Peer-reviewed

Proceedings and Abstracts Book

Advanced Materials *World Congress*

23-26 August 2015
Viking Line Cruise, Stockholm, Sweden

Edited by
Ashutosh Tiwari

Parallel Symposiums

- World Technology Forum
- Smart Energy Technologies
- Biosensors and Bioelectronics
- European Graphene Forum

Organised and supported by

IAAM International Association of Advanced Materials

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VBRI PRESS AB
Teknikringen 4A,
58330 Linköping, Sweden

The Advanced Materials World Congress provides an international platform to discussrecent advancements of the growing field of advanced materials science and technology. This book is peer-reviewed and devoted to one broad subject and the multi disciplinary aspects presented in the Advanced Materials World Congress during
23rd-26thAugust 2015, Stockholm, Sweden

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E-mail: contact@vbripress.com
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ISBN:978-91-88252-00-5
DOI: 10.5185/amwc.2015

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About Advanced Materials World Congress

Advanced Materials World Congress (AMWC) is a four-day international event organised by International Association of Advanced Materials and hosted by Linköping University and VBRI Press AB during 23-26 August 2015 on the Baltic Sea from Stockholm-Helsinki-Stockholm by the Viking Line Cruise M/S Mariella. The goal of congress was to provide a global platform for researchers and engineers coming from academia and industry to present their research results and activities in the field of fundamental and interdisciplinary research of materials science and technology.

Topics and Parallel Symposiums

- Nanomaterials and Nanotechnology
- Biomaterials and Biodevices
- Energy Materials and Harvesting
- Optical, Electronic and Magnetic Materials
- Structural Materials
- Computational Materials
- Composite and Ceramic Materials
- Constructional and Engineering Materials
- Environmental and Green Materials
- European Graphene Forum
- Smart Energy Technologies
- Biosensors and Bioelectronics
- World Technology Forum

Editor Biography



Ashutosh Tiwari is Secretary General, International Association of Advanced Materials; Chairman and Managing Director of Tekidag AB (Techtoday innovations); Associate Professor and Group Leader, Smart Materials and Biodevices at the world premier Biosensors and Bioelectronics Centre, IFM-Linköping University; Editor-in-Chief, Advanced Materials Letters and Advanced Materials Reviews; a materials chemist and docent in the Applied Physics with the specialization of Biosensors and Bioelectronics from Linköping University, Sweden. Dr. Tiwari has several honorary and visiting positions worldwide including visiting professor at the National Institute for Materials Science, Japan; University of Jinan, University of Jiangsu, China; and DCR University of Science and Technology, Academic Chairman of Dr. G. P. Law College , and Founder Director, Vinoba Bhave Research Institute, India. Just after completed his PhD, he joined as young scientist at National Physical Laboratory, India and later moved to University of Wisconsin, USA for postdoctoral research. He obtained various prestigious fellowships including Marie Curie, The European Commission; JSPS (regular and bridge fellow), Japan; SI, Sweden; and from INSA, CSIR & DST, India. His research focus is on the design and advanced applications of cutting edge stimuli-responsive materials for smart biodevices. He is actively involved in the undergraduate, post graduate and PhD teaching in the field of intelligent materials, nanomaterials and atom-thick materials for biomedical, biosensing and bioenergy devices. Dr. Tiwari is recipient of prestigious 'The Nano Award', 'Innovation in Materials Science Award' and 'Advanced Materials Medal' for his notable contributions to smart materials and biomedical nanotechnology. He has more than 100 peer-reviewed primary research publications in the field of materials science and nanotechnology with h-index of 30. He has edited/authored more than 25 books on advanced materials and technology for esteemed publishers. He is the editor of the Advanced Materials series that is published by Scrivener Publishing and co-published with John Wiley & Sons; and a founder member and chair of Advanced Materials World Congress, European Advanced Materials Congress, Smart Materials and Surfaces, Global &European Graphene Forum, International Conference on Material Science and Technology and World Technology Forum famous international events of materials science and technology and also bilateral events such as Sweden-Japan Nano, Indo-Swedish Advanced Materials Forum, etc. Prof. Tiwari serves as scientific evaluator and member of panels of experts to various governmental and non-governmental agencies; member of PhD committee, and have been invited for plenary, keynote and invited lectures in the more than 20 countries. His current research on zipper-like bioelectronics, nanobioreactors, programmable super-thin bioelectronics, smart theranostics, and affinity/MIP surfaces realized by the integration of smart architecting has emerged as a versatile platform for building a new age technological outlets to tackle key challenges in medical, energy supply and environmental issues.

JOURNAL
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ISBN 978-91-88252-00-5

Welcome Message

Dear Delegates,

Welcome to the *Advanced Materials World Congress* (AMWC 2015)!

The *Advanced Materials World Congress* series began life in China, in May 2011, with 1,200 delegates from 36 different countries. Then we moved to Cesme in Turkey for the 2nd meeting, held in September 2013, and hosted by the Izmir Institute of Technology. There, 42 different countries were represented. The beautiful coastal town of Çeşme inspired us both scientifically and to create the perfect conference venue for the next meeting. Now it is my pleasure to welcome you to the 5th anniversary of the *Advanced Materials World Congress*, here in Sweden. The conference will "depart" from Stockholm, 23 August 2015, returning on 26 August. This time we are going to enjoy our science while cruising on the Baltic Sea. What better way to ensure the maximum interaction and most vibrant discussion than to place all aboard a single vessel while sailing across the Baltic through the balmy Scandinavian summer.

