

Nancy Lin Awarded First SCSC Fellowship

Hsiao-Yu Nancy Lin leads a busy life, but it is one that will significantly impact the future of desalination in the water industry.

In the 10 years since moving to the United States from Taiwan, she has earned a B.S. in Chemical Engineering from Rensselaer Polytechnic Institute in New York, and moved across the country to attend the University of California, Los Angeles (UCLA) for a Ph.D. in Chemical Engineering.

Currently entering her fourth year of doctoral research, Lin was named as the first Southern California Salinity Coalition (SCSC) Fellowship recipient for 2007.

"It's a great honor and big acknowledgement for what I do. I'm very excited," said Lin.

The SCSC Fellowship was established to support research in addressing the critical need to reduce salts in water supplies and preserve water resources in Southern California. Lin will receive \$10,000 per year for 2 years to complete her research on "Development of Fouling/Scaling-Resistant Surface Nano-Structured Polyamide Reverse Osmosis/Nanofiltration Membranes."

She has designed a two-phase research project to examine commercial membrane surfaces to see what membrane property affects fouling and scaling, and then will use this information to modify the membrane surface. Fouling occurs when undesir-

able materials accumulate on the membrane surface, causing loss of performance. Scaling is a more specific term for the fouling phenomenon that is used to describe the accumulation of inorganic crystals, such as salt.

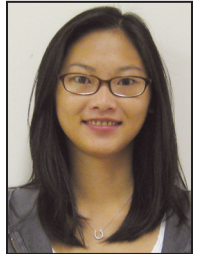
Membrane technologies have emerged in recent years as a viable and cost effective treatment alternative for difficult-to-treat water containing microbes, pathogens, disinfection byproducts, and high levels of salinity.

The research objective of Lin's project is to develop a new type of membrane with better fouling resistance, which will prevent the need to shut down water treatment facilities to clean membranes.

Completion of the first phase of the project is expected within a few months. So far, the results have shown rough surface topology to be more prone to scaling. The second phase will entail modifying the surfaces of existing commercial membranes, developing new backing, or using a new post-treatment process to increase surface smoothness.

One technique that Lin plans to use is graft polymerization, in which she will polymerize a thin brush layer on the existing polymer surface of the membrane. The brush layer will extend

Please see SCSC FELLOW on reverse side



Nancy Lin

Coalition Members

Eastern Municipal
Water District

Inland Empire
Utilities Agency

Irvine Ranch
Water District

Metropolitan
Water District
of Southern California

Orange County
Sanitation District

Orange County
Water District

San Diego County
Water Authority

Sanitation Districts of
Los Angeles County

Santa Ana
Watershed Project
Authority

West Basin
Municipal
Water District

in Affiliation with the

National Water
Research Institute

SCSC Planning Salinity Seminar Series

A series of three regional SCSC Salinity Seminars will be held over the next year to raise awareness and engage stakeholders on salinity issues in Southern California. The seminars will be held in regions representing Los Angeles, San Diego, and Santa Ana.

Topics will include:

- Regional salinity issues.
- Irrigating with recycled water.
- Addressing impacts of water softeners.
- Collaborative approaches to reducing the impact of salinity.

- Spreading water for groundwater recharge.
- And more.

Each seminar will emphasize regional water management planning as a tool in addressing salinity-related challenges. The objectives of these seminars include sharing information with stakeholders, reviewing salinity-related needs and issues, and identifying opportunities for collaboration on future projects addressing areas of concern.

Water and wastewater agencies, regulators, and other stakeholders will be invited to participate in the seminars. For more information, please contact Jeff Mosher at (714) 378-3278 or jmosher@nwri-usa.org.

SCSC Fellow Developing Better Membranes

Continued from SCSC FELLOWSHIP on reverse side

out of the membrane surface in a solution, such as water, extending the mobility of the polymers. With the polymers "moving" around, the possibility for ions to accumulate on the membrane decreases. The goal of the process is that, after the modification, the membrane will be able to maintain at least its original membrane physical properties and will emphasize the anti-fouling characteristic. The expected completion date for her project is 2009.

So how does a young woman like Nancy Lin end up in the desalination industry?

Her academic inclination was evident in high school, when she applied for and won scholarships like the Time Warner Cable Scholarship and Continental Airline Leaders for the Millennium Scholarship. In college, she received an invitation to become a member of the Phi Lambda Upsilon Chemistry Honor Society. As

an undergraduate, she already knew she did not want to study just pure science because she desired to make an impact in a real-world setting. The practical applications of an engineering degree appealed to Lin and, upon her arrival at UCLA, she was introduced to the water and wastewater industry.

Now she is working in a laboratory where about eight other graduate students and postdoctoral students are working on individual, yet related projects to contribute to the long-term goal of making desalination more feasible.

At present, Lin is finishing up the last part of the proposal for her topology study (Phase 1) to present at the American Institute of Chemical Engineers Annual Meeting in November 2007 in Salt Lake City, Utah.

After she completes her doctoral research project, Lin expects to fulfill her long-term goal of working in the emerging field of membrane development.

Upcoming Events

Membrane Plant Operator Training

September 27, 2007

Hosted by: Southwest Membrane Operator Assoc.

Location:

Irvine Desalter Project

26 Waterworks Way • Irvine, CA 92618 USA

Limited to 50 attendees, this membrane plant operator training workshop will cover topics such as pretreatment and fouling, membrane cleaning elements and concentrate disposal, and membrane element construction, among others. It will be held from 8 am to 4 pm.

CEUs have been approved for California Water (6 Contact hours) and Wastewater (.55 Education Points).

SWMOA is dedicated to providing a forum for membrane system operators to exchange information, experience, and knowledge. As part of this effort, SWMOA provides educational credits through workshops and hands-on training necessary for Operator Certification.

For more information, please visit:

www.swmoa.org

Sixth Annual National Salinity Summit

January 17-18, 2008

Hosted by: The Multi-State Salinity Coalition

Location:

South Point Hotel, Casino, and Spa

9777 Las Vegas Blvd South • Las Vegas, NV 89183 USA

The National Salinity Summit will consist of focused networking, dialogue, and discussion between congressional staff, regional and local policy makers, managers, experts, and others from throughout the country who have developed, implemented, and advanced breakthrough policies and approaches associated with salinity management and desalination.

The mission of the Multi-State Salinity Coalition (MSSC) is to meet the growing need in the United States for safe, sustainable, adequate, and affordable water supplies. MSSC promotes advancements in desalination-related technologies, salinity control strategies, and associated policies.

For more information, please visit:

www.multi-statesalinitycoalition.com

Southern California Salinity Coalition

in Affiliation with the

National Water Research Institute

10500 Ellis Avenue

P.O. Box 20865

Fountain Valley, California

92728-0865

(714) 378-8240

Fax: (714) 378-3375

www.socalsalinity.org

Contact:

Jeff Mosher,

Administrative Director

jmosher@socalsalinity.org