liao, D. Seliktar, T. Kofidis, F. Y. C. Boey, S. S. Venkatraman, M. Machluf. (2016). Natural myocardial ECM patch drives cardiac progenitor based restoration even after scarring. *Acta Biomater.* 44, 209-220
4. N. Dahan\*, **U. Sarig\***, T. Bronshtein, L. Baruch, T. Karram, A. Hoffman, M. Machluf. (2017). Dynamic autologous re-endothelialization of small caliber arterial extracellular matrix: A preclinical large animal study. *Tissue Engineering Part A* 23 (1-2), 69-79 (\*) denoted equal contribution
5. A. Tijore, S.A. Irvine, **U. Sarig**, P. Mhaisalkar, V. Baisane, S.Venkatraman. (2018) Contact guidance for cardiac tissue engineering using 3D bioprinted gelatin patterned hydrogel. *Biofabrication*. 10 025003.
6. **U. Sarig**, H. Sarig, A. Gora, M.K. Krishnamoorthi, G. C. T. Au-Yeung, E. de Berardinis, S. Y. Chaw, S. Ramakrishna, F. Y. C. Boey, S. S. Venkatraman, M. Machluf (2018) Biological and mechanical interplay at the Macro- and Microscales Modulates the Cell-Niche Fate. *Scientific Reports* 8 (1) 3937.
7. R.M. do Nascimento\*, **U. Sarig\***, N.C. da Cruz, V.R. de Carvalho, C. Eyssartier, L. Siad, J.F. Ganghoffer, A.C. Hernandez, R. Rahouadj (2019). Optimized-Surface Wettability: A New Experimental 3D Modeling Approach Predicting Favorable Biomaterial–Cell Interactions. *Advanced Theory and Simulations* 2(7): 1900079. (\*) denotes equal contribution.
8. M.K. Krishnamoorthi, **U. Sarig**, L. Baruch, S. Ting, S. Reuveny, S. K.W. Oh, I. Goldfracht, L. Gepstein, S. S. Venkatraman, L.P. Tan, and M. Machluf. (2020) Robust Fabrication of Composite 3D Scaffolds with Tissue-Specific Bioactivity: A Proof of Concept Study. *ACS Applied Bio Materials* 3 (8), 4974-4986.
9. R.M. do Nascimento, J.F. Schmitt, **U. Sarig**, J.E.F.S. Rodrigues, C. Pecharroman, A.P. Ramos, P. Ciancaglini, F.L. Faita, R. Rahouadj, A.C. Hernandez, and I.H. Bechtold. Surface Wettability of a Natural Rubber Composite under Stretching: A Model to Predict Cell Survival. *Langmuir* 37, 15 (2021): 4639-46.
10. M Machluf, **U Sarig**, M Gvirtz, S Venkatraman A bioreactor module, a bioreactor system and methods for thick tissue seeding and cultivation in an hierarchical organization and physiological mimicking conditions. US Patent App. 15/513,907

**D. Research Support** (selected ongoing/completed research projects in the past three years in order of relevance to this application)

This research is not supported elsewhere. Past three years grants which I received are listed below:

- 2020-2023 Li Ka Shing Foundation Research Grant (2020LKSFG02A). 1,700,000 RMB. Lead PI. 'Re-capitulating Development: Engineering Synthetic Morphogenic Circuits (SMC) For Basic and Applied Research'. **Accepted**<sup>#</sup>
- 2020-2023 Li Ka Shing Foundation Research Grant (2020LKSFG03A). Total sum: 700,000 RMB. Co-PI in a team of three PIs on the topic of 'Establishment of innovative strategies for the theranostics of skeletal disorders'. **Accepted**<sup>#</sup>
- 2019-2021 Guangdong Ministry of Education Key Discipline Grant, Biotechnology and Food Engineering Program. Wrote the grant for the program, supervised grant budget allocation and usage and wrote monitoring report for the authorities for the first year. Total sum: 3,748,000 RMB. **Accepted**.
- 2023-2026 Israel Ministry of Science and Technology (MOST, #4628). Lead PI in a team of three PIs on the topic of 'Developing an in vitro endometrium tissue-mimetic platform: A proof of concept for ex vivo murine ectogenesis and human organogenesis'. Total sum: 749,999 NIS. **Accepted**.

(<sup>#</sup>) These funds were not utilized and transferred back to the funding agency as I returned to Israel on account of the COVID-19 pandemic and was not willing to continue working in China.