AMWC, 2015 is a four-day international event organised by the *International Association of Advanced Materials (IAAM)* and VBRI Press AB from 23-26 August 2015. We will cruise from Stockholm to Helsinki and back again aboard the Viking Cruise Line's M/S Mariella (the world's largest cruise ferry when it was launched), providing the ideal platform for researchers and engineers coming from academia and industry, and from across the globe, to present their research results in the field of materials science and technology. There were twenty six sessions with four parallel symposiums and three poster sessions including 3 plenary talks, 26 keynote lectures, 22 invited lectures, 135 oral presentations, welcome cocktail and congress gala dinner.

The congress will cover the full span of advanced materials from nano to macro and from composite and ceramic to optical and bio. Key applications areas will be biodevices, energy, electronics and constructional materials, while paying attention to the environment and the introduction of green materials wherever possible.

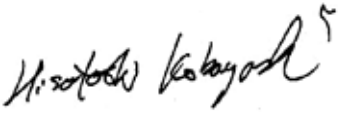
So I hope that you really enjoy this exciting and timely meeting as we pass more than 30,000 islands through the Stockholm archipelago and our presenters deliver a matching number of inspiring facts, figures, concepts and demonstrations.

Have a great Congress!

With very best wishes,



(Professor Ashutosh Tiwari)
Secretary General, IAAM



(Professor Hisatoshi Kobayashi)
President, IAAM



(Professor Anthony P. F. Turner)
Linköping University, Sweden

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Linkoping University, Sweden

Hisatoshi Kobayashi
National Institute for Materials Science, Japan

Ashutosh Tiwari
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Scientific Program

Advanced Materials

World Congress

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Venue : Baltic Sea

(Stockholm-Helsinki-Stockholm)

on

Viking Line Cruise, Stockholm, Sweden

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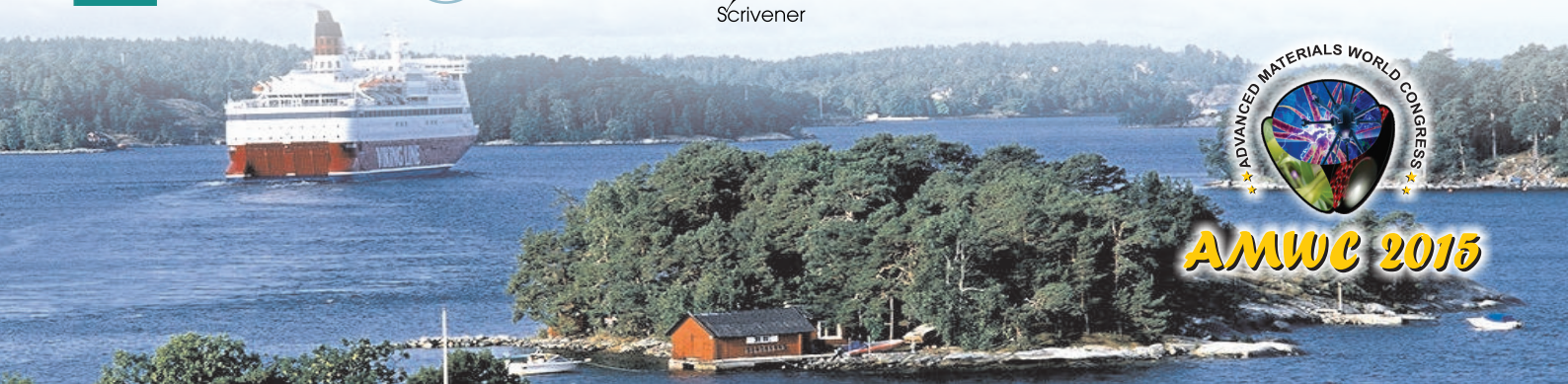


Important Information

1. The program will be running as per **Swedish time**
2. **Drop your luggage** in Music Meister behind the inauguration hall (Deck 7). You will get cabin access after lunch (check-in time of cabin: 13:30 – 14:00) on 23rd August and check out from the cabin on 25th August at 8.30 am (store luggage in Music Meister at Deck 7).
3. **Notepad and pen** will be provided in each session during the congress.
4. Please collect **the bag and conference materials** from AMWC office after opening ceremony (Time: 12:00 - 13:45) at conference deck 8.
5. **If you need receipt of your payment, presentation and participation certificate,** please ask AMWC office on 23rd before 20:30.
6. If you have booked for **congress gala dinner** and the **trip to Helsinki and Stockholm**, please collect your tickets from AMWC office on 23rd August before 20:30.
7. Please **download AMWC detailed program, abstract and proceedings** from our website - www.vbripress.com/amwc/pages/page/program
   "Save environment and Green practices" **We appreciate to use digital** copy!! However, if you need print (hard copy) you can manage by yourself before the congress. Congress organizers will not provide any hard copy.
8. Poster pins will be available at **poster help desk besides preparation room, conference deck 8**. If you need any assistance to hang your poster on poster board, you can ask AMWC staff at poster help desk.
9. **The copy of presentation (power point or PDF)** will be uploaded to computer intranet of ***Preparation Room*** **at conference deck 8**. Please provide/upload your presentations on following schedule:
   - **23rd August** (after-noon sessions) **during 12.00-13.30.**
   - **24th August any time before 8.30 morning.**
   - **25th August any time before 8.30 morning.**
10. The **children's club** will be accessible for your kids.
11. **Accompanying persons can enjoy health club, tax-free shopping,** etc. on board.
12. We have also **exclusive cultural activities during 23rd and 24th August until 02.00 both days in the fun club at deck 7.**

