

Timofey Averianov

PhD Student, Drexel University
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Education



Drexel University 2020-Present
PhD Student, Materials Science and Engineering
Advisor: Dr. Ekaterina Pomerantseva
Thesis: N/A

Drexel University 2015-2020
B.S./M.S. in Electrical Engineering
M.S. Advisor: Dr. Gennady Friedman and Dr. Ekaterina Pomerantseva
M.S. Thesis: *"Improvement of Electron Transport in Cathodes via Integration of Nanostructured Carbons with Layered Oxides for High Power Li-Ion Batteries"*

Research Experience

Graduate Research Assistant 2020-Present
Drexel University, Materials Science and Engineering
Philadelphia, PA

- Synthesized bilayered vanadium oxide materials using sol-gel and hydrothermal approaches
- Performed chemical modification of carbon nanotubes and graphene nanoplatelets using acid treatments and isothermal oxidation
- Determined material properties through the use of physical, electronic, and electrochemical characterization techniques

Undergraduate Research Assistant 2019-Present
Drexel University, Chemical and Biological Engineering
Philadelphia, PA

- Collaborated with undergraduate, graduate, and postdoctoral members of the Alvarez Research group to develop a fiber spinning apparatus
- Designed the electrical and electronics subsystem that controls several key variables for melt-spinning assorted petroleum pitch fibers
- Presented weekly reports on the development of the apparatus and the subsequently produced pitch fibers

Undergraduate STAR Research Assistant Summer 2016
Drexel University, Materials Science and Engineering
Philadelphia, PA

- Developed a testing method for studying piezoelectric properties of a Ti_3C_2 /PVA capacitor system
- Presented research results at the STAR student symposium

Industrial Experience

Princeton Technology Group
Junior Electrical Engineer Intern
Southampton, PA

April 2018 – September 2018

- Implemented automated testing procedures interfaced to MATLAB to determine level of focus of camera systems
- Presented testing methods to clients as part of the support process

Honors and Awards

Drexel University

- **A. J. Drexel Academic Scholarship**
2015-2020
- **Drexel Performing Arts Scholarship**
2016-2017
Awarded for participation in Drexel's Jazz Orchestra

Mentorship Experience

- **Raymond Zhang**
Summer 2020 – Present, BS/MS Student
"No Title Yet"
rz322@drexel.edu

Technical Skills

Synthesis/Sample Preparation

- Proficient utilizing hydrothermal, solid-state, and wet chemical synthesis techniques
- Experience in battery electrode preparation
- Experience assembling 2-electrode coin cells in half-cell configuration for electrochemical testing

Characterization

- Proficient in scanning electron microscopy, energy-dispersive x-ray spectroscopy, powder x-ray diffraction, and thermogravimetric analysis
- Proficient in electrochemical analysis techniques including: galvanostatic cycling, rate capability, cyclic voltammetry, electrochemical impedance spectroscopy
- Experience using Arbin Battery Testing Station

Electronics

- Proficient using electronics equipment including programmable power supply, multimeter, oscilloscope, waveform generator
- Proficient using assembly equipment including soldering iron, hot-air rework station

Programming

- Proficient using MATLAB, Python, Arduino IDE, LabView
- Experience using Java, C#

Software

- Proficient using Solidworks, OriginLab, Microsoft Office Suite (Word, Excel, PowerPoint)
- Experience using AutoCAD, Fusion 360, Advanced Design System

Manufacturing

- Proficient using fused deposition modeling (FDM), stereolithography (SLA), band saw, drill press, mill lathe, laser engraver, CNC mill

Languages

- Proficient: English
- Conversational: Russian