



INTERNATIONAL SOCIETY FOR STRUCTURAL HEALTH MONITORING OF INTELLIGENT INFRASTRUCTURE

## August 2012 ISHMII Membership Notes

### Vice President's Letter

Dear Members and Friends,

Until this month, *Membership Notes* has been written by the President of ISHMII, Prof. Farhad Ansari, from the University of Illinois at Chicago, USA. However, as you may have read in his previous President's Letters, some things in the ISHMII Council have changed as our Society grows; one example is the institution of a new Executive Committee and so, over the next few months, you will read letters written by the three Vice-Presidents who serve on that Committee. Each Vice-President has different responsibilities and interests in SHM. Today, I would like to introduce myself as Vice-President of Finance and take my turn as the Guest Editor.



The Vice-President of Finance is responsible for budgeting, reporting and financial policy development. However, we are not ready to focus on financial matters. Rather, I would like to give an overview of the upcoming ISHMII Workshop and tell you about meetings and actions in Europe that reflect developments in the SHM community. Please remember that your membership in ISHMII and attendance at ISHMII workshops and conferences supports the work of our Society including the *Journal of Civil Structural Health Monitoring*.

First, I would like to commend the work done by the current President. Dr. Ansari has my highest respect. For the last 3 1/2 years, he has made the still young ISHMII more and more visible to both experts in SHM and young players. He has also pushed the activities of the Society with his move to bring more female experts into the Society's Council and open our leadership to more young experts. This decision will be continued by the new Executive Committee.



Education in SHM is important as is sharing our perspectives and experiences. The next

upcoming educational event of the Society, the international **Civil Structural Health Monitoring Workshop (CSHM-4)**, will be held in November 2012 in Berlin ([www.cshm-4.com](http://www.cshm-4.com)) at [BAM, the Federal Institute for Materials Research and Testing](#). This is the research institution where I have spent most of my career.



CSHM-4, the fourth workshop organized by ISHMII, will focus on civil structures that have exceeded their service life. The CSHM workshop series is designed to provide a platform for extensive and thought provoking discussions. CSHM-4 will be organized in four different sessions considering the most relevant aspects of this issue. If you have not checked the workshop content yet, please have a look at the Web site.



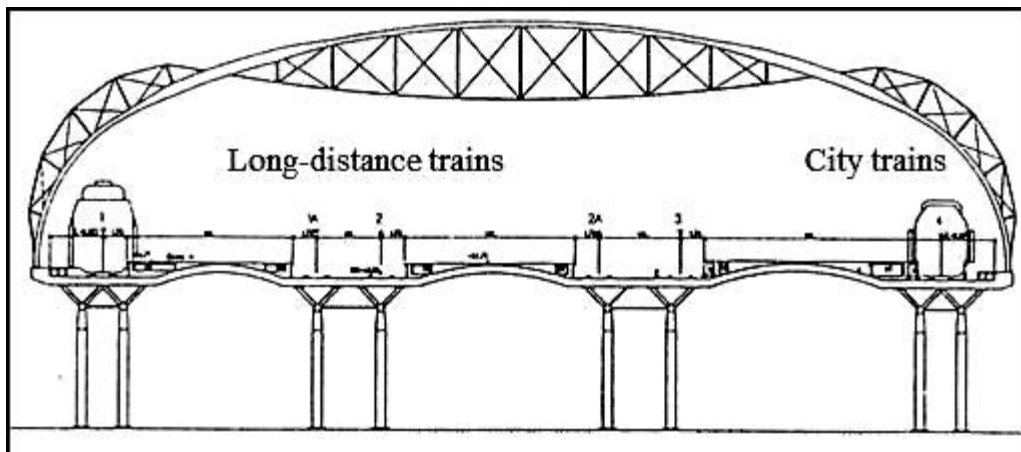
*The Verona, Italy Arena, a Roman amphitheater built in 30 AD. This prominent heritage site, home to present day opera performances, is the topic of a presentation at CSHM-4.*

CSHM-4 will open with two keynote lectures given by outstanding experts from India and USA. Each session will be introduced by an invited speaker who will draw the attention to the session's subject. There are selected oral presentations and a respectable number of poster contributions.