SCIENTIFIC PROGRAM

23 - 26 August 2015

23rd August, Sunday (Day - 1)

09.00-10.30 **Check-in and Registration at Viking Line Terminal, Stadsgården, 116 30 Stockholm, Sweden**

10.30-11.00 **Boarding at M/S Mariella Viking Cruise and Drop Luggage in Fun club**

11.00-12.00 **Main Session, Venue: Seaside Auditorium, Deck 7**

Chair(s): Hisatoshi Kobayashi, Japan and **Ashutosh Tiwari, Sweden**

11.00-11.15 Welcome Ceremony and Felicitation

11.15-12.00 **AMWC Opening Lecture: Anthony P.F. Turner, Sweden** - Print on paper – still advanced material

12.00-13:30 **Lunch to the restaurant "Buffet", Deck 7**

Poster Setup, Conference Centre, Deck 8

13.30-14.00 **Cabin access**

14.00-16:30 **Parallel Sessions 1-2-3-4-5, Venue: Conference Centre, Deck 8**

Session I	Session II	Session III	Session IV	Session V
Venue: Auditorium Marina A	**Venue: Auditorium Marina B**	**Venue: Seaside Auditorium A**	**Venue: Seaside Auditorium B**	**Venue: Seaside Auditorium C**
Nanomaterials and Nanotechnology	**Biomaterials and Biodevices**	**Smart Energy Technologies**	**Computational Materials**	**Biosensors and Bioelectronics**
Chair: Ingemar Lundstrom, Sweden	**Chair: Kazunori Kataoka, Japan**	**Chair: Li-Chyong Chen, Taiwan**	**Chair: Rajeev Ahuja, Sweden**	**Chair: Anthony P. F. Turner, Sweden**
Co-chair: Xuemei Wang, China	Co-chair: Ivo Safarik, Czech Republic	Co-chair: Andrii Rybalochka, Ukraine	Co-chair: Poomani Penny Govender, South Africa	Co-chair: Jih-Jen Wu, Taiwan
14.00-14.30 - IAAM Medal Lecture: Jeong-Woo Choi, Korea - Bioprocessing device based on metalloroteins/DNA/nanoparticle hybrid material	**14.00-14.30 - Keynote Lecture: Hisatoshi Kobayashi, Japan** - New material concept for corneal stromal regeneration	**14.00-14.30 - IAAM Medal Lecture: Bingqing Wei, USA**- Carbon nanostructures for energy storage applications	**14.00-14.30 - IAAM Medal Lecture: Hans Ågren, Sweden** - Modeling the optical, electronic and magnetic properties of molecules in heterogeneous environment	**14.00-14.30 - IAAM Scientist Award Lecture: Soon Gil Yoon, Korea** - Zinc nanoparticles for antibacterial activity of smart-phone panels
14.30-14.50 - Invited Lecture: Mohammad Alenezi, Kuwait - Enhancing photocatalytic properties of nanostructures by controlling their exposed facets	**14.30-14.50 - Invited Lecture: Bora Garipcan, Turkey** - The effect of fmoc-Amino acid modification of reduced graphene oxide/Ti surfaces on osteoblast functions	**14.30-14.50 - IAAM Scientist Award Lecture: Chee Wee Liu, Taiwan** - High mobility Ge channel transistors	**14.30-15.00 - IAAM Scientist Award Lecture: Maytal Caspary Toroker, Israel** - Recent advances in modeling transition metal oxides for solar energy applications	**14.30-15.00 - IAAM Scientist Award Lecture: Keon Jae Lee, Korea** - Self powered flexible electronic systems
14.50-15.10 - Invited Lecture: Jannie Swarts, South Africa - Silver and platinum catalysts for oxidation hydrogenation and aromatisation: From two dimensional models on silicon wafers to three-dimensional zeolite-supported systems	**14.50-15.10 - Invited Lecture: Ales Iglic, Slovenia** - Electrostatic interactions of proteins and cells with titanium dioxide nanostructures	**14.50-15.10 - Invited Lecture: Mikael Syväjärvi, Sweden** - Silicon carbide as platform for energy applications	**15.00-15.30 - Keynote Lecture: Natarajan Murugan, Sweden** - Computational health-care materials	**15.00-15.30 - Keynote Lecture: Onur Parlak, Sweden** - Stimuli-encoded bioelectronic systems
15.10-15.30 - Invited Lecture: Filiz Kuralay, Turkey - Stimuli responsive surfaces for biomedical applications	**15.10-15.30 - Invited Lecture: Suryyani Deb, Sweden** - Smart nano-theranostics for arterial thrombosis	**15.10-15.30 - Invited Lecture: Koushik Biswas, India** - Doped $LaGaO_3$ as electrolyte for SOFC	**15.30-16.00 - Keynote Lecture: Klaudio Bari, United Kingdom** - CFD simulation to the performance composite impeller using star CCM+ software	**15.30-15.45 - Oral: Volodymyr Chegel, Ukraine** - Plasmonic nanochips for biosensors applications
15.30-15.45 - Oral: Abdullah Khalil, UAE - Electrospun copper oxide nanostructures: Synthesis and applications	**15.30-15.45 - Oral: Ewa Kijea aezska, Poland** - Nano-engineered co-electrospun fibrous matrices as a model of bio-active molecules releasing scaffolds for bone tissue engineering	**15.30-15.45 - Oral: R. Vasant Kumar, UK** - High energy density lithium batteries using 3-D carbon scaffolds	**16.00-16.15 - Oral: Tarun Kundu, India** - First-principle study of the optical properties of pure and doped $LaNiO_3$	**15.45-16.00 - Oral: Nidhi Chauhan, India** - Construction of an amperometric glycated hemoglobin biosensor based on Au-Pt bimetallic nanoparticles and poly(indole-5-carboxylic acid) modified Au electrode
15.45-16.00 - Oral: Sofia Iconomopoulou, Greece - Carbon nanotube based textiles for high risk professions	**15.45-16.00 - Oral: Halil Aydin, Turkey** - PU/TCP bone adhesives and substitutes for load bearing applications	**15.45-16.00 - Oral: Erkan Aydin, Turkey** - Spray deposition of copper indium sulfide based thin film solar cells on flexible steel foil	**16.15-16.30 - Oral: Chengyuan Wang, China** - Modelling on the young's modulus of ZnO NWs	**16.00-16.15 - Oral: Hazim EL-Sharif, UK** - On site detection of biologicals using MIP-Based sensors
16.00-16.15 - Oral: Ruslan Mariychuk, Slovakia - Synthesis of silver and gold nanoparticles by using of extracts of selected medicinal plants	**16.00-16.15 - Oral: Tomoko Hashimoto, Japan** - Immobilization of antibacterial peptides to silk fibroin-based biomaterials	**16.00-16.15 - Oral: Z. Q. Ma, China** - Ultra-thin inversion layer and quantum tunneling in silicon-based heterojunction solar cells		**16.15-16.30 - Oral: Namrata Pal, India** - Impedance-based immunosensor for rapid detection of bacterial cells
16.15-16.30 - Oral: Sudhir Chandra, India - Synthesis of nanostructured tungsten oxide by thermal oxidation method and its integration in sensor for VOCs detection	**16.15-16.30 - Oral: Memed Duman, Turkey** - Characterization of modified gold nanoparticles for competitive affinity chromatography method	**16.15-16.30 - Oral: Odireleng Ntwaeaborwa, South Africa** - Synthesis and characterization of multicolour and white light emitting $R_2SiO_5:Dy^{3+}$ (R = La Gd Y) phosphors		

