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|  |  |  הטכניון - מכון טכנולוגי לישראל TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY  |
| הפקולטה להנדסה כימיתע"ש וולפסון |  |  |
| The Wolfson Department of Chemical Engineering |  |  |

**Wolfson Department of Chemical Engineering Seminar**

**Monday, April 8th, 2024 at 13:30**

**Room 1**

**Advancing Protein-Producing Synthetic Cells Towards Therapeutic Applications**

**Shanny Ackerman**

**mid PhD seminar**

Advisor: Prof. Avi Schroeder

Department of Chemical Engineering, Technion-Israel Institute for Technology

Synthetic cells (SCs) are artificial particles designed to mimic living cell functions. Originally developed to explore the origin of life on Earth, these particles also hold great potential for biomedical and therapeutic applications. As autonomous systems tailored to demand, SCs have the potential to replace malfunctioning cells or treat diseases. Despite substantial progress in SC research in recent years, current methods only enable the production of SCs in low volumes, resulting in a lack of homogeneity and standardization within SC populations. These limitations hinder the advancement of the field toward therapeutic applications. Additionally, monitoring the quality of SCs on a large scale presents a challenge. In our current research, we address these challenges by using fluid handling robotics coupled with AI-based image analysis to synthesize therapeutically relevant quantities of SCs.

Refreshments will be served at 13:15.