

Ryan Wong

Atlanta, Georgia • rnt.wong@gatech.edu • (407) 970 - 2227

EXPERIENCE

Graduate Research Assistant, Atlanta, Georgia

January 2019 – Present

- Worked under Professor Madhavan Swaminathan in his 3D Systems Packaging Research Center
- Conducted research on electromagnetic interference shielding and thermal management in packages
- Designed and fabricated test vehicles to demonstrate the effectiveness of various shield structures
- Ran simulations for the analysis of signal integrity and characterization of crosstalk
- Built thermomechanical models for glass panel embedded packages
- Supported research for Honeywell as part of their radar consortium
- Assisted in the development of a multiphysics optimization framework with active machine learning
- Supported research for Toyota in design and optimization of power modules
- Characterized novel materials to benchmark their mechanical, thermal, and electrical properties
- Supported research for Bosch in material development and innovation of graphene and their composites

Project Consultant, Atlanta, Georgia

January 2019 – May 2019

- Worked under Dr. Dimitris Priftis from the Paints and Coatings Group at Boeing
- Conducted research on organic coatings for aerospace applications
- Developed a novel test method to measure coating hardness and scratch resistance

Undergraduate Research Assistant, Atlanta, Georgia

August 2016 – May 2018

- Worked under Professor Seung Soon Jang in his Computational NanoBio Laboratory
- Learned computational methods with molecular mechanics and dynamics, and density functional theory
- Conducted research on novel electrode materials for applications in batteries
- Lead teams to investigate the general electrochemical characteristics of DNA
- Built molecular models via computer-aided design and geometric optimization
- Ran simulations based on density functional theory to calculate potential voltages
- Applied regression analysis to elucidate the relationship between redox potentials and properties
- Trained new teams on software usage by leading practice sessions
- Presented a poster at the American Physical Society March Meeting 2018
- Earned the Outstanding Presentation Award for notable accomplishments and research presentation
- Received the President's Undergraduate Research Award to fund involvement in research

EDUCATION

Georgia Institute of Technology, Atlanta, Georgia

August 2019 – Present

- Candidate for Master of Science in Materials Science and Engineering

Georgia Institute of Technology, Atlanta, Georgia

August 2015 – May 2019

- Bachelor of Science in Materials Science and Engineering with Highest Honors

COURSEWORK

MSE 3015 Electrical, Optical, and Magnetic Properties of Materials / ECE 3710 Circuits and Electronics / MSE 4022 Materials Laboratory II

- **Concepts** Circuits / Electronics / Optics / Electromagnetism / Microscopy / Crystallography / Spectroscopy
- **Skills** Circuit Design and Analysis / Sample Preparation / Optical Microscopy / Scanning Electron Microscopy / X-Ray Diffraction

MSE 3002 Structural Transformations in Metallic and Ceramic Materials / MSE 4006 Processing and Applications of Engineering Alloys

- **Concepts** Engineering Alloys / Alloy Chemistry / Phase Transformations / Thermo-Mechanical Processing
- **Skills** Metallurgy / Phase Diagrams / Time-Temperature-Transformation Diagrams

COE 3001 Mechanics of Deformable Bodies / MSE 3005 Mechanical Behavior of Materials / MSE 4010 Environmental Degradation of Materials

- **Concepts** Engineering Mechanics / Deformation / Creep / Fatigue / Failure / Corrosion
- **Skills** Structural Analysis / Corrosion Analysis / Pourbaix Diagrams / Evans Diagrams / Ellingham Diagrams

MSE 4754 Electronic Packaging Assembly / MSE 4755 Electronic Packaging Substrate Fabrication

- **Concepts** Photolithography / Via Formation / Metallization / Interconnection / Reliability and Failure Analysis
- **Skills** Vacuum Lamination / Maskless Alignment / Laser Ablation / Physical and Chemical Deposition / Electroplating

PROFICIENCIES

Languages

- **Wenzhouese** Functionally Native Proficiency / **English** Native or Bilingual Proficiency / **Spanish** General Professional Proficiency / **Cantonese** Limited Working Proficiency / **Mandarin** Limited Working Proficiency

Applications

- **ANSYS Suite** General Proficiency / **AutoCAD** Advanced Proficiency / **MATLAB** Advanced Proficiency / **Adobe Creative Suite** Adobe Certified Expert / **SolidWorks** General Proficiency