

# ALLISON GREEN

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## EDUCATION

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### University of Texas at Austin, Cockrell School of Engineering

*Doctor of Philosophy, Chemical Engineering*

(Expected 2024)

Advisors: Professors Delia J. Milliron and Thomas M. Truskett

### University of California, Berkeley, College of Chemistry

*Bachelor of Science (Cum Laude), Chemical Engineering*

May 2019

## RESEARCH AND INDUSTRY EXPERIENCE

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### University of Texas at Austin, McKetta Department of Chemical Engineering

10/2019 – present

*Graduate Student Researcher (Advisors: Prof. Delia J. Milliron and Thomas M. Truskett)*

- Investigating the dynamics and reconfigurability of nanocrystal networks assembled via depletion attractions towards the design of responsive, smart materials
- Studying the influence of polymer-wrapping nanocrystal surfaces on their depletion-driven phase behavior with polymer depletants

### Edwards Lifesciences *Critical Care Discovery, Engineering Intern*

6/2019 – 8/2019

- Developed experimental cardiac flow models to design and validate new medical device sensor technology

### University of California, Berkeley, Department of Chemical Engineering

1/2018 – 12/2018

*Undergraduate Student Researcher (Advisor: Prof. Wenjun Zhang)*

- Researched genetic tools for *Clostridium roseum*, with the goal of discovering new bioactive molecules

### Cuberg *Battery Research and Development Intern*

5/2018 – 12/2018

- Researched the development of safer, high energy density lithium metal batteries
- Developed a protocol for pouch cell fabrication and investigated how different electrolyte components affect cycling performance at high voltages

### Merck *Analytical Research and Development Intern*

5/2017 – 8/2017

- Developed a rapid pH and high temperature flow chemistry treatment method which enabled an easy, high throughput optimization of peptide stability conditions using HPLC and fluorescent fibrillation curves
- Work presented at the 5<sup>th</sup> Annual Peptides Congress in London and the 2017 Eastern Analytical Symposium and Exhibition

### Berkeley Advanced Manufacturing for Energy Lab

9/2016 – 5/2018

*Undergraduate Student Researcher (Advisors: Prof. Paul Wright and James Evans)*

- Researched rechargeable Zn-MnO<sub>2</sub> batteries using an ionic liquid gel polymer electrolyte and printed electrode inks
- Quantified the effect of drying parameters and electrolyte casting thickness and the effect of the active material to binder ratio on printed ink conductivity

### Tel Aviv University Center for Nanoscience and Nanotechnology

6/2016 – 8/2016

*Undergraduate Student Researcher (Advisor: Prof. Shachar Richter)*

- Researched the binding of neutral red dye to bovine serum albumin using fluorescence and HPLC measurements to assess the efficiency of the dye for use in organic light emitting diodes, specifically in the production of white light

## PUBLICATIONS

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- Green, A.M., Ofosu, C.K., Kang, J., Anslyn, E.V., Truskett, T.M., and Milliron, D.J. Assembling Inorganic Nanocrystal Gels. *Nano Lett.*, 2022, 22, 4, 1457-1466.

- Sherman, Z.M., **Green, A.M.**, Howard, M.P., Anslyn, E.V., Truskett, T.M., and Milliron, D.J. Colloidal Nanocrystal Gels from Thermodynamic Principles. *Acc. Chem. Res.*, 2021, 54, 798-807.
- Clarke, J., Cavanna, F., Crowell, A.D., Houser, J.R., Graham, K., **Green, A.**, Stachowiak, J.C., Truskett, T.M., Milliron, D.J., Rosales, A.M., and Alvarado, J. Depletion-Driven Morphological Control of Bundled Actin Networks. <https://doi.org/10.48550/arXiv.2205.01864>.
- Graham, A.J.\*, Gibbs, S.L.\*, Saez Cabezas, C.A.\*, Wang, Y., **Green, A.M.**, Milliron, D.J., and Keitz, B.K. In Situ Optical Quantification of Extracellular Electron Transfer using Plasmonic Metal Oxide Nanocrystals. *ChemElectroChem*, 2022, 9, e202101423.
- Saez Cabezas, C.A., Sherman, Z.M., Howard, M.P., Dominguez, M.N., Cho, S.H., Ong, G.K., **Green, A.M.**, Truskett, T.M., and Milliron, D.J. Universal Gelation of Metal Oxide Nanocrystals via Depletion Attractions. *Nano Lett.*, 2020, 20, 5, 4007-4013.
- Li, J.S., Du, Y., Gu, D., Cai, W., **Green, A.**, Ng, S., Leung, A., Del Rio Flores, A. and Zhang, W. Discovery and biosynthesis of clostyrylpyrones from the obligate anaerobe *Clostridium roseum*. *Org. Lett.*, 2020, 22, 21, 8204-8209.

## MENTORSHIP AND INVOLVEMENT

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**Undergraduate Students:** *Juliusz Michalski* (2021-2022)

**MRSEC Student Leadership Council:** *President* (2021-22), *Social Chair* (2020-21) 8/2020 – 8/2022

**Chemical Engineering Graduate Recruitment Chair** 9/2020 – 4/2021

**First ChEnnections Mentor** 7/2020 – 5/2021

**Engineering Student Council** 8/2016 – 5/2019

**American Institute of Chemical Engineers:** *Social Chair* (2017-18) 8/2016 – 5/2019

## TEACHING

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**Energy, Technology, and Policy Teaching Assistant (ChE 359)** Fall 2020

**Chemical Engineering Materials Teaching Assistant (ChE 350)** Spring 2020

## RESEARCH SKILLS

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Colloidal nanocrystal synthesis and characterization, nanocrystal assembly formation, battery (coin cell and pouch cell) assembly, UV/Vis Spectroscopy, IR Spectroscopy, Fluorescence Spectroscopy, High Performance Liquid Chromatography, Small Angle X-ray Scattering, Dynamic Light Scattering and Zeta Potential, Scanning Transmission Electron Microscopy, Glovebox use, Cyclic Voltammetry, Battery cycle life testing, Peptide stability treatment

## PRESENTATIONS

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- Green, A.M, Truskett, T.M., Milliron, D.J. “Influence of Surface Functionalization on the Assembly of Nanocrystals with Depletion Attractions”, Poster Presentation, American Chemical Society Spring Meeting, San Diego, CA. Mar. 2022.
- Green, A.M, Truskett, T.M., Milliron, D.J. “Influence of Surface Functionalization on the Assembly of Nanocrystal Gels with Depletion Attractions”, Poster Presentation, NSF MRSEC Annual Meeting, UT Austin, Feb. 2022.
- Green, A.M, Ofosu, C.K., Sherman, Z.M., Truskett, T.M., Milliron, D.J. “Design and Assembly of Nanocrystal Gels via Depletion Attractions”, Poster Presentation, NSF MRSEC Annual Meeting, UT Austin, May 2021.
- Green, A.M, Luo, H., Levesque, F., Xiang, B. “Reduce Peptide Fibrillation Risk by Flow Chemistry”, Poster Presentation, Merck, New Jersey, July 2017.
- Green, A., Beilis, E., Richter, S. “Dye Doped Bovine Serum Albumin Complexes Towards Tunable Bio-Organic Light-Emitting Layers”, Poster Presentation, Tel Aviv University, August 2016.