



# THERMAL HYDRAULICS DIVISION NEWSLETTER

## Fall 2011

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### Message from the Chair

Dear Colleagues,



Greeting from Corvallis, Oregon. I hope that this newsletter finds you all well. As my first opportunity to address the THD membership through the newsletter, let me say that it is indeed an honor to represent such a dedicated group of professionals.

It is clear from all accounts that the THD has and continues to be one of the leading professional divisions within the ANS. This is

a direct result of the efforts of the Executive Committee and the previous officers and chairs.

One measure that is used frequently to examine the health of any division is its membership and membership growth. The last several newsletters have reported on our continued membership growth and strength and that trend has been continuing. As of 2010, there were 1129 members of the Thermal Hydraulic Division. This represents a 9.2% jump over 2009 and is a very robust growth rate. This also represents 9.8% of the total ANS membership up from about 7.5% of the total ANS membership about a decade ago.

I don't know if a 9.2% annual growth rate in membership is sustainable over the long term. However, I do know that the recruitment and development of our young professional and student members is what will drive any membership growth in the future. In that regard there are currently 209 student members of the division, which has grown from around 130 in 2004.

The division continues to engage our youngest members through a number of programs. For example, for the 2011 ANS Winter Meeting, the THD will offer travel support directly to students planning on presenting papers in the THD sessions.

In addition, the division is again sponsoring its "Young Professional Thermal Hydraulics Research Competition"

during the ANS Winter Meeting in DC. There will be two sessions held on Wednesday November 2 with 16 papers scheduled. Thanks go to Brian Collins, our liaison to YMG and Elia Merzari for their organizing efforts. I encourage all of you at the Meeting to attend these sessions and take some time to interact with the "future" of our division. If you are so inclined, I also ask that you offer your time to help out as a judge for the competition as we are always in need of additional judges.

Although important, the strength of our division is more than just its membership numbers. Our strength can also be judged by the impact that our membership has on the Society and our profession as a whole. As 2011 comes to a close I think it is safe to say that this has been a year of challenges for the Society and the Division. The implications of the event that unfolded in Japan last Spring at Fukushima Daiichi are only beginning to be elucidated and it may be a number of years before the final analysis is complete. What is clear is that the Thermal Hydraulic Division and its members have played and will continue to play a lead role in the development of an understanding of the event, the transfer of information to the public concerning the event and the incorporation of lessons learned into the international community.

Notably, the Thermal Hydraulic Division co-sponsored the "Special Session of the Accident at Fukushima—Preliminary Investigation" during the 2011 ANS Annual Meeting for which Dr. Hisashi Ninokata, the THD Chair at the time, was a panelist. The THD also devoted a significant portion of our Spring 2011 Newsletter to the Fukushima event. Ultimately, I think that ever member of the division that I have spoken with over the last 6 months or so has had some role to play...ranging from a very direct technical role through a more indirect role of teaching and public information dissemination.

Other highlights of note recently include the 14th International Topical Meeting on Nuclear Reactor Thermal Hydraulics. NURETH-14 was held last month in Toronto Canada and was co-sponsored between the Canadian Nuclear Society and the ANS Thermal Hydraulic Division in cooperation with the International Atomic Energy Agency and OECD Nuclear Energy Agency. By all accounts it was an extremely successful conference and highlights the strength of our international work and relationships. Now that NURETH-14 is behind us we can look forward to NUTHOS-9 to be held in

Kaohsiung, Taiwan in 2012, the 2012 Advances in Thermal Hydraulics Topical Meeting to be embedded in the 2012 ANS Annual Meeting and NURETH-15 to be held in Pisa, Italy in 2013.

A little closer is the upcoming ANS Winter Meeting, which starts on October 30. I encourage you to look at the Preliminary Program for the Meeting and join us in Washington DC ([http://www.new.ans.org/meetings/c\\_1](http://www.new.ans.org/meetings/c_1)) for our nine technical sessions and 61 scheduled presentations. Kurshad Muftuoglu lists the sessions later in this newsletter under the Program Committee report.

The new officers, Professor Xiaodong Sun (vice chair/chair-elect), Si Young Lee (Treasurer), David Aumiller (Secretary) and I are endeavoring to lead the Division through another productive year. We welcome communication from anyone who would like to volunteer their time and efforts.

