



ESA Newsletter

Electrostatics Society of America - The Friendly Society

President's Message

I am excited that our Electrostatics Society of America Annual Meeting will be held June 17-19, 2008 at the Ramada – Mall of America Hotel, Minneapolis, Minnesota. Al Seaver has done a great job making the arrangements for our conference. Prof. Dan Lacks has put together a strong technical program. I'm looking forward to a variety of interesting presentations about some great work. Our ESA Annual Proceedings 2008 will be an electronic document available in early May. If you prefer to thumb through a paper copy of the Proceedings, there will be plenty of time for you to browse the website and print your "high interest" papers. And, if you are unable to attend our Annual Meeting, you will have full access to our 2008 Proceedings.

At our Executive Council meeting, we will discuss several important administrative issues. I invite your comments, input and recommendations. I am anxious for feedback on our electronic proceedings. One option to be discussed is to expand the proceedings to a multimedia version, consisting of both the manuscript (*.pdf format) and the conference presentation, including a voiceover of the author's audio presentation. This multimedia documentation of presentations would be of great value to those who cannot attend our meetings. And, I expect the same high value as a written document. As you pursue your work and review a classic reference, imagine the impact of hearing the author's voice explaining this classic work.

Another highlight of our meeting this year is the election of ESA officers, as announced in this newsletter. We have a strong slate of officers and the ESA will be in good hands under their leadership.

What are your thoughts and recommendations for making the Electrostatics Society of America strong and relevant in the years to come? Please feel free to share your thoughts with the ESA Executive Council.

Thank-you for helping to make the ESA a strong, vibrant organization. Electrostatic phenomena present challenges and offer opportunities in many different technologies; from the charging of nanoparticles to dust storms on Mars. One could spend a life-time learning and working in electrostatics. I am proud to have served as ESA President for the past 3 years, and I am excited to continue to work with you to make the Electrostatics Society of America more valuable and more important to you.

*Kelly Robinson,
ESA President*

ESA-2008 Annual Meeting

Information on ESA-2008

ESA-2008 has an exciting technical program planned, with 48 talks on a wide range of topics associated with electrostatics. The topics include the fundamental science associated with electrostatics, as well as applications ranging from enhancing drug delivery in cancer cells to minimizing dust problems on missions to Mars. The Keynote Talks will be given by Prof. Peter Castle (University of Western Ontario), Prof. Bartosz Grzybowski (Northwestern University), and Prof. Nilton Renno (University of Michigan). The ever-popular Dr. Glenn Schmieg will be the Banquet Speaker.

It looks like a lot of ESA members like to **SAVE MONEY**. Early registrations are starting to flow in now, and it looks like 70% are also taking advantage of the extended stay offer of the Ramada-Mall-Of-America (Ramada-MOA). So to those who plan on coming to ESA-2008 and have not yet registered, maybe you might want to go right now to the ESA web site at www.electrostatics.org and click on the Registration Form, fill it out and **send it in immediately so you can save \$85** with the early registration.

If you come in by air, remember, you get complimentary shuttle service to and from the airport to the Ramada-MOA hotel. And, since this complimentary shuttle service

is also offered to the MOA, if you are planning an extended stay you might also consider the new light-rail system <http://www.metrotransit.org/rail/> connecting the Mall-Of-America with downtown Minneapolis. It is a really low cost and comfortable way to travel for those who do not want to rent a car. On the other hand, if you are coming by car you will find driving directions for the easy-to-get-to Ramada-MOA in the Meeting Announcement Brochure attached to this Newsletter, or at http://www.ramadamo.com/contact_us.htm

A highlight of ESA meetings over the past several years has been the student paper competition. In the past, ESA Secretary/Treasurer Steve Cooper, has been a great supporter of this activity and has been instrumental in making enhancements to this competition. For ESA-2008 Steve has informed us that Mystic Tan, Inc. will make a \$1200 donation in support of the student paper competition.

Finally, a gentle reminder to those interested in participating in the Spouses Committee's non-technical activities. Please contact Toni Seaver at tseaver@comcast.net so that she may add your name and e-mail address to her contact list.

