



School of Nano Science (IPM)



Condensed Matter & Statistical
Physics Group (IPM)

Weekly Webinar

Effect of cell-like topography on drug susceptibility of breast cancer cells to doxorubicin

Speaker: **Dr. Fatemeh Shahriyari**

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This study demonstrates the effect of substrate's geometrical cues on viability and the efficacy of an anti-cancer drug, doxorubicin (DOX), on breast cancer cells. It is hypothesized that the surface topographical properties can mediate the cellular drug intake. Pseudo-three dimensional (3D) platforms were fabricated using imprinting technique from polydimethylsiloxane (PDMS) and gelatin methacryloyl (GelMA) hydrogel to recapitulate topography of cells' membranes. The cells exhibited higher viability on the cell- imprinted platforms for both PDMS and GelMA materials compared to the plain/flat counterparts. The DOX response of cells was monitored for 24 h. Although imprinted substrates demonstrated enhanced biocompatibility, the cultured cells were more susceptible to the drug compared to the plain substrates. The results support that cell membrane curvature developed by multiscale topography is able to mediate intracellular signaling and drug intake.

Wednesday, 10 March 2021 (۲۰ اسفند ۱۳۹۹), 14:00-15:00

Virtual Meeting Room (please log in as a guest):

<https://www.skyroom.online/ch/schoolofnanoscience/weeklyseminars>

