



Russell Berrie Nanotechnology Institute  
Technion - Israel Institute of Technology



הרצאה סמינריונית

חברי הסגל, סטודנטים והציבור הרחב מוזמנים בזה לסמינר שיינתן ע"י:

## עלאא ג'רה

התוכנית הרב תחומית לננו מדעים וננו טכנולוגיה

עבודת מגיסטר בנושא:

# Monitoring the Release of Volatile Organic Compounds from Single Lung Cancer Cells using Nano-sensors

שתתקיים ביום ד, 28.12.16, בשעה 13:00

באולם מס. 6 בנין הנדסה כימית

כיבוד קל בשעה 12:30

בברכה,

פרופ' ח. שמחה סרבניק

בהנחיית: פרופ' חוסאם חאיק

# Monitoring the Release of Volatile Organic Compounds from Single Lung Cancer Cells using Nano-sensors

Gharra A'laa

Supervisor: Prof. Haick Hossam

A new trend for early detection of cancer is based on volatile organic compounds (VOCs) that are emitted from the cancer cells. However, the source of these VOCs still unknown, though few hypotheses are emerging to explain their sources. In this research, I investigate the release of VOCs from three epithelial non-small lung cancer cell lines with different P53 status: Wild type, Null and mutated P53. Comparing the VOCs released from different samples e.g. medium, multi-cells and single cell samples, using Gas Chromatography linked with Mass Spectrometer (GC-MS) a unique VOCs signature was found linked with each molecular genetics. Specific VOCs show indications for intrinsic production via the cancer cell while others indicate a relation between the VOCs and the microenvironment / metabolism of the cancer cell. Array of nanoparticle-based sensors also revealed these unique signatures, implying the possibility of providing tailored diagnosis via VOCs.