*For the Friendly Society – Al Seaver, 1995-1999
Past President of ESA*

Election of ESA Council Members

The ESA Bylaws provide for the election of officers every two years. Members vote for a complete slate of candidates at the annual meeting, and anyone is eligible to nominate or be part of a slate.

At this time, we have one nominated slate of candidates for this year's election:

Slate of ESA Officers for 2008-2010:

President:

Rajeswari Sundararajan, Purdue Univ.

Vice President:

John Gagliardi, Rutgers Univ.

Executive Council

Sheryl Barringer, Ohio State Univ.

Steve Cooper, Mystic Tan, Inc.

Kelly Robinson, Electrostatic Applications, LLC

If anyone would like to nominate an alternate slate, please inform me well before the June conference so that we can prepare election materials for the business meeting. Absent an alternate slate, we will likely approve the current nominated slate by acclamation.

Kelly Robinson, ESA President

Kelly.Robinson@ElectrostaticAnswers.com

ESA Elections By-Laws - New Council Slates Are Sought.

Based on Article 4 of the ESA Constitution, the term of the present ESA Council ends on June 30, 2008 and the new Council term of office begins on July 1, 2008. It is now time for the Secretary (address found on back page of this ESA Newsletter) to receive slates of nominees for the upcoming (7/1/08 - 6/30/10) term.

Since the Council shall be nominated as a full slate, the presenter of that slate is responsible for checking with all the members of that slate to insure each nominee is willing to serve. A slate consists of five members: the President, the Vice-President and three Council Members.

If more than one slate is presented to the Secretary, a ballot will be mailed out about April 30 (or as soon as reasonably possible) with the deadline for receipt of the ballots by the Secretary being May 31, 2008. If only one slate is presented (then as tradition has held) no ballots will be mailed, and the Membership present at the ESA Annual Meeting will be asked to vote on the slate. If no slates are presented, then, as Article 4b states, "If extraordinary circumstances prevent the election of a new Council, the existing Council shall continue in office, year by year, until an election can be held."

	<h2>ESA 2008 Registration Form</h2> <p>June 17-19, 2008 Ramada – Mall of America Near the Mall of America and both the MSP & HHH Airports Bloomington, Minnesota USA</p>	Mail or e-mail this form to: Albert E. Seaver 7861 Somerset Ct. Woodbury, MN 55125 USA E-mail: aseaver@electrostatics.us Tel: 651-735-6760 (See ESA website for this form.)
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Date:			
Name:		Name on Badge:	
Affiliation:			
Address:			
City:	State:	Zip:	
Email:	Phone:		

CONFERENCE REGISTRATION FEES

Full Conference registration fee – ESA Members Includes Welcome Reception, lunches, snacks at breaks, Wednesday evening cruise down the Mississippi and Thursday evening banquet.	by 5/18/08	\$315	\$
	after 5/18/08	\$400	
Full Conference registration fee – Non-Members Includes all the above and a one year ESA membership.	by 5/18/08	\$335	\$
	after 5/18/08	\$420	
Student Registration – requires student ID Includes a one year ESA membership + everything in the Full Conference registration.		\$160	\$
Single Day Registration -- member or non-member Includes either Reception or lunch that day & snacks at breaks. Does not include the banquet		\$175	\$
Extra Mississippi River Cruise Tickets	#	@ \$35	\$
Extra Welcome Reception Tickets	#	@ \$15	\$
Extra Banquet Tickets	#	@ \$40	\$
TOTAL			\$

CONFERENCE REGISTRATION PAYMENT METHOD

<input type="checkbox"/>	I will pay on-line using Pay-Pal (www.electrostatics.org).
<input type="checkbox"/>	I have enclosed an international money order or check in \$US drawn on a US bank, made out to “ Electrostatics Society of America ”
<input type="checkbox"/>	I will pay at conference (sorry, no credit cards accepted)
Note: No matter which method of payment you choose, please either mail or e-mail this Registration Form to Al Seaver (addresses: see top right corner) by the registration due date to avail those rates.	

HOTEL ACCOMMODATIONS

Reservations can be made at the Ramada MOA (Ramada Mall of America) hotel. The special ESA Room Rate is \$89.00/night (not included in conference registration). This special rate is available for June 15-21, 2008. Reservations must be made by May 27, 2008 to qualify, but reserve rooms early to guarantee availability.