16.30-17.00 **Coffee Break and Poster Session, Venue: Conference Centre, Deck 8**

17.00-19:30 **Parallel Sessions 1-2-3-4-5, Venue: Conference Centre, Deck 8**

Session I	Session II	Session III	Session IV	Session V
Venue: Auditorium Marina A	**Venue: Auditorium Marina B**	**Venue: Seaside Auditorium A**	**Venue: Seaside Auditorium B**	**Venue: Seaside Auditorium C**
Nanomaterials and Nanotechnology	**Biomaterials and Biodevices**	**Smart Energy Technologies**	**Optical, Electronic and Magnetic Materials**	**Advanced Hybrid Materials**
Chair: Jeong-Woo Choi, Korea	**Chair: Hisatoshi Kobayashi, Japan**	**Chair: Bingqing Wei, USA**	**Chair: D. Kurt Gaskill, USA**	**Chair: Li-Chyong Chen, Taiwan**
Co-chair: Sub Reddy, UK	Co-chair: Mehrdad Rafat, Sweden	Co-chair: Keon Jae Lee, Korea	Co-chair: S. J. Dhoble, India	Co-chair: Yongmei Zheng, China
17.00-17.30 - IAAM Scientist Award Lecture: Xixiang Zhang, Saudi Arabia - Magneto transport properties of three-dimensional flexible and conductive interconnected graphene networks	**17.00-17.30 - Keynote Lecture: Tetsuji Yamaoka, Japan** - Small diameter acellular vascular grafts with 2mm inner diameter and 30cm length	**17.00-17.30 - Keynote Lecture: Rajeev Ahuja, Sweden** - Role of catalysts in hydrogen storage materials	**17.00-17.30 - Keynote Lecture: Hendrik Swart, South Africa** - Practical applications of phosphor materials	**17.00-17.30 - Keynote Lecture: Yogendra Mishra, Germany** - Fabrication of porous and flexible 3D ceramic nanonetworks by flame transport synthesis approach
17.30-17.45 - Oral: Priyadarshini Thiyam, Sweden - Effect of anisotropy on CO_2 and CH_4 adsorption on atomically thin gold films	**17.30-18.00 - Keynote Lecture: Hirak Patra, Sweden** - Translational theranostics: Keys and regulators	**17.30-17.50 - IAAM Medal Lecture: Jih-Jen Wu, Taiwan** - Oxide nanoarchitectures for solar cells	**17.30-17.50 - Invited Lecture: Zidan Wang, Hong Kong** - Topological metals and semimetals	**17.30-17.45 - Oral: Pushpendra Tripathi, India** - Thermal and optical properties of Ni doped ZNO nanoparticles
17.45-18.00 - Oral: Alice Tesarikova, Czech Republic - Selected properties of LDPE PP and surlyn/clay nanocomposites barrier films	**18.00-18.15 - Oral: Xiaoli Liu, China** - Hybrid carbon nanodots-Fe_3O_4 nanoparticles as a triple fluorescent-CT-MRI probe	**17.50-18.10 - Invited Lecture: Subhash Kondawar, India** - Ternary polymer nanocomposites: Novel electrodes for supercapacitors	**17.50-18.10 - Invited Lecture: Sergiy Valyukh, Sweden** - Liquid crystal diffractive optical elements	**17.45-18.00 - Oral: Nuno Gama, Portugal** - Acoustic and sound absorption properties of crude glycerol and coffee grounds derived polyurethane foams
18.00-18.15 - Oral: Byeong-Soo Bae, Korea - Metal nanowire embedded flexible transparent conducting composite film with robust performance stability	**18.15-18.30 - Oral: Mehmet Corman, Turkey** - Molecularly imprinted cryogel cartridges for specific filtration and rapid separation of interferon alpha	**18.10-18.30 - Invited Lecture: Andrii Rybalochka, Ukraine** - Metrology of energy efficient lighting systems	**18.10-18.30 - Invited Lecture: Ivo Safarik, Czech Republic** - Magnetically responsive biological materials and their applications	**18.00-18.15 - Oral: Aleksandrs Marinins, Sweden -** Induced anisotropy of poly-3-hexylthiophene nanofibers
