בס"ד

המחלקה לכימיה
הפקולטה למדעים מדויקים
אוניברסיטת בר־אילן

The Department of Chemistry invites all its students and academic staff to the weekly colloquium lecture

Wednesday 19.5.21, 11:00 a.m.

Advances in Perovskite Chemistry and Nanomaterials for Optoelectronic Applications

by

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Metal halide perovskites possess excellent properties for solar cells and light emitting devices (LEDs), having very bright emission, high photoluminescence quantum yield, a thin emission linewidth and a composition and size tunable color range across the visible spectrum. Already solar cells with high PCE >21 % using methylammonium lead iodide in n-i-p style devices have been reported in what has become a massive field of study. However, many niche devices such as all-solution processed, high Voc, semi-transparent, p-i-n and quantum dot-based perovskite solar cells are less well developed. Similarly, perovskite LEDs with >20% EQE have been reported for red and green emitting LEDs, but blue emitting devices have lagged behind and must be improved in both efficiency and lifetime. To improve the stability and emission of LEDs, lead-free and other novel perovskite (or "perovskite-inspired") materials are being developed that could point towards the future of the perovskite field. Here we will outline our recent improvements in nanomaterials engineering and chemical synthesis to improve the performance of perovskite based optoelectronic devices, in particular LEDs and solar cells. We will also discuss some of the novel materials designed in our group and suggest some of the future applications for this fascinating class of materials.

The lecture will be held on zoom: https://us02web.zoom.us/j/6529999452

Looking forward to seeing you!