Reserve on-line at: www.ramadamo.com Click on the “Reservations” tab then click on the button “Make a Group Reservation” and then enter ELECTROSTA to get the special ESA rate. (Why Group button? -- ESA is a Group)

Or Reserve by phone: Call: 952-854-3411, and mention “Electrostatics Society of America” for these rates.

Current Events

New Sensor Shows Electric Nature of Dust Devils

Willie D. Jones

A team at the University of Michigan, in Ann Arbor, recently made a breakthrough that could help climate scientists fill in one piece missing from today's climate models. The group, led by Nilton Renno, has shown that electric fields as strong as 160 kilovolts per meter could double the amount of dust that makes it into the atmosphere. Dust is part of the family of aerosols—suspended particles or molecules in the air—which includes water vapor and soot from coal combustion. Aerosols absorb or reflect radiation, either warming or cooling regions of the earth.

Renno, an associate professor of atmospheric, oceanic, and space sciences, had predicted years earlier that electricity might be a missing link, when he noticed that dust devils, the spinning vortexes of air that look like miniature tornadoes, had strong electric fields. But he and Jasper Kok, a doctoral student, proved the extent of electricity's role in lifting dust into the air only after they created a new kind of electric-field sensor—one that measures a field's strength without disrupting the field and is immune to the effects of ion currents and the negative charges carried by wind-blown particles colliding with the sensor.

Though it remains unclear just how important natural dust is to climate change, Renno's work may yield another, largely unintended benefit. The sensor he and his colleagues developed for taking measurements on windswept sand dunes and dusty mesas is being tested for use inside semiconductor fabs. Renno reports that Flextronics—a Singapore-based firm that designs, fabricates, assembles, and tests electronics such as printed circuit boards—is determining the sensor's usefulness in detecting the buildup of electrostatic charge in clean rooms. Such discharges lower microprocessor yields. Kok notes that the sensor's value comes from its size, which is "an order of magnitude smaller than traditional sensors of this type, so it can get closer to possible sources of electric discharge."

The main component of the sensor, which Renno and his team have spent a few years developing, is a 22-millimeter-diameter, 150-mm-long rotating cylinder coated with silver conductive paint. The cylinder is divided lengthwise into two hemispheres that are connected by a wire. The sensor distinguishes between the effects of the ambient electric field and error-inducing airborne charged particles by measuring the amount of charge from both sources that moves from one hemisphere to the other as the cylinder rotates at 1000 revolutions per minute. It

then takes another measurement at, say, 2000 rpm. Because the part of the signal that comes from the electric field varies in direct proportion to the cylinder's rotational speed, a 50 percent increase in the amount of charge pulsing through the wire after doubling the rotation speed means that half of the total charge measured at the slower speed was due to the electric field.

Renno, who continues to use the device to fill in blanks in the climate picture, says his team's next step is to build a database of readings taken at some of the world's most dusty regions. This will help them find answers to remaining questions, such as how ambient weather conditions like humidity affect the processes by which dust achieves liftoff.

But how important is natural dust in the overall aerosols picture? Ronald L. Miller, a senior scientist at the NASA Goddard Institute for Space Studies, in New York City, notes that until more historical data regarding the relationship between wind and dust accumulates, it will be impossible to tell whether the amount of natural dust in the air is having an effect on climate change in the same way that human-made aerosols like soot do.

<http://www.spectrum.ieee.org/mar08/6030>

Biomedical engineers use electric pulses to destroy cancer cells

Lynn Nystrom

A team of biomedical engineers at Virginia Tech and the University of California at Berkeley has developed a new minimally invasive method of treating cancer, and they anticipate clinical trials on individuals with prostate cancer will begin soon. The process, called irreversible electroporation (IRE), was invented by two engineers, Rafael V. Davalos, a faculty member of the Virginia Tech–Wake Forest University School of Biomedical Engineering and Sciences and Boris Rubinsky, a bioengineering professor at the University of California, Berkeley.

