

# Vikram S. Lakhanpal

Ph. D. Candidate, University of Texas at Austin      Email: [vlakhanpal@utexas.edu](mailto:vlakhanpal@utexas.edu)

## Education

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**University of Texas at Austin** Fall 2017 – Present  
PhD Candidate, Chemical Engineering  
Expected Graduation: Summer 2022

**University of Kansas** Fall 2013 – Spring 2017  
B.S. in Engineering Physics

## Research Experience

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*Milliron Research Group* University of Texas  
Advisor: Prof. Delia Milliron Fall 2017 – Present

- Incorporating metal oxide nanocrystals (NCs) into PEDOT:PSS films to develop transparent conductive films
- Quantifying surface hydroxyls on cerium oxide NCs using spectroscopic methods
- Investigating proton conductivity in cerium oxide NC/poly(ethylene oxide) thin films

*Nguyen Research Group* University of Kansas  
Advisor: Prof. Trung van Nguyen Fall 2015-Spring 2017

- Investigation of viability of carbon felt electrodes in reversible flow battery
- Effects of proton exchange membrane casting and thickness on performance in H<sub>2</sub>-Vanadium flow batteries

## Leadership

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**University of Texas**  
*Milliron Research Group*

Safety officer September 2020 – Present

- Lead weekly discussion in group meetings of best safety practices and recent incidents. Communicate with EHS regarding safety inspections and hazardous waste removal. Arrange plans with Lab Move officer and EHS for moving lab to new facilities (expected move January 2022).

Equipment manager (Various) January 2018 – Present

- Manage various lab equipment including Ion Transport Measurement stage, Hall Effect Measurement Probe, and Spincoater. Train users on equipment and developed SOPs for equipment for future reference. Maintain and troubleshoot problems with equipment.

*Center for Dynamic Control of Materials*

President, Student Leadership Council July 2019 – June 2020

- Ran meetings with SLC to plan for career development, educational outreach, and social events. Delegated responsibilities to other SLC members. Coordinated with CDCM administrative staff to ensure smooth operation of events.

Social Chair, Student Leadership Council January 2018 – July 2019

- Organized social events with co-chair for graduate students in CDCM. Managed CDCM social media accounts, sharing news and publications

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## University of Kansas

President, Electrochemical Society of KU      March 2016 – May 2017

- Collaborated with board members to develop activities and meeting plans. Maintained contact with National Organization to enhance Chapter credibility

Secretary, Tau Beta Pi, Kansas Alpha Chapter      June 2016 – May 2017

- Recorded meeting minutes for weekly distribution. Maintained roster of active members and other vital documents for future perusal.

Department Representative, Engineering Student Council      January 2015 – May 2017  
Funding Advisory Committee

- Approved requests for funds from engineering student groups. Teamed with other Representatives to allocate funds (up to \$6,000 total) for student groups.

## Teaching/Mentoring Experience

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### Teaching Assistant

Graduate Materials Physics (upcoming), **University of Texas**      Fall 2021

Undergraduate Heat Transfer, **University of Kansas**      Spring 2017

Undergraduate Physics I, **University of Kansas**      Summer 2016

### Undergraduate Research Mentor

*Milliron Research Group*

Bailey Rhodes – Ligand stripping and polymer wrapping of NCs      Summer 2019

## Awards and Fellowships

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National Science Foundation Graduate Research Fellow      2018-2021

William H. Cunningham Endowed Graduate Fellowship in Engineering      2017-2021

KU Man of Merit      2017

Outstanding Senior in Engineering Physics      2017

Outstanding Undergraduate Research in Chemical and Petroleum Engineering      2017

## Publications

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- H.C. Lu, S. Ghosh, N. Katyal, [V.S. Lakhanpal](#), I.R. Gearba-Dolocan, G. Henkelman, D.J. Milliron. “Synthesis and Dual-Mode Electrochromism of Anisotropic Monoclinic Nb<sub>12</sub>O<sub>29</sub> Colloidal Nanoplatelets” *ACS Nano*. **2020** *14*, (8), 10068–10082.
- K.M. Tenny\*, [V.S. Lakhanpal](#)\*, R.P. Dowd Jr., V. Yarlagadda, T.V. Nguyen. “Impact of Multi-Walled Nanotube Fabrication on Carbon Cloth Electrodes for Hydrogen-Vanadium Reversible Fuel Cells” *J. Electrochem. Soc.* **2017** *164*, (12), A2534-A2538.
- R.P. Dowd Jr., [V.S. Lakhanpal](#), T.V. Nguyen. “Performance Evaluation of a Hydrogen-Vanadium Reversible Fuel Cell” *J. Electrochem. Soc.* **2017** *164* (6), F564-F567.

*\*authors contributed equally*

## Skills and Expertise

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Characterization: Dynamic Light Scattering (DLS), Scanning Tunneling Electron Microscopy (STEM)

Spectroscopy: Fourier-Transform Infrared (FTIR), UV-Visible, Raman, Electrochemical Impedance (EIS)

Equipment: Glovebox, Schlenk line, Spincoater, Radio Frequency (RF) and E-beam Sputtering

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Software: Igor, CasaXPS

Techniques: Colloidal NC synthesis, Ligand stripping,

## **Conferences/Presentations**

- V.S. Lakhanpal, G.K. Ong, D.J. Milliron. “Proton Conductivity in Nanocomposite Films” *MRSEC Annual Meeting*, Fall 2020. Poster.
- V.S. Lakhanpal, K.M. Tenny, T.V. Nguyen. “Catalyzed Deposition of CNTs on Carbon Felt for Flow Batteries and Fuel Cells” *AICHE Annual Meeting*, Fall 2016. Poster.

## **Extracurricular Activities:**

Contributor, *Film Score Monthly Online Magazine*

March 2017 – Present

26 soundtrack reviews, 13 editorial features, 7 cover stories, 2 interviews

Selected works:

- “Tyler, Tyler, Burning Bright.” Interview with Brian Tyler. Cover story, May 2021.
- “Politics and the American Film Score.” Cover Story, November 2020.
- “The Top 12 Scores by Hans Zimmer.” Cover Story, February 2019. Co-written with Erik Heine.
- “Back Again: A Retrospective on the *Hobbit* Scores.” Cover Story, August 2018.