

IMO-WMU Global R & D Forum on

# Emerging Ballast Water Management Systems

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## Forum Programme

27 - 29 January 2010

Pre-Conference Expert Workshop

26 January 2010



World Maritime University  
Malmö, Sweden

## Venues

**The Pre-Conference Workshop will take place at  
World Maritime University  
Citadellsvägen 29  
S-211 18 Malmö**

**The Forum will be held at  
St Gertrud's Restaurant and Conference Centre,  
Östergatan 7b,  
211 25 Malmö**

**The formal Conference Dinner on 27 January will be held at  
Malmö Town Hall  
Stortorget  
Malmö**

**The Reception on the evening of 28 January will be held at the  
World Maritime University.  
Participants will be taken by bus from St Gertrud's at 17.30,  
and will be returned to the city centre (Radisson BLU),  
leaving the University at 19.30.**

## Tuesday 26 January

- 09.00-10.00 *Pre-Registration and refreshments*
- 10.00-12.00 Pre-conference workshop on providing equivalency between IMO Guidelines G8/G9 approved treatment systems and alternative management options
- 12.00-13.15 *Lunch*
- 13.15-15.00 Pre-conference workshop (continued)

## Wednesday 27 January

- 09.00-10.00 *Registration and refreshments*
- 10.00 Welcome address Dr Björn Kjerfve,  
President, World Maritime University
- 10.15 Welcoming remarks Dr Jose Matheickal,  
Chief Technical Advisor, GloBallast Partnerships, IMO
- Session Chair Mr Andrew Hudson, Principal Technical Adviser,  
UNDP, International Waters and Cluster, Water  
Governance Programme
- 10.30 Keynote address **Ballast Water Management – an overview of the  
regulatory process**  
Mr Dandu Pughiuc, Head, Biosafety Section, IMO
- 11.00 Keynote address **BWM hurdles and the need for innovative  
approaches: An industry perspective**  
Captain Tey Yoh Huat, Chairman of the  
IMO-GloBallast Global Industry Alliance Task Force,  
Vice President, APL CO. Pte. Ltd.
- 11.30 Keynote address **Ballast Water Treatment Systems: ‘old’ and ‘new’  
ones**  
Dr Marcel Veldhuis, Senior Scientist, Royal  
Netherlands Institute for Sea Research
- 12.00 Panel discussion
- 12.45 *Lunch*



**Thursday 28 January**

**Session 2: Progress on conventional Ballast Water treatment systems**

Chaired by Professor Neil Bellefontaine, WMU

- 09.00            Keynote address            **Evaluating, installing and testing a Unitor BWT system and some reflections about industry challenges ahead**  
Mr Iver Iversen, Business Development Director, Wilhelmsen Ships Equipment AS
- 09.30                            **Microwaves + Ultraviolet + Ozone Ballast Water Treatment**  
Dr Alex Taube, R&D Director, Technical Solutions and Innovations P/L, Australia
- 09.50                            **Thermal Aqua-Filtration (TAF) system: A new concept of environment- friendly BWMS applying “retrieved heat” to eliminate the living organisms**  
Kazuhiko Koike (Hiroshima University), Nobuhiko Fujiki (Taiko Sangyo Co., Ltd.), Kenji Yamane (National Maritime Research Institute, Osaka), Yoshiyuki Inohara, Izuo Aya (Taiko Sangyo Co., Ltd.)
- 10.10                            **Development of Novel VUV photocatalysis system for ballast water treatment**  
Yansheng Yin, Lihua Dong, Li Zhang, Chunhua Fan, Tao Liu, Yun Zhou, Dongsheng Wang, Yunlian Xu, Baojia Xiao. Institute of Marine Materials Science and Engineering, Shanghai Maritime University and Shanghai Haida Assets Management Co.Ltd
- 10.30            *Poster Session*            *Refreshments*
- 11.50                            **Beyond-Ballast: Integrating shipboard environmental technologies: ozone as a single-source system for treating multiple waste streams including ballast**  
Sung-Jin Park, Jung-In Bin, Ki-Wook Kim, Seung-Je Yoon NK Co. Ltd Busan, Republic of Korea.  
Presented by Steve Raaymakers, Eco-Strategic
- 12.10                            **Applicability of approved ballast water management systems that make use of active substances or preparations under the Ballast Water Regulations in Victoria, Australia**  
Dr Marlos De Souza, Program Leader - Ballast Water & MARPOL 73/78 Environmental Strategies Unit, EPA Victoria, Australia
- 12.30            *Lunch*