18.15-18.30 - Oral: Pravin More, India - Classification and study of near-surface region of active material for gas detection using X-ray photoelectron spectroscopy	**18.30-18.45 - Oral: Jennifer Deignan, Ireland** - Wearable textile strain sensors for measurement of spinal flexion	**18.30-18.45 - Oral: Sofie Haldrup, Denmark** - High electrokinetic energy conversion efficiency in charged polymeric membranes	**18.30-18.45 - Oral: Monika Wyszomirska, Australia** - Electric discharge assisted mechanical milling (EDAMM) in complex oxides synthesis	**18.15-18.30 - Oral: Erdogan Ozgur, Sweden** - Porous functional nanofilms for designing bioinspired sensor surfaces
18.30-18.45 - Oral: Shuqin Li, China - MWCNTs/PVDF Nanocomposites with high dielectric properties	**18.45-19.00 - Oral: Yoshiaki Hirano, Japan** - Design of hybrid materials with peptide-synthetic polymer-silica	**18.45-19.00 - Oral: Levent Semiz, Turkey** - Hydrogen generation from chemical hydrides with fast kinetics	**18.45-19.00 - Oral: Jen-Sue Chen, Taiwan** - Dual-polarity bipolar resistive switching characteristics of thermally oxidized copper thin films	**18.30-18.45 - Oral: Jafarsadegh Moghaddas, Iran** - Thermal conductivities of silica aerogel composite insulating material
18.45-19.00 - Oral: Yuvraj Malghe, India - Synthesis of C/ZnO/CdS nano composite with enhanced visible light photo catalytic activity	**19.00-19.15 - Oral: Vito Rizzi, Italy** - Insertion of photoactive chlorophyll-a on chitosan based biofilms opening new horizon in antimicrobial food packaging	**19.00-19.15 - Oral: Michitaka Ohtaki, Japan** - Selective phonon scattering in ZnO-based bulk thermoelectric oxides	**19.00-19.15 - Oral: Abhijit Roy, India** - Design of soft optofluidics devices using solid-fluid interfacial and bulk properties	**18.45-19.00 - Oral: Tarek Bedair, Korea** - Improvement of in-vivo restenosis inhibition of biodegradable coated drug-eluting stent through surface modification
19.00-19.15 - Oral: Anıl İncel, Turkey - Fabrication of stress sensitive polymeric nanofibers and fibrous films	**19.15-19.30 - Oral: Abbas Teimouri, Iran** - Nano-composite of silk fibroin-chitosan/nano diopside for tissue engineering application: Fabrication and morphology	**19.15-19.30 - Oral: Emre Kaan Can, Turkey** - Photoelectrochemical properties of pyrolytically grown Indium Sulfide thin films	**19.15-19.30 - Oral: Yin-Gang Wang, China** - Zero biased and resonant magnetoelectric effect in magnetostrictive/piezoelectric multilayered composites	**19.00-19.15 - Oral: Nishant Kumar, India** - Enhanced visible emission from nanocrystalline Nd doped ZnO thin films
19.15-19.30 - Oral: Pankaj Tripathi, India - Dynamical behavior of quantum dots (QDs) dispersed in nematic liquid crystal				**19.15-19.30 - Oral: Seksak Asavavisithchai, Thailand** - Structure and mechanical properties of different Al foam polymer interpenetrating phase composites

19.30-20.15 **Poster Session, Venue: Conference Centre, Deck 8**

20.15-21.30 **Dinner to the restaurant "Buffet", Deck 7**

SCIENTIFIC PROGRAM

23 - 26 August 2015

24th August, Monday (Day - 2)

06.30-08.00 **Sea Breakfast, Deck 7**

08.00-08.30 Poster Setup, Venue: Conference Centre, Deck 8

08.30-10.00 **Main Session, Venue: Seaside Auditorium, Deck 7**

08:30-09:15 **Felicitation and Award Ceremony** by IAAM bearers - Hisatoshi Kobayashi and Ashutosh Tiwari

09:15-10:00 **Advanced Materials Award Lecture: Kazunori Kataoka, Japan** - Supramolecular nanosystems from functionalized block copolymer for smart targeted therapy of intractable diseases

Chair: Anthony P. F. Turner, Sweden

10.00-10.30 **Coffee Break and Poster Session, Venue: Conference Centre, Deck 8**