Electroporation is a phenomenon known for decades that increases the permeability of a cell from none to a reversible opening to an irreversible opening. With the latter, the cell will die. What Davalos and Rubinsky did was apply this irreversible concept to the targeting of cancer cells. "IRE removes tumors by irreversibly opening tumor cells through a series of short intense electric pulses from small electrodes placed in or around the body," Davalos, the 2006 recipient of the Hispanic Engineer National Achievement Award for Most Promising Engineer or Scientist, said. "This application creates permanent openings in the pores in the cells of the undesirable tissue. The openings eventually lead to the death of the cells without the use of potentially

NON-TECHNICAL PROGRAM – Spouses Committee

During Registration, submit your spouse's name and e-mail address to the Spouses Committee Chair, Toni Seaver at tseaver@comcast.net to be on her contacts list. All will meet during the Welcome Reception. Information on the Spouses Committee events will then be presented afterwards at the ESA Hospitality Suite (Room 215).



Driving Directions

After you are on 24th Ave, the Ramada-MOA is the very first exit on the right.

From the north: 35W South to I-494 East; Exit on 24th Ave. Or 35E South to I-494 West; Exit on 24th Ave.

From the south: 35W North to I-494 East; Exit on 24th Ave. Or 35E North to I-494 West; Exit on 24th Ave.

From the east: I-494 West to 24th Ave. exit; Hotel is on south side of Interstate.

From the west: I-494 East to 24th Ave. exit; Hotel is on south side of Interstate.

ESA Executive Council

Kelly Robinson, President
Sheryl Barringer, Vice-President
John Gagliardi, Council
Steve Cooper, Council
Nathaniel (Ned) Green, Council

Staff Officers

Steve Cooper, Secretary/Treasurer
Mark Zaretsky, Newsletter Editor
Joseph M. Crowley, Publications Comm.
Anne S. Benninghoff, Archivist
Mark N. Horenstein, ESA Webmaster

ESA-2008 Conference Organizers

Dan Lacks, Technical Chair
Toni Seaver, Spouses Committee
Al Seaver, General Chair

Meeting Announcement



ESA-2008

The ESA Annual Meeting on
Electrostatics

June 17-19, 2008

Minneapolis, Minnesota USA

Ramada Mall of America
2300 East American Boulevard
Bloomington, Minnesota 55425-1228
Phone: (952) 854-3411

Introduction

You are invited to join us for the Annual Meeting of the Electrostatics Society of America (ESA) held this year near the Mall of America (MOA) at one of the most unique hotels in America; the Ramada-MOA. Its interior was designed to pay homage to the Native American influence in Minnesota history. Its halls display some of the most exquisite American Indian sculptures and artwork found anywhere. Its staff is warm and friendly, and the amenities are the type you want; like complimentary shuttle service to and from the hotel to the airports (HHH and MSP), complimentary shuttle service to and from the Mall of America, and free high speed wireless Internet access throughout the hotel.

The Electrostatics Society of America

The ESA is a nonprofit organization founded in 1970 to promote the advancement of the field of electrostatics and to encourage discussion in its practical and fundamental aspects. In addition to the ESA Annual Meeting, the Society sponsors a bimonthly newsletter, annual prizes for students and teachers of electrostatics, and the Electrostatics Hall of Fame at the Franklin Institute in Philadelphia. The ESA also operates a web site on the Internet at: www.electrostatics.org.

Membership is open to all individuals with an interest in electrostatics. Annual dues are \$20.

General Information

REGISTRATION

The registration form for ESA-2008 can be obtained from the ESA web site's home page at www.electrostatics.org and is available in both MS Word and PDF form. Instructions for mailing are listed at the top-right of the form. Those who register will be issued an ESA name badge at the Welcome Reception.

Costs: Full Conference Registration cost is \$400 for members and \$420 for non-members. Student Registration cost, partially subsidized by the ESA, is \$160. The Special Events are included in Full and Student Registration costs. Extra tickets for the Special Events can be purchased on the form for others who accompany you to the conference. Single Day Registration is \$175 for members and non-members. Hotel accommodations (not included in the registration) can be obtained at a reduced rate by following the instructions in the registration form.

Early Registration: Sending in your registration by May 18, 2008 saves you \$85.

