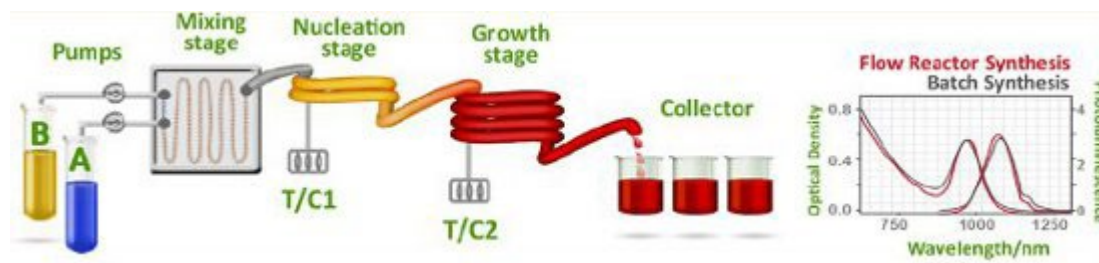


Publication 33: Automated Flow-Through Synthesis of Photovoltaic Quality Colloidal PbS Quantum Dots



Superior high quality PbS nanocrystals were obtained using a dual-temperature-stage nucleation/growth flow continuous flow-through process that exhibited high photoluminescence quantum yield (50%) and narrow full width-half-maximum.

The PbS CQDs could be used to fabricate solar cells having performance similar to that of comparable batch-synthesized nanoparticles.

The flow reactor approach, with its versatility and ability to rapidly screen multiple parameters, offers an attractive path to the automated and scalable synthesis of CQDs for photovoltaics and, more broadly, active optoelectronics.

[J. Pan, A. O. El-Ballouli, L. Rollny, O. Voznyy, V. M. Burlakov, A. Goriely, E. H. Sargent, O. M. Bakr, ACS Nano, 2013, DOI: 10.1021/nn404397d](#)