Research Assignment - 2009

Title of research assignment

Novel magnetoelectric materials and devices

Principal Investigator	Nian Sun		
Title	Assistant Professor		
College/Department	Electrical and Computer Engineering		
Email	Nian@ece.neu.edu		
Office address	302 Dana	Office phone	617.373.3351
Lab address	132 Egan	Lab phone	617.373.3351

Research abstract

Our research areas include different topics, such as magnetic, ferroelectric, and magnetoelectric thin films and micro-devices for RF and microwave wireless communication applications.

We will try our best to match the interests of the RET and YSP participants with the different projects in our group. The active projects are:

1. Magnetic field sensors

2. Energy harvesting devices

3. Electrostatically tunable inductors

4. Magnetoelectric materials based microwave filters

Students are expected to work side by side with a graduate student on this project. You will be fully trained, make your materials and do your own measurements. This will lead to technical papers out of your own work, and make your own contributions,

RET/YSP participants can feel free to choose any topic(s) among the listed two projects according to his/her own interests. Further information is available by contacting Nian Sun at phone: 617-373-3351 or by email at: nian@ece.neu.edu.

Research activities/experience

RET/YSP participants will be working in Dana and Egan building at the Electrical and Computer Engineering Department. This is a friendly environment with ~6 graduate students, ~6 undergraduate students.

RET/YSP participants will get unlimited access to discussions with the faculties for research guidance, and well trained on all facilities needed for the research project. We typically pair each of the RET/YSP participants with one post doctoral scientist and one experienced graduate student for the daily training of all facilities in our labs, data analysis, and technical writing.

Typical research experience involves materials preparation, characterization, device fabrication and characterization, data analysis, and technical paper writing. Research results will be submitted to technical journals for publishing.

Expectations of RET

We have a quite flexible schedule depending on individual preferred arrangements. We do hope that the RET/YSP participants be in the labs on a regular basis. We expect that the research results will appear in technical journals.

Special skills or interests that would help a RET participant with this assignment (i.e., an interest in physics, experience with specific laboratory equipment, etc.)

Interests in physics, chemistry, and hands-on experiments with materials, device fabrication, characterization, and data analysis.

Lab safety/issues unique to this laboratory. A general Lab Safety Overview will be presented by Environment Health and Safety to both RET and YSP participants prior to the beginning of lab assignments.

A general Safety Overview from Environment Health and Safety is enough.

Suggested literature to be reviewed prior to beginning this research assignment.

This is not really necessary. We will train the students after he or she joins us.

Research/Lab Summer Hours 10:00 a.m. – 6:00 p.m.

- ☐ Monday through Thursday
- ☒ Monday through Friday

Scheduled Research/Lab Meetings 1:00 p.m. – 3:00 p.m.

- ☐ Daily
- ☐ Monday
- ☐ Tuesday
- ☐ Wednesday
- ☐ Thursday
- ☒ Friday
- ☐ To be determined

Lab/research project URL

www.ece.neu.edu/faculty/nian

Research/Lab Supervisor Nian Sun

Email nian@ece.neu.edu Phone 617.373.3351

Research/Lab Assistant

Email Phone

Research/Lab Assistant

Email Phone