*Staff from Respartner Travel Agency will be present from 12.30 to 16.00, to assist you with any changes to your travel plans*

## Session 3: Testing, Verification and Monitoring of Ballast Water

Chaired by Professor Olof Lindén, WMU, and Mr Fredrik Haag, IMO

- 13.30            Keynote address            **A summary of findings from the first 35 ballast water treatment evaluations – are we on the right track?**  
Dr Tim Bowmer, Chairman, GESAMP
- 14.00                            **Monitoring of bacteria in ballast water**  
Helge Liltved, Norwegian Institute for Water Research (NIVA)
- 14.20                            **Ballast water treatment testing and discharge toxicity**  
Mario Tamburri, Greg Ziegler, Dan Fisher, Lance Yonkos and Kitae Rhie, Maritime Environmental Resource Center, University of Maryland and Kyung Hee University
- 14.40                            **A novel approach to determine ballast water vitality and viability after treatment**  
Peter Paul Stehouwer, Frank Fuhr and Marcel Veldhuis, Royal Netherlands Institute for Sea Research
- 15.00                            **New data experiments using viability stains on treated ballast water for IMO compliance monitoring**  
Kent A. Peterson, Chief Executive Officer, Fluid Imaging Technologies, Inc., USA
- 15.20            *Poster Session*            *Refreshments*
- 16.00                            **How to take a representative ballast water sample?**  
Dr Stephan Gollasch (GoConsult) and Matej David, University of Ljubljana, Faculty of Maritime Studies and Transport
- 16.20                            **Factors influencing organism counts in ballast water samples and their implications**  
Frank Fuhr, Jan Finke, Peter Paul Stehouwer, Swier Oosterhuis & Marcel Veldhuis, Royal Netherlands Institute for Sea Research
- 16.40                            **Validation protocols for performance testing and scaling ballast water treatment systems employing UV disinfection and filtration**  
Jim Cosman, Manager, Regulatory Affairs TROJAN UV
- 17.00                            **The use of mesocosms in risk assessment of active substances in ballast water treatment**  
Klaas Kaag, Wageningen Imares Afdeling Milieu, Netherlands
- 17.45                            *Reception hosted by World Maritime University (Citadellsvägen 29, Malmö) A bus will take delegates to and from the University.*

## Friday 29 January

09.00 **Report from the pre-conference workshop**

10.00 *Refreshments*

10.30 Plenary Session  
Moderator: Dr Jose Matheickal

Panel Discussion on Ballast Water Management:

### **What have we learned and the way forward**

Dr Tim Bowmer, Chairman, GESAMP  
Mr Iver Iversen, Wilhelmsen Ships Equipment AS  
Mr Jan Linders, RIVM  
Professor Michael Parsons, University of Michigan  
Mr Dandu Pughiuc, IMO  
Mr Marcel Veldhuis, NIOZ  
Mr Chris Wiley, Chariman of the IMO MEPC Ballast  
Water Working Group

Conference Conclusions and Recommendations

12.00 *Closing of the Forum* Message from Mr Miguel Palomares,  
Director, Marine Environment Division, IMO

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*Morning, lunch & afternoon refreshments will be served at St Gertrud's, and have been very  
Kindly sponsored by Wilhelmsen Ships Equipment AS.*



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## The Organizers



WMU

The World Maritime University (WMU) was established in 1983 by the International Maritime Organization, a United Nations specialised agency. Our mission is to serve the global maritime community as a centre of excellence and IMO's apex institution for high-level maritime education and research. For more information, please visit <http://www.wmu.se>



The GEF-UNDP-IMO GloBallast Partnerships (GBP) Programme aims to assist countries to reduce the risk of aquatic bio-invasions mediated by ships' ballast water and sediments. For more information, please visit [http:// globallast.imo.org](http://globallast.imo.org)



The Global Industry Alliance (GIA) is an innovative public-private partnership between the IMO GloBallast Partnership Programme and leading maritime companies. Current partners include BP Shipping, Daewoo Shipbuilding & Marine Engineering Co., Ltd, APL and Vela Marine International. The GIA aims at catalyzing innovations and change in the field of ballast water management, while providing business benefits for the industry. For more information, please visit <http://globallast.imo.org>



Ballast Water Opportunity is a North Sea Region Programme aiming to support the ISR industry to enter the market for innovative products. For more information, please visit <http://www.northsearegion.eu/ivb/projects/details/&tid=89>