Late Registration: On Tuesday June 17 late registration will take place during the Welcome Reception (11:00 am and 1:00 pm) in the Shoshone Room of the Ramada-MOA. On Wednesday June 18 and Thursday June 19, late registration will take place during the Continental Breakfast (7:15 am and 8:00 am) in the Shoshone Room.

CONFERENCE LOGISTICS

The Electrostatics Society of America (ESA) Annual Meeting takes place next to the Mall of America (MOA) at the Ramada-MOA hotel in Bloomington, MN.

Length of Conference: The conference starts Tuesday June 17, 2008 at 11:00 am with a Welcome Reception and ends on Thursday evening June 19, 2008 with the ESA Banquet which lasts until 10:00 pm.

Arrival by Airplane: After you arrive at either MSP or HHH airport, get your luggage and use the complimentary shuttle service phone in the baggage area to contact the Ramada-MOA. They will send their shuttle to pick you up.

Arrival by Car: For those driving to the Conference you need to know that an interstate beltway – with I-694 to the north and I-494 to the south – goes around Minneapolis and St. Paul. I-494 cuts through the city of Bloomington in the south-east section of the beltway. A map showing where I-494 passes by the airports and the MOA is shown on the back cover of this brochure along with directions to get to the hotel.

Parking: There is free overnight parking at the Ramada-MOA.

Check-In: At the Ramada-MOA check-in is 3 pm and check-out is 12 noon. Hotel will accommodate any early arrivals on an “as space becomes available” basis. If necessary, space will be made available in the Shoshone conference room for temporary luggage storage.

Shuttle: Ramada-MOA offers complimentary 24 hour airport shuttle service to and from both MSP and HHH international airports plus to and from the MOA.

Internet Access: Free high speed wireless is available throughout the hotel.

TECHNICAL PROGRAM

An exciting technical program planned, with 48 talks on a wide range of topics associated with electrostatics. The technical papers will be made into e-Proceedings which will be accessible from a link on the ESA web site sometime in May. The Keynote Talks will be given by Prof. Peter Castle (University of Western Ontario), Prof. Bartosz Grzybowski (Northwestern University), and Prof. Nilton Renno (University of Michigan). The Banquet speaker will be Dr. Glenn Schmiege.

Technical Sessions: All the technical talks, session breaks, continental breakfasts and the Welcome Reception will be held in the Shoshone Room.

Lunches and Banquet: These will be held in the East Menominee Room.

Name Badge: Your ESA name badge is your entrance ticket to all conference sessions and Special Events. Please remember to wear your badge at the conference.

Special Events

- A *Welcome Reception* will be held in the Shoshone Room of the Ramada-MOA between 11:00 am and 1:00 pm on Tuesday June 17.
- A *Mississippi River Boat Cruise* will be held between 6:00 pm and 8:00 pm on Wednesday June 18. Busses will leave the hotel promptly at 5:00 pm. On the cruise, pizza is included and 2 for 1 drink coupons can be purchased.
- The *ESA Banquet* will be held in the East Menominee Room of the Ramada-MOA between 6:00 pm and 10:00 pm on Thursday June 19.

Refreshments and Meals: Much food is included in the Registration. A Welcome Reception on Tuesday, continental breakfasts and sit down lunches on Wednesday and Thursday, pizza during the boat cruise on Wednesday and a banquet on Thursday evening are included. Also, light refreshment breaks will be provided between sessions each morning and afternoon.

Call for Papers: IESJ & ESA

International Assembly of Electrostatics

The Institute of Electrostatics Japan (IESJ) and Electrostatic Society of America (ESA) have organized a biannual conference on electrostatics. As the importance of this field has been increasing, we would like to call for participants from all over the world, and we invite the electrostatic society in any country for co-operation and for exchange of information. This year (2008), we will plan an international assembly of electrostatics and workshop. You are invited to attend the assembly meeting and the workshop to be held as follows:

Nov. 9-12, 2008: Assembly meeting in Naha, Okinawa (\$150US)

Nov. 12-15, 2008: Workshop on application of electrostatic technology Chisan Hotel, and Hotel Nikko Yaeyama, Ishigaki Island (\$100US)

Field of interest: Any subjects that contain electrostatics and high electric field.

