SAURABH ACHARYA

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Education

PhD Electrical Engineering (Expected: Dec 2020)
University of Michigan – Ann Arbor, MI, USA
Primary Area: Solid State Electronics
Advisors: Prof. Maldonado & Prof. Phillips
Overall GPA: 4.00

B.E. Electronics Engineering May 2015
Sardar Patel Institute of Technology,
University of Mumbai, India
Overall Percentage: 78.3%

Related Experiences

Graduate Research

Room Temperature Growth of Semiconductor Materials using ec-LLS May 2016 - present
University of Michigan, Advisors: Prof. Maldonado

- Studying the low temperature growth of group IV semiconductor nanowires, microwires and thin-films using electrochemical Liquid-Liquid-Solid (ec-LLS) method.
- Electrically and optically characterizing Ge nano/microwires prepared using the ec-LLS process.

Theoretical and Experimental Studies on Semiconductor/Liquid Interfaces January 2017 - present
University of Michigan, Advisors: Prof. Maldonado

- Simulating and fabricating semiconductor ultra-micro electrodes (UME) to obtain precise measurements of heterogeneous electron transfer rates at the semiconductor/liquid junction.

V_2O_5 as Internal Charge Transport Layer in amorphous Si TFTs August 2015 – April 2016
University of Michigan, Advisor: Prof. L. Jay Guo

- Explored the various charge transport and trapping mechanisms that occur at the metal/V_2O_5/a-Si interface in order to realize a novel a-Si thin film transistor structure.

Industry/Internship

Philips Automotive Lighting (Lumileds) - Intern June - August 2016

- Coordinated the fabrication of prototypes, planned and conducted tests to verify the key design performance characteristics of LEDs, LED Drivers and concept light engines.

Teaching

Graduate Student Instructor – EECS 216: Introduction to Signals and Systems
Semesters: Winter 2016, Fall 2016, Winter 2017

- Conducted laboratory and discussion sessions to help students to connect and apply the concepts learned from lectures.

Under-Graduate Research

Low-Cost Portable EEG module for Primary Healthcare Centers May 2014 - April 2015
B.E. Project, Dept of Electronics Engineering, Sardar Patel Institute of Technology, India

- Developed the data acquisition system of the EEG module that was used to detect the low amplitude electrical signals (of the order of a few μV) from the brain. Awarded the TCS Best Student Project for 2014-15.

Determination of Minority Carrier Lifetime of Solar Cells June - August 2014
Summer Research Fellow, EE Department, IIT-Bombay, India

- Designed the compensating circuit that could overcome the nonlinearities that are inherent in solar cells. We observed the differential of the compensated OCVD and were successful in determining the limits of the minority carrier lifetimes of a variety of solar cells.

Professional Skills

Programming: VHDL, Verilog

Tools: MATLAB**,** Silvaco (Athena), Sentaurus Process, COMSOL Multiplysics, Xilinx ISE, ModelSim, PSPICE, Arduino

Research Presentations

Oral Presentations

- 59th Electronics Materials Conference, South Bend 2017
  Characterization of Self-Doping in Ge Micro and Nanowires Grown by ec-LLS

Poster Presentations

- 41st Annual Symposium of the AVS Michigan Chapter 2017
- 2nd Annual Materials Research Symposium of the Materials Science and Engineering Dept, University of Michigan 2017
- 12th Annual Engineering Graduate Symposium of the College of Engineering, University of Michigan 2017

Publications

1. DeMuth, J.; Ma, L.; Lancaster, M.; Acharya, S.; Cheek, Q.; and Maldonado, S. "Eutectic-Bismuth Indium as a Growth Solvent for the Electrochemical Liquid-Liquid-Solid Deposition of Germanium Microwires and Coiled Nanowires" *Cryst. Growth Des.*, **2018**, *18 (2)*, 677–685
2. MacInnes, M. M.; Hlynchuk, S.; Acharya, S.; Lehnert, N.; and Maldonado, S. "Reduction of Graphene Oxide Thin Films by Cobaltocene and Decamethylcobaltocene" *ACS Appl. Mater. Interfaces*, **2018**, *10 (2)*, 2004–2015
3. Acharya, S.; Maldonado, S. “Factors Affecting Crystal Growth during the Electrochemical Liquid Liquid-Solid Deposition of Germanium Microwires and Nanowires” *Submitted.*
4. Acharya, S.; Lancaster, M.; Maldonado, S. Accuracy of Kinetic Measurements at Individual Disk Ultramicroelectrodes. *Submitted.*