Leo Gordon

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LinkedIn | Personal Website | GitHub

EDUCATION

THE CITY COLLEGE OF NEW YORK (CCNY) | PhD, Chemical Engineering
Expected Graduation 2023 | New York, NY

THE CITY COLLEGE OF NEW YORK (CCNY) | MPhil, Chemical Engineering
Graduated January 2021 | New York, NY • Cum. GPA: 3.70

UNIVERSITY OF EDINBURGH | MChem, Chemistry
Graduated July 2017 | Edinburgh, U.K.

CURRENT RESEARCH

MESSINGER LAB | PhD Student
CCNY | November 2018 – Present | New York, NY

- Working in collaboration with the John Lab (Department of Chemistry, CCNY) to implement novel organic molecules as electrode materials in rechargeable aluminum batteries. The primary aim is to develop a molecular level understanding of the charge storage mechanisms involved primarily using solid-state NMR, alongside other characterization techniques such as XRD.
- Determination of $LiPF_6$ carbonate electrolyte with and without additives via NMR. The additive improves rechargeable lithium metal battery performance and cycle life.
- Initial investigation has been done into the interphase layer on aluminum metal anodes to enable their use in aqueous electrolyte systems.

RESEARCH EXPERIENCE

BIDDINGER LAB | Summer Researcher
CCNY | Summer 2018 | New York, NY

- Performed preliminary study of surface enhanced FTIR analysis usage for ***in situ, operando*** investigation of reaction intermediates in electrochemical bio-oil upgrading
- Responsible for equipment such as GC-MS and FTIR spectrometer

KAMPOURIS LAB | Masters Research
University of Edinburgh | September 2016 - April 2017 | Edinburgh, U.K.

- Masters thesis entitled ”An Investigation into the Effects of Pairing Working Electrodes and Reference Electrodes in a Screen-Printed Multimicroelectrode Array”
- Investigated the design of microelectrode arrays, in particular the impact of reference electrode positioning
- Employed the screen-printing technique to produce stacked, one-dimensional microelectrode arrays of working electrodes and coupled reference electrodes
- Worked extensively in the clean-room environment within the Scottish Microelectronics Centre

LUSBY LAB | Honors Research
University of Edinburgh | Spring 2016 | Edinburgh, U.K.

- Performed synthetic development and characterization of prototypical tethered molecular cage systems for the encapsulation of reactants and prolonged analysis

ROBERTSON LAB | Honors Research
University of Edinburgh | Fall 2015 | Edinburgh, U.K.

- Developed dye-sensitized solar cell devices using anthrocyanin dyes, and a non-corrosive redox couple

LEADERSHIP & WORK EXPERIENCE

TREASURER | ECS Student Chapter
ECS | 2021-present | New York, NY

- Key leadership position organizing and running events pertaining to electrochemistry

EXECUTIVE COMMITTEE - TREASURER | Graduate Student Council
CCNY | Academic Year 2019-2020 | New York, NY

- Created budgets to fund all graduate clubs on campus, and host a graduate student symposium
- Held office hours to meet with graduate students and address concerns
- Reworked all budgeting to match the new financial conditions brought by the COVID-19 pandemic

TEACHING ASSISTANT FOR THERMODYNAMICS I & II | Department of Chemical Engineering
CCNY | Spring 2020-present | New York, NY

- Delivered lectures to classes and performed weekly recitations to class of 75 people
- Addressed concerns and questions of the class through individual emails and Zoom calls
- Reevaluted teaching approach due to the COVID-19 pandemic, utilizing virtual media

TECHNICAL SPECIALIST | Genius Bar
Apple Inc. | 2014-2017 | Edinburgh, U.K.

- Troubleshooted customer issues and performed device repairs
- Aligned with customers, establishing mutual empathy to de-escalate situations

AWARDS AND SCHOLARSHIPS

ACRIVOS FELLOWSHIP
CCNY | Academic Year 2018-2019 | New York, NY

GROVE SCHOOL OF ENGINEERING FELLOWSHIP
CCNY | Academic Year 2020-2021 | New York, NY

LANGUAGES

SPOKEN & WRITTEN
Native proficiency :
English
Intermediate proficiency:
German

PROGRAMMING
High Proficiency:
Matlab
Basic Proficiency:
Python

REFERENCES

PROF. ROBERT J. MESSINGER
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Steinman Hall, Room 327,
160 Convent Ave.
New York,
NY,
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DR. DIMITRIOS KAMPOURIS
University of Edinburgh
Joseph Black Building, Room 109,
David Brewster Road,
Edinburgh,
Midlothian,
EH9 3FJ
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CONFERENCE PROCEEDINGS

AMERICAN INSTITUTE FOR CHEMICAL ENGINEERS (AICHE) CONFERENCE | November 2021
"Charge Storage Mechanisms of Quinone- & Flavin-Type Organic Electrodes for Rechargeable Aluminum Batteries Elucidated with Molecular-level Specificity," AIChE Annual Meeting, 7-12 Nov. 2021, Boston, MA. [Oral]

ELECTROCHEMICAL SOCIETY (ECS) MEETING | October 2021
"Electrochemical Complexation of Polyatomic Aluminum Cations in Quinone-type Organic Battery Electrodes Revealed by Solid-state NMR," Electrochemical Society (ECS) Meeting, 10-14 Oct. 2020, Virtual. [Poster]

EXPERIMENTAL NUCLEAR MAGNETIC RESONANCE (ENC) CONFERENCE | March 2021
"Molecular-level Insights into the Charge Storage Mechanisms of Rechargeable Aluminum-Indanthrone Quinone Batteries Revealed by Solid-state NMR Spectroscopy," Experimental Nuclear Magnetic Resonance Conference (ENC), 29-31 March 2021, Virtual. [Poster]

BATTERY & ENERGY STORAGE (BES) WORKSHOP | October 2020
"Molecular-level Investigation into the Charge-storage Mechanisms of Rechargeable Aluminum-organic Batteries," Battery and Energy Storage (BES) Workshop, 21-23 October 2020, Virtual. [Poster]

ELECTROCHEMICAL SOCIETY (ECS) MEETING | October 2020
"Molecular-Scale Understanding of Charge Storage Mechanisms in Organic Positive Electrode Materials for Rechargeable Aluminum Batteries," Electrochemical Society (ECS) Meeting, 4-9 October, 2020, Virtual. [Poster]

BATTERY & ENERGY STORAGE (BES) WORKSHOP | October 2019
"Rechargeable Aluminum Batteries Using Organic Cathode Materials with High Cycle Life and Capacity," Battery and Energy Storage (BES) Workshop, 21-22 October, 2019, New York, NY, USA. [Poster]