10.30-12.00 **Parallel Sessions 1-2-3-4, Venue: Conference Centre, Deck 8**

Session I	Session II	Session III	Session IV
Venue: Auditorium Marina A	**Venue: Auditorium Marina B**	**Venue: Seaside Auditorium A**	**Venue: Seaside Auditorium B**
Nanomaterials and Nanotechnology	**Biomaterials and Biodevices**	**Environment and Green Materials**	**European Graphene Forum**
Chair: Xixiang Zhang, Saudi Arabia	**Chair: Ales Iglic, Slovenia**	**Chair: Ingemar Lundstrom, Sweden**	**Chair: Ashutosh Tiwari, Sweden**
Co-chair: Byeong-Soo Bae, Korea	Co-chair: Bora Garipcan, Turkey	Co-chair: Chee Wee Liu, Taiwan	Co-chair: Jannie Swarts, South Africa
10.30-10.50 - IAAM Scientist Award Lecture: Xuemei Wang, China - Ultrasensitive in vivo bio-imaging of cancers based on novel nanoscaled probes	**10.30-10.45 - IAAM Scientist Award Lecture: Yasushi Tamada, Japan** - Changes of the outermost surface of silk fiborin films by ethanol treatments	**10.30-10.45 - Oral: Sanhita ray, India -** Green immobilization of graphene using biofilms	**10.30-10.40**- Opening remarks by EGF chairmans - **Prof. Ashutosh Tiwari** and **Prof. Mikael Syväjärvi**
10.50-11.10 - Invited Lecture: Furong Tian, Ireland - Surface enhanced raman scattering with gold nanostar as an early diagnostic tool for oral cancer	**10.45-11.00 - Oral: Mehrdad Rafat, Sweden** - Rational development of a bioengineered carbon nanotube-reinforced cardiac patch	**10.45-11.00 - Oral: Dai Yaodong, China** - Nuclear emergency wastewater treatment with prussian blue / carbon nanotube sponge absorbing material and performance	**10.40-11.00 - Keynote Lecture: D. Kurt Gaskill, USA** - Applications driven development of graphene for sensors
11.10-11.30 - Invited Lecture: Haruhisa Kato, Japan - Characterization of secondary nanoparticle structure using pulsed field gradient nuclear magnetic resonance	**11.00-11.15 - Oral: Laura Cordoba, Portugal** - Hybrid bi-layered multifunctional coatings to control biodegradation of commercial Mg alloys	**11.00-11.15 - Oral: Ana Marta-nez-Hernaındez, Mexico** - Membranes based on polyurethane and keratin materials obtained from chicken feathers to remove Cr (VI) of water	**11.00-11.30 - Keynote: Aleksandr Lebedev, Russia** - Epitaxial graphene grown on 6H-SiC (0001) substrate: size confinement effect
11.30-11.45 - Oral: Ulviya Bunyatova, Turkey - Multifunctional PVA/ODA-MMT-poly (MA-alt-1-octadecene)-g-graphene oxide e-spun nanofiber semiconductors and their response to bone cancer cells	**11.15-11.30 - Oral: Masaya Yamamoto, Japan** - Design of a sugar-responsive sacrificial template to create cell scaffolds with vascularized channel structures	**11.15-11.30 - Oral: Manoj Pandey, India** - Copper and iron exchanged montmorillonite clay: A promising catalyst for benzoyloxylation of N N-Dimenthylaniline	**11.30-11.45 - Oral: Byeong-Ju Park, Korea** - Wrinkle-free monolayer graphene transferred onto the Ti adhesion layer
11.45-12.00 - Oral: Yongmei Zheng, China - Bioinspired multi-gradient surfaces with smart wettability for water collection/repellency	**11.30-11.45 - Oral: Krishna Bisetty, South Africa** - Construction of chymotrypsin and L-amino acid oxidase dual enzyme based biosensor for the detection of neotame	**11.30-11.45 - Oral: Arenst Andreas Arie, Indonesia** - Activated carbons from KOH activation of salacca peels as low cost potential adsorbents for dye removal	**11.45-12.00 - Oral: Chong-yun Park, Korea** - Fabrication and characterization of graphene transistor with gate dielectrics of h-BN/graphene/h-BN structure
	11.45-12.00 - Oral: Yuichi Ohya, Japan - Functionalization of biodegradable polymeric micelles by coating with polyion complex	**11.45-12.00 - Oral: Parag Nimishe, India** - Photoluminescence study of novel LiLa $(WO_4)_2$:Pr^{3+} red emitting phosphor for eco-friendly LEDs	**12.00-12.15 - Oral: Gao Feng Zeng, China** - Sharp dehydration of alcohols over graphene oxide framework (GOF) hybrid membrane

12.00-13.20 **Lunch to the restaurant "Buffet", Deck 7**

13.30-15.30 **Sightseeing to Helsinki**

Parliament Building, Museum of Modern Art

The stunningly designed Rock Church

Olympic Stadium from the 1952 games

Helsinki Lutheran and Uspenski Orthodox Cathedrals

15.30-16.30 **Coffee Break and Poster Session, Venue: Conference Centre, Deck 8**