Important dates:

June 15, 2008: Title & abstract submission (250 words max.) Send to IESJ (iesj@iesj.org) or Prof. T. Oda, President IESJ (oda@ii.t.u-tokyo.ac.jp) or Prof. A. Mizuno, Vice-Pres. IESJ (mizuno@eco.tut.ac.jp)

July 31, 2008: Travel booking due date (after this date, hotel room will not be secured)

Hotel and flight bookings: Mr. S. Sahara, JTB Chubu Toyohashi Branch office, Tel. +81-532-54-6712, Mobile +81-80-3594-6776, Fax +81-532-52-3160, e-mail: s_sahara651@jtb.jp

Sept. 30, 2008: Manuscript due date (6 pages in A4 max.) (format to be announced).

Current Events (cont'd.)

harmful chemotherapeutic drugs." The researchers successfully ablated tissue using the IRE pulses in the livers of male Sprague-Dawley rats.

Oncologists already use a variety of methods to destroy tumors using heat or freezing processes, but these current techniques can damage healthy tissue or leave malignant cells. The difference with IRE is Davalos and Rubinsky were able to adjust the electrical current and reliably kill the targeted cells. "The reliable killing of a targeted area with cellular scale resolution without affecting surrounding tissue or nearby blood vessels is key," Davalos says. At Virginia Tech, Davalos directs the interdisciplinary Bioelectromechanical Systems Laboratory, part of the university's Institute for Critical Technology and Applied Science (ICTAS) of which the school of biomedical engineering and sciences is a core member. In the

ESA OFFICERS

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Kelly Robinson, Electrostatic Applications, LLC

Vice President

Sheryl Barringer, Ohio State University

Executive Council

John Gagliardi, Rutgers University

Steve Cooper, Mystic Tan

Nathaniel Green, University of Bloomsburg

Calendar

✦ ESA-2008, June 17-19, 2008, Minneapolis, MN, USA
Contact: Al Seaver, Tel: 651-735-6760, aseaver@electrostatics.us, or Daniel Lacks, Tel: 216-368-4238, daniel.lacks@case.edu, website:

<http://www.electrostatics.org>

✦ 16th Int'l. Conf. on Diel. Liquids, June 30-July 4, 2008, Poitiers, France, Contact: H. Romat, Tel: 33-(0)5-49-49-69-31, icdl2008@lea.univ-poitiers.fr, (abstracts due Oct. 15, 2008), info at

<http://lea.sp2mi.univ-poitiers.fr/icdl/>

✦ 6th Conf. of the French Electrostatic Society, July 7-9, 2008, Gif-Sur Yvette, France, Contact: Philippe Molinie, Tel: 33-(0) 1-69-85-15-25, sfe2008@sup-elec.fr, (title due Dec. 15, 2007), website:

<http://www.supelec.fr/invisfe2008/Welcome.html>

✦ 11th Int'l. Conf. of Electrostatics. May 27-29, 2009, Valencia, Spain, Contact: Dr. Pedro Segovia, Tel: (+34) 96 136 66 70, pedro.llovera@ite.es, website: <http://electrostatics.ite.es> (abstracts due Feb. 29, 2008)

✦ ESA-2009, June 16-19, 2009, Boston, MA Contact: Mark Horenstein, Tel: 617-353-5437, mnh@bu.edu, website:

<http://www.electrostatics.org>

Bioelectromechanical Systems Laboratory, other research projects associated with utilizing the physical and electrical characteristics of cells, such as engineering methods for microfluidic single cell analysis, selective cell concentration and image-guided surgery, broaden the understanding and potential of the field of IRE.

"IRE shows remarkable promise as a "minimally invasive, inexpensive surgical technique to treat cancer. It has the advantages that it is easy to apply, is not affected by local blood flow, and can be monitored and controlled using electrical impedance tomography," Davalos explained. Davalos and other researchers will continue to advance this promising method to treat cancer.

(from <http://www.vtnews.vt.edu/story.php?relyear=2007&item-no=379>)

Electrostatics
Society of America



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Rochester, NY 14618

ESA Information

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

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