*SHM for the life extension of railway bridges is the topic of a Keynote address at CSHM-4. Among the older structures that grace Europe is the **Solkan Bridge**, pictured here and built over the Soča River near Nova Gorica in western Slovenia between 1900 and 1905. A 220 m stone bridge with an arch span of 85 m, it is the longest stone arch among train bridges in the world.*



Additionally, exhibitors will present their hardware solutions for conducting structural health monitoring. If you are interested in exhibiting, contact the organizing office in Berlin (details can be found at the workshop's website mentioned above).



*Berlin's New Central Railway Station will be the site of a technical tour*

All of the accepted paper contributions will be published in the workshop proceedings. The ten best papers will be presented to the *Journal of Civil Structural Health Monitoring* - ISHMII's own *Journal* published by Springer for a special edition. As guest editor of this issue of the

*JCSHM*, it is my great pleasure to invite you to take part in the competition of papers to be selected for publication. Late submissions are welcome. If you wish to submit a paper, contact me right away.



*Reliable monitoring of leaks in gas pipelines using the acoustic emission method will among the many papers presented at CSHM-4. Pictured here is a section of the Alaskan Pipeline.*

It should particularly be pointed out that the ISHMII workshops, unlike large conferences or workshops, always focus on rather narrow subjects (certainly in civil engineering disciplines). This is intended to stimulate vital discussions on highly relevant questions and problems. All participating experts are encouraged to give statements about and to discuss extensively their perspective on the subject. In each session, the expert's contributions are summarized by the working groups, which are asked to reach conclusions including those that identify areas for future research, applications and developments.



*Integration of structural health and condition monitoring into the life-cycle management of wind turbines is a workshop topic. These wind turbine are active at the Mittelgruden, Denmark windfarm.*

In order to ensure effective discussions in CSHM workshops, we do limit the number of participants. Certainly from the financial point of view there must be a balance between the amount of participant fees, expenses for running the workshop and the number of required paying participants. In fact, ISHMII is attentive to the cost of conferences and workshops. To make it

easier for you to attend at a reasonable cost and to hold the fees flat, ISHMII workshops are held in scientific environments such as universities or research institutes like BAM rather than in expensive hotels or conference centers. For this workshop in Berlin, early-bird [registration](#) will close on 31 August. The interest in attending is growing, so while registration is still open, we are certain to fill our registration goals.



Of added interest to Society members is the fact that the ISHMII Council will convene in Berlin at the same time to select a President-Elect, who will become the next President of ISHMII.



*Come to Hong Kong for SHMII-6 in December 2013*

Looking to the future, the 6th ISHMII conference (SHMII-6) will be held in Hong Kong in December 2013 and leading up to SHMII-6, the CSHM-5 workshop will be held in Ube, Yamaguchi, Japan in October 2013. That will focus on “Short and Medium Span Bridge Monitoring.” Please make your plans to attend. We will post details.

I am also pleased to let you know about recent events in the European SHM community. The 6th European Workshop on Structural Health Monitoring (EWSHM) was held in Dresden in June. This broad-based workshop series focuses not only on development and implementation of techniques and systems for civil engineering but for all types of structures in very different fields such as in aeronautics, energy generation and distribution, marine, pipelines and transportation. Although the character of the EWSHM is similar to a conference (302 attendees, 206 oral presentations this time), especially in session breaks and during the poster session, there were a number of opportunities to discuss new aspects of SHM from design through the use and

evaluation of structures. Interestingly, EWSHM was carried out in conjunction with another conference, the 1st European Conference of the Prognostics and Health Management (PHM) Society. By running these events concurrently, participants from the two communities in 32 countries were able to address issues in new ways, with added dimensions and ideas for SHM applications. The EWSHM-2014 will take place in Nantes, France.

My special subject for the past 28 years has been fiber-optic sensor technology and its use for SHM, so I will begin with a few remarks on the network activities in this measurement technology and tell you about the [European Cooperation in Science and Technology](#) (COST). You certainly know that there are more and more practical uses for fiber-optic sensors in structural engineering, geotechnical engineering, on bridges, and in tunnels, etc. They are often installed in safety-relevant structure components and help to evaluate damaged or old structures (see focus of the CSHM-4 workshop). Fiber-optic sensor systems must provide reliable data and must not lose their proper function under environmental conditions. While the principle features of fiber-optic sensors are well-known, especially for use in security and safety-relevant areas, there are a number of clearly identified technical problems yet to be resolved. Most of the significant problems are related to the temperature compensation of mechanical signals and self-controlling of their proper function. In order to address and analyze these problems, a new generation of optical-fiber sensor systems must be designed that result in fundamentally stable and reliable sensors that enhance public security and safety. To solve these tasks sustainably, it is necessary to get support from and the collaboration of experts from multidisciplinary fields who will share their knowledge in sensor development and system design and develop characterization and validation procedures.