16.30-19.30 **Parallel Sessions 1-2-3-4, Venue: Conference Centre, Deck 8**

Session I	Session II	Session III	Session IV
Venue: Auditorium Marina A	**Venue: Auditorium Marina B**	**Venue: Seaside Auditorium A**	**Venue: Seaside Auditorium B**
Nanomaterials and Nanotechnology	**World Technology Forum**	**Structural, Constructional and Engineering Materials**	**European Graphene Forum**
Chair: Debes Bhattacharyya, New Zealand	**Chair: Anthony P. F. Turner, Sweden**	**Chair: Rosario Gerhardt, USA**	**Chair: Seong-Chan Jun, Korea**
Co-chair: R. Vasant Kumar, UK	Co-chair: Jiuzhou Zhao, China	Co-chair: Koushik Biswas, India	Co-chair: Mohammad Alenezi, Kuwait
16.30-17.00 - Keynote Lecture: Li-Chyong Chen, Taiwan - Graphene oxides and their nano-hybrids with metals and metal sulfides for solar fuels and CO_2 conversion	**16.30-17.00 - Keynote Lecture: S. J. Dhoble, India** - Synthesis of power saving materials for near UV excited LED applications	**16.30-17.00 - Keynote Lecture: Istvan Halasz, USA** - Elucidating causes of hydrophobicity difference between siliceous Y zeolites	**16.30-16.55 - Graphene Award Lecture: Ashutosh Tiwari, Sweden** - Smart graphene materials - tools for super-thin biotechnology
17.00-17.15 - Oral: Yimin Chao, UK - Effects of ligand doping on the electrical conductivity of organic- silicon nanocomposite materials based on terthiophene capped silicon nanoparticles	**17.00-17.20 - Invited Lecture: Biplab Paul, Sweden** - Tailoring electronic and phononic properties: Towards ideal thermoelctricity	**17.00-17.15 - Oral: Nicola Everitt, UK** - Nanoindentation investigates the effect of grain size and chemical composition across melt-pools produced during selective laser manufacture of aluminium alloy	**16.55-17.15 - Invited Lecture: Debes Bhattacharyya, New Zealand** - Influence of surface topology and thickness of reduced graphene oxide film on its electrical conductivity
17.15-17.30 - Oral: Sandra Noehren, Germany - Structural characterization of Si microwire anodes by in-situ synchrotron radiation	**17.20-17.40 - Invited Lecture: Yasushi Iwata, Japan** - EELS imaging studies for the electronic states of silicon cluster superlattice	**17.15-17.30 - Oral: Nawawi Chouw, New Zealand** - Dynamic behaviour of natural fibre reinforced polymer-concrete bridge piers	**17.15-17.30 - Oral: Carlos Velasco-Santos, Mexico** - Thermo-mechanical properties of nylon 6,6 polymer nanocomposites with functionalised carbon materials of 1 and 2 Dimensions: Electrospinning and injection molding
17.30-17.45 - Oral: Xiaodan Hu, China - The synthesis and characterization of Fe_3O_4/bentonite nanocomposite	**17.40-18.00 - Invited Lecture: Pramod Kumar Jain, India -** Improvement of durability of hot mix asphalt by chromium containing solid wastes from leather industry	**17.30-17.45 - Oral: Ami Kohri, Japan** - Experimental investigation of X-rays stress measurement device for expansion joints	**17.30-17.45 - Oral: Won Ho Jo, Korea** - High performance supercapacitor electrode from conducting polymer/graphene composite
17.45-18.00 - Oral: Kaho Kamada, Japan - Control of charging energy in carbon nanotube single electron transistor by electric-double-layer gate with ionic liquid	**18.00-18.15 - Oral: Rui Wang, China** - Bamboo charcoal/Fe_3O_4-KNO_3 composite as efficient and recoverable catalyst for biodiesel production	**17.45-18.00 - Oral: Basem Alsawy, UK** - Multiscale deformation and failure in aluminium alloy 6082-T6: Experiments and modelling	**17.45-18.00 - Oral: Timofey Chekalkin, Russia** - Effect of gases on the surface formation of gradient structure in porous TiNi-based alloy
18.00-18.15 - Oral: Hyung-Jin Choi, Korea - Finding of new materials for both electromagnetic shielding and antibacterial effect using multi-layer thin films	**18.15-18.30 - Oral: Hiroshi Endo, Japan** - Bioinspired multifunctional wrinkle suraface	**18.00-18.15 - Oral: Osama Hassan, Sweden** - Experimental verification of static buckling of partially composite beams and beam columns	**18.00-18.15 - Oral: Sibel Ozkaya, Turkey** - Polypyrrole on graphene a density functional theory study
18.15-18.30 - Oral: Yoko Matsuzawa, Japan - Reversible tuning of solubility of single-walled carbon nanotubes using a photofunctional dispersing agent	**18.30-18.45 - Oral: Rafael Torres Mendieta, Spain** - Fabrication of high stable gold nanofluid by pulsed laser ablation in liquids	**18.15-18.30 - Oral: Erkut Findik, Turkey** - Fracture toughness of talc filled polypropylene block copolymer composites stored long term without any daylight	**18.15-18.30 - Oral: Po-Yuan Teng, Taiwan** - Ultrasensitive graphene image sensor
18.30-18.45 - Oral: Evgen Prokhorov, Mexico - Determination of optimum concentration of conductivity nanoparticles in polymer nanocomposites	**18.45-19.00 - Oral: Jagriti Narang, India** - Electrochemical impedimetric detection of anti-HIV drug taking gold nanorods as a sensing interface	**18.30-18.45 - Oral: Jitendra Ramteke, India** - Ultrasonic investigation of excess thermo acoustic parameters in binary liquid mixture at various temperatures	**18.30-18.45 - Oral: Mahesh Matt, India** - Thickness optimization of As_2Te_3 thin film as back contact for CdTe solar cell
18.45-19.00 - Oral: Danushika Manatunga, Sri Lanka - Facile synthesis and characterization of natural polysaccharide hydroxyapatite nanobiocomposite	**19.00-19.15 - Oral: Nitika thakur, India** - Effect of organic manures and biofertilizers in combination with technological intervention through different systems of cultivation on quality attributes of tomato (*cv. Solan lalima*) grown under mid-hill conditions of Himachal Pradesh	**18.45-19.00 - Oral: Zdenka Prochazkova, Czech Republic** - Recycled plastic material properties defined by nanoindentation	**18.45-19.00 - Oral: Stefanie Freitag, Germany** - Engineered graphene characterized by means of highly sensitive and 3D microscopic methods
19.00-19.15 - Oral: Alexander Schoth, Germany - Tailoring the structure of polymer/inorganic hybrid nanomaterials	**19.15-19.30 - Oral: Wu Weite, Taiwan** - Effects of different refining slag and CaO content on desulfurization and dephosphorization during steelmaking process	**19.00-19.15 - Oral: Levent Sozen, Turkey** - Effect of calcium carbonate filler content on the hoop stress of high density polyethylene pipes	**19.00-19.15 - Oral: Néstor David Espinosa-Torres, Mexico** - Theoretical survey of luminescence observed in nanostructured silicon rich oxide films attributed to annealing processes
19.15-19.30 - Oral: Naoki Toyama, Japan - Control of pore size of hollow silica-alumina composite spheres prepared using L(+)-arginine and their activity for hydrolytic dehydrogenation of ammonia borane		**19.15-19.30 - Oral: Rajendra Sonkawade, India** - Fabrication of organo-mettalic composites as a radiation sensor	**19.15-19.30 - Oral: Mohsen Adeli, Iran** - A facial method for controlled functionalization and post functionalization of graphene in ambient conditions to produce a wide range of nanodevices

