

Message from the Chair

As we transition to 2015, I am honored to take up the role of Chair of the NSEF. I would especially like to thank Zach Hilt, now past Chair, for his service, as well as our other outgoing officers, Virginia Davis (past Secretary/Treasurer), Thomas Mensah (past Member at Large), and Kurt Rindfusz (previous past Chair). I also welcome our new, incoming officers, Geoffry Bothun (Vice Chair), Michael Harris (Secretary/Treasurer), and Marc Keleman (Member at Large). I am confident that our leadership team will continue to move the organization in exciting new directions.

I would especially like to call attention to our plans for the coming year. The call for abstracts for the AIChE Annual meeting is now open and will accept abstracts through May 11, 2015. Currently the NSEF is sponsoring 22 sessions, including the popular plenary sessions in nanotechnology and bionanotechnology and our two graduate student award sessions. We look forward to seeing you in Salt Lake.

Another major focus for the coming year will be the planned production of a new book sponsored by the NSEF: *Frontiers of Nanotechnology: Manufacturing Processes and Products*. More information about the book, including a solicitation for chapters can be below.

I am honored to work with all of you in these future plans and wish you the very best 2015!

News and Announcements

Call for Book Chapters - Frontiers of Nanotechnology:

AIChE-Wiley has a call for book chapters related to *Frontiers of Nanotechnology: Manufacturing Processes and products*. The *Frontiers of Nanotechnology Book Series* seeks to advance techniques for scale up and transition of Nanotechnology Processes to Industry. The book provides insight into the current status of Advanced Nanotechnology processes and their scale up to semi-industrial and Full Scale Industrial levels, while Addressing Key Scale up challenges. The impact such understanding has on Full Scale Nanotechnology-Manufacturing on business and marketing strategy, including expansion and execution, is necessary after years of major investments in the technology worldwide. See this [link](#) for more information. Please contact Jessica Winter (winter.63@osu.edu) to propose a chapter.

2014 AIChE Annual Meeting Graduate Student Award Winners:

NSEF sponsored two award sessions at the 2014 AIChE Annual Meeting in the areas of Bionanotechnology and Carbon Nanomaterials. These sessions honor graduate students whose research achievements are in these areas and who demonstrate a high level of excellence in their work. We are pleased to announce the winners of the winners of each session. Congratulations!

- Bionanotechnology: 1st Place: Paul Godfrin (University of Delaware), 2nd Place (Tie) - Anastasia Kruse (University of Kentucky) and Reem Eldawud (University of West Virginia)
- Carbon Nanomaterials: 1st Place: Megan Creighton (Brown University), 2nd Place: Xi Zhang (Lamar University)

2014 AIChE Annual Meeting Poster Session Winners:

NSEF hosted its annual poster session at the 2014 Annual Meeting where numerous high quality posters addressing fundamental science and engineering issues associated with nanoscale science, engineering and technology were presented. The poster session winners for this year are: 1st Place: Yijin Kang (Argonne National Lab), 2nd Place: Justin Clar (University of Florida), 3rd Place: Candice Pelligra (Yale University). Congratulations to all of the winners!

Member Awards & Highlights

Dr. Thomas Mensah Elected as Fellow of National Academy of Inventors

NSEF Director and Member, Dr. Thomas Mensah, was elected as a fellow of the National Academy of Inventors (NAI) in December 2014. According to NAI, "Election to NAI Fellow status is a high professional distinction accorded to academic inventors who have demonstrated a highly prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development, and the welfare of society." Congratulations Tom!!!

If you have a recent high impact publication, honor, or award that you would like to have highlighted in

the NSEF Newsletter please submit these to the Newsletter Editor at smeenach@uri.edu.

Upcoming Events

NSF Workshop: Chemical Engineering Academia-Industry Alignment

March 9 - 10, 2015 in Arlington, VA. More information can be found at:

<http://www.aiche.org/conferences/nsf-workshop-chemical-engineering-academia-industry-alignment/2015>

AIChE's Spring 2015 Virtual Career Fair

April 9, 2015 - online format.

<http://www.aiche.org/resources/conferences/events/career-fair/2015-04-09>

ASME 2015 4th Global Conference on Nanoengineering for Medicine and Biology

April 19 - 22, 2015 in Minneapolis, MN.

<http://www.asmeconferences.org/NEMB2015/>

2015 Spring AIChE Meeting and 11th Global Congress on Process Safety

April 26 - 30, 2015 in Austin, Texas. Abstracts submission deadline has passed.

<http://www.aiche.org/conferences/aiche-spring-meeting-and-global-congress-on-process-safety/2015>

89th ACS Colloid and Surface Science Symposium

June 15 - 17, 2015 in Pittsburgh, PA.

<http://colloids2015.org/Colloids2015/Home.html>

Nanotechnology News Highlights

Researchers discover carbon nanoballs contribution to sustainable energy

Researchers at Chalmers University of Technology have discovered that the insulation plastic used in high-voltage cables can withstand a 26 per cent higher voltage if nanometer-sized carbon balls are added. This could result in enormous efficiency gains in the power grids of the future, which are needed to achieve a sustainable energy system. "Being able to increase the voltage to this extent would result in enormous efficiency gains in power transmission all over the world," says Chalmers Scientist Christian Müller. phys.org (1/27)

Spiders give insight into spinning nano-scale fibers

A spider commonly found in garden centres in Britain is giving fresh insights into how to spin incredibly long and strong fibres just a few nanometres thick. The majority of spiders spin silk threads several micrometres thick but unusually the 'garden centre spider' or 'feather-legged lace weaver' *Uloborus plumipes* can spin nano-scale filaments. Now an Oxford University team think they are closer to understanding how this is done. Their findings could lead to technologies that would enable the commercial spinning of nano-scale filaments. [ScienceDaily](http://sciencedaily.com) (1/27)

Diaper material provides an expansion to nano-scale optical imaging

Researchers at the Massachusetts Institute of Technology have refined a way to allow for the imaging of tissue with nanometer resolution using ordinary optical microscopes. Their technique involves expansion microscopy, where tissue is treated with a chemical cocktail that makes it transparent, fluorescently tags parts of the tissue, and expands upon the addition of water. The now larger scale tissue can be imaged using regular optical and fluorescent microscopes. [Scientific American](http://scientificamerican.com) (1/9)

Membership Column

Not a member of AIChE or NSEF? In order to guarantee that you are included in our current email list so that you will have updated access to NSEF materials and award eligibility make sure you are a current NSEF and AIChE member. NSEF membership is an additional \$10/year to the AIChE membership. You can follow the steps of one of the following options below to join:

1. Visit AIChE's membership website to sign up online: <http://www.aiche.org/membership>
2. Download the following file from the AIChE website: Membership Application PDF and send your application and payment directly to AIChE.

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