Thank you for your continued loyalty to the ANS Thermal Hydraulic Division. Feel free to contact me and let me know how we can improve Division services. Looking forward to seeing you in October.

Brian

Brian Woods, Oregon State University  
2011-2012 Division Chair  
ANS Thermal Hydraulics Division  
brian.woods@oregonstate.edu

## **Treasurer's Report**

### **2011 Division Financial Report**

#### **2011 Income**

For 2011, the Division's income of \$20,225 included the 2010 carry forward (\$17,967), our 2011 member allocation (\$2,258).

#### **2011 Division Budget (\$5,300)**

For 2011, the Executive Committee approved the following expenses at the June and November 2010 meetings:

- \$1,800 for awards and plaques (same as in 2010)
- \$3,000 for student support
  - \$500 total for student travel support to the 2010 Winter Meeting and 2011 ANS Annual Meeting (same as in 2010)
  - \$2,000 for student travel support for the 2011 Winter Meeting (total 20 THD student presenters) (increase of \$1,500 from 2010)
  - \$500 total for student travel support to the 2011 ANS Annual Meeting and Winter Meeting (donations to

- the ANS HQ) approved at the November 2010 EC meeting (additional item not in the previous year)
- \$500 for Scholarship/NEED program (same as in 2010)

#### **2011 Expenses (by August 11, 2011)**

The Division's expenses included the following:

- \$500, donation to the ANS for student travel support to the 2010 Winter Meeting (\$350) and 2011 ANS Annual Meeting (\$150)
- \$500, donation to the ANS for Scholarship/NEED program
- \$59, plaque for outgoing division chair

The balance of the THD general funding account as of August 11, 2011 was as **\$19,166**.

Si Young Lee  
2011-2012 Treasurer  
ANS Thermal Hydraulics Division  
si.lee@srnl.doe.gov

### **14<sup>th</sup> International Topical Meeting on Nuclear Reactor Thermal Hydraulics, NURETH-14 September 25-30, 2011, Toronto, Ontario, CANADA**

The 14<sup>th</sup> International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-14), held in Toronto from 25 to 30 September, 2011 was a great success. The meeting was organized by the Canadian Nuclear Society in cooperation with the Thermal Hydraulics Division of the American Nuclear Society, the International Atomic Energy Agency and the OECD Nuclear Energy Agency. The theme of NURETH-14, the first NURETH meeting held in Canada, was "Helping the Environment with Advances in Thermal Hydraulics".

NURETH, the premiere international topical meeting devoted to the advancement of knowledge in nuclear reactor thermal hydraulics and related areas, covers a wide range of topics pertaining to current and future nuclear reactors. A specific emphasis is placed on understanding the fundamentals and practical applications of thermal hydraulics that support safe operation of the current nuclear generation fleet as well as promoting development and applications for new innovative technologies for future nuclear power plants.

There were 460 registrants from over 30 countries attending the meeting, of which approximately 95 were students. More than 430 peer reviewed technical papers were presented during the five days of the conference. The Conference format consisted of 10 plenary, keynote, and invited lectures

presented during the first two days, three special topical issue panels held during the first three days and multiple parallel technical breakout sessions each day. The Conference opening included plenary lectures given by Professor Mamoru Ishii of Purdue University, the Conference Honorary Chair, and Dr Dominique Bestion of Commissariat à l'Énergie Atomique. The topical panel sessions addressed Lessons Learned from the Fukushima Accident, Issues and Future Directions of Thermal Hydraulic Research and Development, and Global Cooperation in Nuclear Education and Research. Full details of the program can be found at the conference website <http://nureth14.org/>. The proceedings of full-length papers are published on a DVD-ROM that was distributed to registrants at the meeting (requests for additional copies of the Proceedings should be directed to the Canadian Nuclear Society at [cns-snc@on.aibn.com](mailto:cns-snc@on.aibn.com)).

