

---

---

# Avinash Nayak

2112 Guadalupe Street, Apartment #604, Austin, TX, 78705

(650) 440-9868

anayak@ucdavis.edu

<http://www.ece.ucdavis.edu/~anayakpr/>

---

---

## EDUCATION:

GPA: 3.76

UC Davis, California, 2010-2011 (Major: M.S. in Electrical Engineering, June 2011).

UC Davis, California, 2007-2010 (Major: B.S. in Material Science/Electrical Engineering – Dual Degree).

## OBJECTIVE:

To functionalize nanomaterials for developing technological applications. In particular, my research interests are in flexible electronics, silicon based batteries, zinc oxide based sensors, field ionization and emission devices, and carbon nanotube based transistors. I wish to maximize my research and industrial experience in a challenging and invigorating environment.

## PUBLICATIONS:

- (1) *UV and Oxygen Sensing Properties and Space Charge Limited Transport of Sonochemically Grown ZnO Nanowires*. Journal of 1D Nanomaterials. 2011. In preparation. *Draft*. (**Lead** author).
- (2) *Sonochemical Approach for Rapid Growth of Zinc Oxide Nanowalls*. Journal of Physical Chemistry C. 2011. In preparation. *Draft*. (**Lead** author).
- (3) *Wet Etch and Dry Etch*. Encyclopedia of Nanotechnology. 2011. Accepted – In print (Lead author). *Submitted copy*.
- (4) *Synthesis of Crystalline ZnO Nanostructures on Arbitrary Substrates at Ambient Conditions* (Second author). SPIE proceedings paper 2011. Submitted copy.
- (5) *Who do you trust? Information Sharing, Privacy Concerns and Trust in an online Social Network*. *Explorations Journal*. 2011. Explorations Journal. (**Lead** author).
- (6) A Perspective on Nanowire Photodetectors: Current Status, Future Challenges, and Opportunities. *IEEE Journal*. 2010. (Third author).
- (7) *Purely sonochemical route for oriented zinc oxide nanowire growth on arbitrary substrate*. *SPIE proceedings paper*. 2010. (**Lead** author).
- (8) *Sonochemical Synthesis of Zinc Oxide Nanowire Arrays on Silicon and Glass Substrates*. *NCUR conference paper*. 2010. (**Lead** author).

## CONFERENCES ATTENDED:

Poster Presentation at SPIE: Energy Harvesting and Storage conference in Florida. (2010).

Poster Presentation at BSAC: Berkeley Sensor and Actuator Center conference at UC Berkeley. (2009 & 2010).

Poster Presentation at SIAM: Society for Industrial and Applied Mathematics. (2009).

Oral presentation at IGPS: Interdisciplinary Graduate and Professional Student Symposium (2011).

Oral presentation at IAM: Annual Industrial Affiliates Meeting. (2010).

Oral presentation at URC: Undergrad Research, Scholarship and Creative Center. (2009 & 2010).

Oral presentation at NCUR: National Conference on Undergraduate Research. (2009 & 2010).

## RESEARCH EXPERIENCE:

Integrated Nanodevices and Systems Research (*Inano*)

January 2008 – June 2011

Principal Professor: Dr. M. Saif. Islam.

- ZnO Based Gas Field Ionization and Optical Sensors.

Stanford Nanofabrication Facility (*SNF*)

September 2007 – January 2009

Principal Professor: Dr. Subhasish Mitra, Robust Systems Group

- Carbon Nanotubes (SWCNTs) based transistor fabrication and characterization.

Working with Prof. D. Akinwande (*UT Austin*)

- Graphene based electronics

July 2011 - Present

Working at Stellar Micro Device (*SMD*)

- Design and fabrication of field emitters.

July 2011 – Present

## SOFTWARE EXPERIENCE (ADVANCED):

Data analysis: MS Office, SPSS, R, Pajek, Unicet, Netdraw, Statica, Photoshop, Dreamweaver, 3DS max, Illustrator, InDesign, SolidWorks, L-edit, Google Sketchup, OriginPro, Autocad 2011/2012.

Simulation: Comsol Multiphysics 4.1 (FEM lab) – AC/DC module, Acoustic module.

## RELEVANT COURSEWORK:

Semiconductor device physics, cleanroom fabrication experience, Bio-electronics, Material synthesis, characterization and processing, Electromagnetics, Analog circuit design. Advanced hardware experience with HP 4156 and Keithley 236.

## HONORS AND AWARDS:

- **Only** undergraduate researcher to present at the *Annual Industry Affiliates Meeting (IAM)* 2010.
- *Recognition of Achievement in Undergraduate Research* - Explorations Research Journal. **One of nineteen** to receive this award. 2010.
- Received honorable mention for *Chancellor's award for Excellence in Undergraduate Research*. **One of four** to receive this recognition. 2010.
- **One of seven** undergraduate researchers from UC Davis to present at the *National Conferences on Undergraduate Research* in Montana. 2010.
- **One of two** undergraduate researcher to present at *Society for Industrial and Applied Mathematics (SIAM)* 2010.
- Chosen as **one of six** to present at *National Conferences on Undergraduate Research in Wisconsin*. 2009.
- **One of three** to receive a *Certificate of achievement for public speaking (on ZnO piezoelectric energy harvesters)*. 2009.
- Certificate of achievement for *undergraduate research at UC Davis. URC*. 2009. **One of three** from the electrical engineering department.

## REVIEWED WORK:

- “ZnO Nanobridge Devices Fabricated using Carbonized Photoresist” Special *ISDRS Issue of Solid State Electronics*. Reviewed with Dr. M. Saif Islam. 2010.
- “Utilizing Social Networking Sites for Gathering Information on a Potential Target” Paper on *IEEE Symposium on Security and Privacy*. Reviewed with Dr. Raissa M. D’Souza. 2009.

## COMMUNITY INVOLVEMENT:

Tutor for Mathematics and English at Learn to Be.

Tutor for High School Pre-Calculus.

Volunteer at Davis Community Meals.

Volunteer at Explore It Science Center.

March 2010 – Current

May 2010 – June 2011

January 2009 – February 2010

January 2008 – December 2009

## REFERENCES:

### ***Dr. M. Saif Islam***

Professor

Integrated Nanodevices and Nanosystems Lab

Department of Electrical and Computer Engineering

University of California - Davis

Phone: 530-754-6732

Email: [saif@ece.ucdavis.edu](mailto:saif@ece.ucdavis.edu)

### ***Dr. Raissa M. D'Souza***

Associate Professor

Graduate Group in Applied Math

Department of Mechanical and Aeronautical Engineering

University of California - Davis

Phone: 530-754-8405

Email: [raissa@cse.ucdavis.edu](mailto:raissa@cse.ucdavis.edu)