



ESA Newsletter

Electrostatics Society of America - The Friendly Society

President's Message

We face interesting issues and challenges. Our Society can play a more constructive and important role. I am very interested in your thoughts and invite you to share your thinking by writing a "Member's Message" for our Newsletter.

Three of the major challenges are an increasing Applications Orientation, the changing Employment Landscape and Resource Fragmentation.

Application Orientation – Focus is shifting away from specific technologies (electrostatics, chemistry, fluid mechanics, etc.) and towards technical applications (inkjet printing, electronic displays, pharmaceutical development, etc.). Workers are rewarded for having broad expertise in the many disciplines needed for technical or commercial success. This trend shifts technical specialists away from "full members" of the team and towards being consultants. To thrive, technical specialists must: 1) maintain high technical competence, 2) broaden knowledge of applications, and 3) develop or strengthen communication and networking skills. How can our Society better enable our members to thrive?

Employment Landscape – The changes in the employment landscape are accelerating. Lifetime employment with one company has evolved into a fluid, dynamic, "free market" of jobs with small and medium size companies. Identifying job opportunities and finding qualified candidates to fill job openings are difficult challenges. A career counselor mentioned to me that only about 1 in 10 openings are filled using job postings that solicit applicants. Most openings, 9 in 10, are filled via network contacts before jobs are posted. How can our Society better enable our members to pursue interesting, rewarding careers?

Resource Fragmentation – Small and medium size companies rarely have all the resources needed to execute a research or commercialization project. Likewise, universities rarely have all the resources needed for a research project. Owning a silicon foundry, a super computer, an analytical lab, an electronics shop or a machine shop may be too costly. Collaboration between companies and universities to share resources enables progress. How can opportunities to share resources be developed?

The Electrostatics Society of America offers opportunities to maintain strong expertise in electrostatics, broaden knowledge of the many applications of our technologies, and communicate with technical colleagues from across the country and around the world. I invite you to share your thoughts on how the ESA can help you make the most of these opportunities by writing a short "Member's Message" for our Newsletter. Please submit your responses to me at Kelly.Robinson@SigmaXi.net. I look forward to hearing from you.

*Kelly Robinson,
ESA President*

CALL FOR PAPERS

2007 Electrostatics Society of America Annual Meeting

June 12 - 15, 2007

Purdue University, West Lafayette, Indiana USA

The 2007 Electrostatics Society of America (ESA) Annual Conference will be held on the campus of Purdue University in West Lafayette, Indiana June 12-15, 2007. Join us for our technical sessions including comprehensive technical papers, a Student Paper Competition, informal discussions, poster sessions, and electrostatics demonstrations.

TOPICS OF INTEREST INCLUDE:

- Atmospheric Electricity
- Biological Applications
- BioMEMS and BioFluidics
- Breakdown and Discharges
- Charge Neutralization
- Computational Methods
- Display Devices
- Electrets
- Electrohydrodynamics
- Electrophotography
- Electrostatic effects in drug delivery
- Electrostatic Painting
- Electrostatic Powder Coating
- Electrostatic microencapsulation
- Electrophoresis
- Electroviscous effects
- Electrostatic Printing
- Electrostatic Propulsion
- Electrostatics Demonstrations
- Electrostatics Education
- ESD Prevention and Detection
- MEMS Devices
- Nonthermal Plasmas
- Nanoelectrospray applications
- Particle Control & Transport
- Precipitators and Cleaners
- Safety and Hazards
- Sprays and Droplets
- Triboelectrification

DEADLINES:

Mid - February

March 1, 2007

March 16, 2007

April 13, 2007

Registration and detailed conference information will be available at www.electrostatics.org.

Titles, abstracts and name of 1 - 2 relevant subject area from the list above are due to www.electrostatics.org.

Notification of Paper Acceptance

Final Manuscripts due. Send final manuscripts to: electro@electrostatic.com

Instructions for authors are available at www.electrostatics.org, along with templates for MS Word and Latex.

- ◆ Authors may request that their manuscript be considered for publication in the Journal of Electrostatics.

STUDENT PAPER COMPETITION:

To encourage participation by student researchers, all presentations that have a student as the presenter and first author are eligible for the student paper competition. Note the student must attend and present at the meeting. Undergraduate and graduate students are eligible. Papers will be judged on their technical merit and the cogency of their presentation. Please indicate at submission that the abstract is to be considered for the student paper competition, and list all student authors.

Contact the General Chair for information regarding transportation and accommodations, or the Technical Chair for information regarding the technical sessions:

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Key Survey Question: ESA 2007 - What days do you want the program?

The 2007 ESA meeting will be at Purdue, in central Indiana, June 12-15 this year. Traditionally we have had the meeting Tuesday night through Friday noon. Unfortunately, many people leave Friday morning, which can make attendance at the Friday sessions and student awards presentation rather light. It has been proposed to start the meeting Tuesday noon so that it would end Thursday evening after the banquet and student awards presentation, allowing people to leave Friday morning. For those of you who plan to attend the meeting this year, which schedule would you prefer? Email **Sheryl Barringer**, Technical Chair, at barringer.11@osu.edu with your preference for a W-F or T-R schedule, by **November 15**.