On Sunday evening a lively welcoming reception was held which was very well attended and continued late into the evening. Conference luncheons were held on Monday, Wednesday and Thursday and the Conference Banquet was held on Tuesday night, accompanied by a magic show presented by one of our distinguished Japanese participants who had previously performed at NURETH-13. The lunches and banquet proved very popular and promoted good social interactions amongst the participants. The Conference was fortunate to have the Honorable Joe Oliver, Minister of Natural Resources in the Government of Canada attend the Monday lunch and make remarks on Canada's energy situation. Special thanks go to our sponsors, Ontario Power Generation and AECL (Diamond sponsors), AMEC (Platinum sponsor), Dessau LVM, Hatch and McMaster University (Gold sponsors), and the McMaster Institute for Energy Studies for their generous financial sponsorship which made these events possible and contributed to the success of the conference. Thanks also go to the Canadian Nuclear Society for providing additional funding to subsidize participation of the graduate students from around the world.

Last, but not least, the work of the organizing team is gratefully acknowledged. In particular: Bill Cheung, General Co-Chair; the hard working Jovica Riznic, Technical Program Committee Chair, Chang Oh, TPC Co-Chair, the TPC members and the large number of paper reviewers; Laurence Leung, International Steering Committee Chair; Yuksel Parlatan, Canadian Organizing Committee Chair. Special thanks go to Ben Rouben, who did the hard work of detailed arranging and coordinating the event with the Toronto Hilton Hotel as well as acting as Conference Treasurer, and to the

office staff of the Canadian Nuclear Society who provided registration and logistic support.

Overall, it was an excellent meeting with high quality papers, a large number of participants, an outstanding organizing team, and an outstanding venue in a vibrant lively city. The next meeting, NURETH-15, will be held in Pisa, Italy, May 12-16, 2013.

Prepared by: John Luxat ([luxatj@mcmaster.ca](mailto:luxatj@mcmaster.ca)), Conference General Chair

### **NURETH-15**

The 15th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH) will be held May 12-17, 2013, at the Convention Hall in Pisa, Italy. NURETH is recognized as the key series of international topical meetings in the field of thermal hydraulics. NURETH provides international nuclear societies an open forum where high-quality and up-to-date information can be actively discussed and exchanged among world-renown experts. NURETH-15 is organized by the American Nuclear Society and Nuclear Research Group of San Piero a Grado (GRNSPG) of University of Pisa and will bring together international thermal hydraulic experts with their new information and research. It is our utmost pleasure to welcome you to this significant international conference.

The conference committee is planning a series of dinners and a reception. Technical tours to the Virgo facility, the Brasimone Research Centre and the TRIGA Research Reactor will be offered. Additionally a series of tours of some of the beautiful sites and places around Pisa are also being planned.

Selected papers from the conference will be published in special issues of refereed archival journals.

The conference website, [www.nureth15.org](http://www.nureth15.org), should be available soon.

### **Key Dates for NURETH-15:**

Abstract deadline: March 31, 2012

Abstract acceptance: May 31, 2012

Draft papers: August 31, 2012

End of Review: October 30, 2012

Final Paper: November 31, 2012

'Camera ready': January 31, 2013

Submitted by Alessandro Petrucci, Organizing Committee, NURETH-15

## NUTHOS-9

Thermal-hydraulics, operations, and safety are recognized as the key cross-cutting subjects for the development of advanced nuclear systems and for the operations and safety assessment of operating plants. NUTHOS has provided the international nuclear communities with an information exchange forum of engineering experience, new research results and future demands on these three subjects.

The first NUTHOS was held in Taipei in 1984 followed by Tokyo (1986), Seoul (1988), Taipei (1994), Beijing (1997), Nara (2004), Seoul (2008) and Shanghai (2010). The success of the previous conferences clearly indicates the high interests of the international nuclear community in NUTHOS and leads to the establishment of NUTHOS as one of the major international conferences in these fields. The ninth of the series, NUTHOS-9 (<http://www.nuthos-9.org>) will continue the NUTHOS tradition to provide the international nuclear industries, research institutions and academic organizations an open platform for exchanging their up-to-the-minute research results and engineering experiences.

In light of the recent tragic events at Fukushima, NUTHOS-9 includes an addition theme to address all aspects of the technical issues related to this event. Special plenary and technical sessions are organized to report on the latest analysis results, implemented corrective actions, policy changes, impacts to operating plants and new orders, and future perspectives.