*One US Federal Highway Administration sponsored advanced research project involved installing fiber-optic sensors along steel rebar in a beam. A Keynote presentation at CSHM-4 will be made by a member of the FHWA.*

For this purpose, previous fiber-optics related European COST activities were reorganized and extended within the new [ICT COST TD 1001](#) action “Novel and Reliable Optical Fibre Sensor Systems for Future Security and Safety Applications (OFSeSa). Begun in November 2010, the objective is to facilitate and promote the end-user adoption of state-of-the-art fiber-optic sensor systems for reliable use in safety and security-relevant applications. One of the main aspects concerns the establishment of standardized characterization and application procedures, which require a highly interdisciplinary and strongly coordinated European-wide approach. For this purpose, a special working group called “Sensor Characterization & Onsite Evaluation” was established. A key requirement placed on the companies that participate is that they provide high-quality products can be manufactured, tested, specified and validated according to international guidelines. There are four study groups within this working group: sensor interfaces, test procedures, on-site implementation and validation, and standardization. This international COST action runs until November 2014 and is open for all experts worldwide from industry, research and consulting who are interested in this

collaborative process. As Vice Chair of this European Action, it is my intention to build a closer link between ISHMII and COST TD 1001 as well as similar international groups and actions.

On behalf of Dr. Ansari and the Vice Presidents of ISHMII, Dr. Jinping Ou and Dr. James Brownjohn, I hope that all of the readers of *Membership Notes* will develop a keen interest in ISHMII. Every interested expert and student is welcome.

With best wishes to all,

***Wolfgang Habel***



**Come to CSHM-4**

**Berlin, Germany**

**November 6-8, 2012**

***SHM Systems Supporting Extension of  
the Structure's Service Life***

***Visit the [CSHM-4 Web Site](#) for  
Program Information and to Register***

CSHM-4 is an official Workshop of ISHMII.

**ANNOUNCEMENT**

## AFTAB MUFTI MEDAL AWARD FOR BEST PAPER in the JCSHM

The Editorial Board of the *Journal of Civil Structural Health Monitoring* is pleased to announce a Best Paper competition from among the papers published in the *Journal* since its inauguration in 2011. The papers considered will include those published through the end of 2012.

Each author of the Best Paper will receive the Aftab Mufti Medal during the 6th International Conference on Structural Health Monitoring of Intelligent Infrastructure (SHMII-6), in December 2013 in Hong Kong.



*Nominated authors must be members of ISHMII.*

Submit articles at [Editorial Manager](#)

[Apply for Membership](#)

## WORKSHOPS AND CONFERENCES

2012



**SMT 2012 New York City**  
LaGuardia Marriott Hotel  
**August 21-24, 2012**

[SMT 2012 \(Structural Materials Technology\) NDT/NDE for Highways and Bridges.](#)

2013



**MoDeRn International  
Conference and  
Workshop,  
Luxembourg  
March 19-21, 2013**



**OSMG 2012**  
Nanjing University, China  
October 2012

**4th OSMG-2012: International Forum on Opto-electronic Sensor-based Monitoring in Geo-engineering.**

**OSMG 2012 On-Line Registration**



**SAUS2012**  
Nanjing, China  
November 23-25, 2012

**3rd International Symposium on Advances in Urban Safety**

### **Call for Papers**

Prospective authors are invited to submit abstracts (250 words maximum) no later than October 20, 2012. Full papers are due November 20, 2012.

The proposed topics include structural engineering, bridge engineering, earthquake engineering, disaster reduction and mitigation, multi-hazard risk and vulnerability assessment, etc. Details are available at [www.saus2012.com](http://www.saus2012.com). All inquiries relating to the Symposium should be addressed to the [Professor Jian ZHANG](#), International Institute of Urban System Engineering, Southeast University, Nanjing, China.