Current Events

Radical 'Ballistic Computing' Chip Bounces Electrons Around Like Billiards

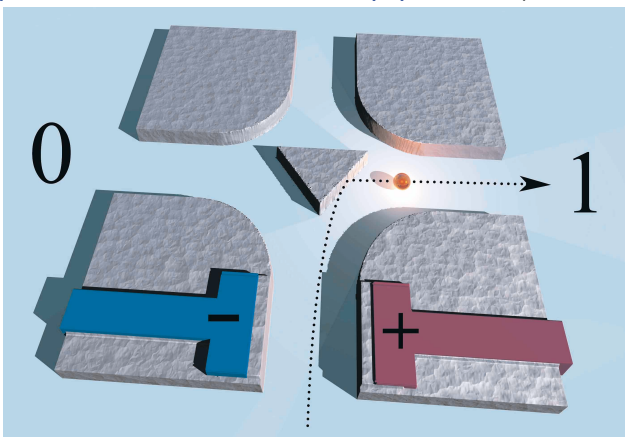
Jonathan Sherwood

Computer designers at the University of Rochester are going ballistic. Instead of running electrons through a transistor as if they were a current of water, the ballistic design bounces individual electrons off deflectors as if playing a game of atomic billiards.

Though today's transistor design has many years of viability left, the amount of heat these transistors generate and the electrical "leaks" in their ultra-thin barriers have already begun to limit their speed. Research groups around the world are investigating strange new designs to generate ways of computing at speeds unthinkable with today's chips. Some of these groups are working on similar single-electron transistors, but these designs still compute by starting and stopping the flow of electrons just like conventional designs. But the Ballistic Deflection Transistor adds a new twist by bouncing the electrons into their chosen trajectories—using inertia to redirect for "free," instead of wrestling the electrons into place with brute energy.

The Ballistic Deflection Transistor (BDT) should produce far less heat and run far faster than standard transistors because it does not start and stop the flow of its electrons the way conventional designs do. It resembles a roadway intersection, except in the middle of the intersection sits a triangular block. From the "south" an electron is fired, as it approaches the crossroads, it passes through an electrical field that pushes the electron slightly east or west. When the electron reaches the middle of the intersection, it bounces off one side of the triangle block and is deflected straight along either the east or west roads. In this way, if the electron current travels along the east road, it may be counted as a zero, and as a one if it travels down the west road.

(Excerpted from <http://www.rochester.edu/news/show.php?id=2585>)



ESA OFFICERS

President	Kelly Robinson, Eastman Kodak
Vice President	Sheryl Barringer, Ohio State Univ
Executive Council	John Gagliardi, Rutgers Univ. Steve Cooper, Mystic Tan Nathaniel Green, U. of Bloomsburg

CALENDAR

- ✓ 2006 ISEHD, 2006 Int'l. Symp. on EHD, Dec. 4-6, 2006, Buenos Aires, Argentina, website: <http://www.fi.uba.ar/isehd2006/2006>
- ✓ Electrostatics 2007, 12th Int'l. Conf. on Electrostat., IoP, Mar. 25-29, 2007, St. Catherine's College, Oxford, UK, Contact: Jasmina Bolfek-Radovani, Tel: +44 (0)20 7470 4800, jasmina.bolfek-radovani@iop.org website: <http://conferences.iop.org/ELE/>
- ✓ 1st Int'l. Electrostatic Discharge Workshop, May 14-17, 2007, Stanford Sierra Conference Center, Lake Tahoe, California, Contact: ESD Assoc., Tel: 315-339-6937, info@esda.org (abstracts due by Nov. 17, 2006), info at <http://www.esda.org>
- ✓ ESA 2007, June 12-15, 2007, Purdue University, West Lafayette, Indiana, Contact: Prof. Rajeswari Sundararajan, Tel: 765 494-6912, raji@purdue.edu
- ✓ 29th Annual EOS/ESD Symposium, Sept. 16-21, 2007, in Anaheim, California, Contact: ESD Assoc., Tel: 315-339-6937, info@esda.org (abstracts due by Jan. 12, 2007), info at <http://www.esda.org>

Current Events (cont'd.)

Lightning bum burn

http://www.ananova.com/news/story/sm_2025327.html

A Croatian woman suffered burns to her bum after lightning struck her in the mouth and passed through her body. Natasha Timarovic, 27, was cleaning her teeth in her home in the city of Zadar when lightning struck the building. She said: "I had just put my mouth under the tap to rinse away the toothpaste when the lightning must have struck the building. I don't remember much after that, but I was later told that the lightning had travelled down the water pipe and struck me on the mouth, passing through my body. It was incredibly painful, I felt it pass through my torso and then I don't remember much at all."

Doctors at the city hospital where she was treated for burns to the mouth and rear said: "The accident is bizarre but not impossible. She was wearing rubber bathroom shoes at the time and so instead of earthing through her feet it appears the electricity shot out of her backside. It appears to have earthed through the damp shower curtain that she was touching as she bent over to put her mouth under the tap. If she had not been wearing the shoes she would probably have been killed by the blast." Croatian daily 24 Sata said the young woman had been released from hospital after being kept in overnight and was expected to make a full recovery.

Electrostatics
Society of America



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ESA Information

ESA Home Page: <http://www.electrostatics.org>

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(see survey question on program dates: p. 2)