It is our greatest pleasure to invite you to attend the NUTHOS-9 conference, to share the latest scientific and technical results. For complete information on submission of abstracts please visit the conference website at <http://www.nuthos-9.org>.

Submitted by Jason Chao, Co-chair, Technical Program Committee, NUTHOS-9

## Nominating Committee Report

Based on the election earlier this year, the current Division Officers and Executive Committee members are listed below.

### Current Year THD Officers (June 2011 – June 2012):

**Division Chair:** Brian Woods, [woods@ne.orst.edu](mailto:woods@ne.orst.edu)  
**Vice Chair/Chair-Elect:** Xiaodong Sun, [sun.200@osu.edu](mailto:sun.200@osu.edu)  
**Secretary:** David Aumiller, [david.aumiller.contractor@unnpp.gov](mailto:david.aumiller.contractor@unnpp.gov)  
**Treasurer:** Si Young Lee, [si.lee@srl.doe.gov](mailto:si.lee@srl.doe.gov)

### Executive Committee Members:

Brian Woods (2012) [woods@ne.orst.edu](mailto:woods@ne.orst.edu)  
Xiaodong Sun (2012) [sun.200@osu.edu](mailto:sun.200@osu.edu)  
Randall O. Gauntt (2012) [rogaunt@sandia.gov](mailto:rogaunt@sandia.gov)  
John Luxat (2012) [luxatj@mcmaster.ca](mailto:luxatj@mcmaster.ca)  
Stephen Bajorek (2012) [Stephen.Bajorek@nrc.gov](mailto:Stephen.Bajorek@nrc.gov)  
Cesare Frepoli (2012) [FrepolC@westinghouse.com](mailto:FrepolC@westinghouse.com)  
Steven A. Arndt (2013) [steven.arndt@nrc.gov](mailto:steven.arndt@nrc.gov)  
Si Young Lee (2013) [si.lee@srl.doe.gov](mailto:si.lee@srl.doe.gov)  
Fan-Bill Cheung (2014) [fxc4@psu.edu](mailto:fxc4@psu.edu)  
Yassin A. Hassan (2014) [hassan@ne.tamu.edu](mailto:hassan@ne.tamu.edu)  
Jong H. Kim (2014) [JKIM@epri.com](mailto:JKIM@epri.com)  
DuWayne L. Schubring (2014) [dlschubring@ufl.edu](mailto:dlschubring@ufl.edu)  
Hisashi Ninokata\*(2012) [hminokat@nr.titech.ac.jp](mailto:hminokat@nr.titech.ac.jp)  
Mikey C. Brady-Raap\*\* [Michaele.BradyRaap@pnl.gov](mailto:Michaele.BradyRaap@pnl.gov)  
\* ex-officio (immediate past chair) without vote  
\*\* Chair of the ANS Professional Divisions Committee

### Committee Chairs:

Program Committee – Kurshad Muftuoglu  
Honors and Awards Committee – Shripad Revankar  
Nominating Committee – Hisashi Ninokata  
Membership Committee – Hisashi Ninokata

The Nominating Committee is responsible for the nomination of THD members to leadership positions on both the Program and Executive Committees. The THD would like to encourage members interested in becoming more involved to contact one of the officers listed above. In particular, the division is usually in need of volunteers for technical meeting session organizers and paper reviewers.

**Hisashi Ninokata**, Tokyo Institute of Technology  
2011-2012 Nominating Committee Chair  
ANS Thermal Hydraulics Division  
[hminokat@nr.titech.ac.jp](mailto:hminokat@nr.titech.ac.jp)

## **Webpage Report**

The official website of the ANS Thermal Hydraulics Division is located at <http://thd.ans.org>. The THD committee membership and minutes, conference announcements, newsletters, and awards are all updated as they change throughout each year.

The division also maintains a directory of past and present active members at <http://thd.ans.org/people.html>. To update your information in this directory, please send changes in mailing address, phone number, affiliation, etc. to me. In addition, if you are active in division activities and not included on that list, please provide me with your contact information for inclusion.

I welcome any feedback on the website you have, either via e-mail or at ANS/THD meetings.

DuWayne Schubring  
THD Webmaster  
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