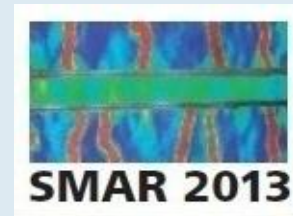


**PLSE 2012 Hong Kong**  
December 5-7, 2012

**First International Conference on Performance-based and Life-cycle Structural Engineering (PLSE 2012).**

**International Conference and Workshop - Monitoring in Geological Disposal of Radioactive Waste.**

Abstracts for Papers now being considered



**SMAR 2013 Istanbul**

**bul, Turkey**  
**September 9-11, 2013**

**2nd Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures.**



**7NSC 2013**  
**Oakland, California**  
**May 20-22, 2013**

**7th National Seismic Conference on Bridges & Highways**

### **Call for Papers**

*Prospective authors are invited to submit abstracts no later than August 15, 2012*

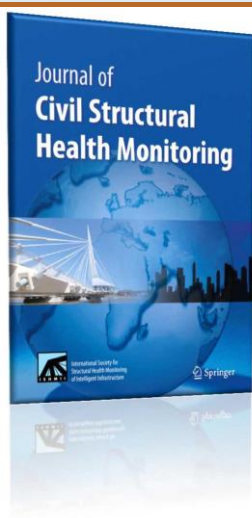
With the theme of *“Bridge Resilience for Earthquakes and Other Natural Hazards”* the conference’s objective is to increase awareness of natural hazards and to enhance the technical expertise of



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engineering professionals so they can mitigate the risk of failure or damage to bridges and highways.

Additional information is also available from Jerome O'Connor, P.E., Conference Coordinator at [conf7NSC@buffalo.edu](mailto:conf7NSC@buffalo.edu).



**JCSHM**  
**Volume 3-4**  
is now available on-line for members

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when a new volume is published

*Just click on the Journal's homepage at Springer and enter your e-mail address in the box on the lower right side*

***ISHMII is Proud to  
be an  
Outreach Partner  
of 7NSC.***



**SHMII-6 Hong  
Kong  
December 2013**

ISHMII invites you to  
attend the 6th  
International Conference  
on Structural Health  
Monitoring of Intelligent  
Infrastructure, SHMII-6.

SHMII-6 2013 is  
organized by the  
Department of Civil and  
Structural Engineering,  
The Hong Kong  
Polytechnic University.  
Details are available at  
[shmii6.2013@polyu.edu.hk](mailto:shmii6.2013@polyu.edu.hk).

***Conservation  
of Heritage***

## CREDITS AND APPRECIATION

ISHMII extends its thanks to those who make photos and graphics available.

Icons from BAM, courtesy of their Web site are linked to  
<http://www.bam.de/en/index.htm>

Photo of the Verona Arena is found at <http://whatafy.com/verona-arena-italy-arena-di-verona.html>.

Photo of the Solkan Bridge is found at [http://sv.wikipedia.org/wiki/File:Nova\\_Gorica\\_Solkan\\_Eisenbahnbruecke\\_ueber\\_die\\_Soca\\_120720069\\_1600x1062\\_88.jpg](http://sv.wikipedia.org/wiki/File:Nova_Gorica_Solkan_Eisenbahnbruecke_ueber_die_Soca_120720069_1600x1062_88.jpg)

Photo (top) and graphic of the new Berlin Railway Station are courtesy of BAM.

Center photo of the New Berlin Railway Station is found at  
[http://en.wikipedia.org/wiki/File:Berlin\\_Hauptbahnhof\\_%28Lehrter\\_Bahnhof%29\\_Absenkung\\_B%C3%BCgelbau\\_%E2%80%93\\_Detail.jpg](http://en.wikipedia.org/wiki/File:Berlin_Hauptbahnhof_%28Lehrter_Bahnhof%29_Absenkung_B%C3%BCgelbau_%E2%80%93_Detail.jpg)

Photo of the Alaskan Pipeline is found at  
<http://www.solarstorms.org/Spipeline.html>

Photo of wind turbine farm is found at  
<http://www.middelgrunden.dk/middelgrunden>

Photo of FHWA project is found at  
<http://www.fhwa.dot.gov/publications/publicroads/06may/images/mccrae3.jpg>

[pg](#)

## ***Structures***

**The  
Proceedings of  
CSHM-3 are  
now available  
in the  
Knowledge &  
Education  
Center at  
ISHMII.org**

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New preferred email address? Please let us know that, too.