19.30-20.30 **Coffee Break and Poster Session, Venue: Conference Centre, Deck 8**

20.30-23.30 **Gala dinner to the restaurant "Buffet", Deck 7**

SCIENTIFIC PROGRAM

23 - 26 August 2015

25th August, Tuesday (Day - 3)

07.00-08.00 **Sea Breakfast, Deck 7**

08.00-08.30 **Poster Setup, Venue: Conference Centre, Deck 8**

08.30-09.00 **Check out from Cabins and store luggage in music meister, Deck 7**

09.00-10.00 **Main Session, Venue: Seaside Auditorium, Deck 7**

Chair: Kazunori Kataoka, Japan

09:00-10:00 **AVI Award Lecture: Ingemar Lundström, Sweden** - The Nobel Prize

10.00-10.30 **Coffee Break and Poster Session, Venue: Conference Centre, Deck 8**

10.30-12.30 **Parallel Sessions 1-2-3-4, Venue: Conference Centre, Deck 8**

Session I	Session II	Session III	Session IV
Venue: Auditorium Marina A	**Venue: Auditorium Marina B**	**Venue: Seaside Auditorium A**	**Venue: Seaside Auditorium B**
Nanomaterials and Nanotechnology	**Biomaterials and Biodevices**	**Composite and Ceramic Materials**	**European Graphene Forum**
Chair: Furong Tian, Ireland	**Chair: Tetsuji Yamaoka, Japan**	**Chair: Hendrik Swart, South Africa**	**Chair: Mikael Syväjärvi, Sweden**
Co-chair: Mohammad Alenezi, Kuwait	Co-chair: Hirak Patra, Sweden	Co-chair: Subhash Kondawar, India	Co-chair: Klaudio Bari, UK
10.30-11.00 - Keynote Lecture: Ravindra Pandey, USA - Stability and electronic properties of phosphorene-based 2D materials	**10.30-11.00 - Keynote Lecture: Lokman Uzun, Sweden** - Bioinspired biomaterials surfaces for improved biocompatibility and recognition capability	**10.30-11.00 - IAAM Medal Lecture: Rosario Gerhardt, USA** - Detection of interfaces via impedance spectroscopy analysis	**10.30-10.55 - IAAM Scientist Award Lecture: Seong-Chan Jun, Korea** - The new growth technique for ZnO nanorods/graphene hybrid structures for photocatalyst
11.00-11.15 - Oral: Jingwen Wang, China - Electroactive strain properties of acrylic resin elastomer based nanocomposite films	**11.00-11.15 - Oral: Nurefsan Gokalp, Turkey** - Immobilization of *Candida antarctica* lipase onto an amorphous silica support by cross-linking method for ring-opening polymerization of ε-caprolactone	**11.00-11.15 - Oral: Surya Veerendra Prabhakar Vattikuti, Korea** - Al_2O_3 supported MoO_3, MoS_2 composite catalysts synthesized by induce wetness impregnation route	**10.55-11.10 - Oral: Umit Ertem, Turkey** - An Analogue 'black hole' model in graphene
11.15-11.30 - Oral: Anand Krishnan, South Africa - Copper boron nitride catalyzed three component coupling reaction: A convenient synthesis of α-aminophosphonates	**11.15-11.30 - Oral: Md. Ashaduzzaman, Sweden** - On/off-switchable dual responsive bioelectrode	**11.15-11.30 - Oral: Dagmar Merinska, Czech Republic** - The influence of the clay and compatibilizator concentration on the PE PP and PE/EVA copolymer properties	**11.10-11.25 - Oral: Subimal Majee, Sweden** - Printable graphene ink produced by liquid-phase shear ex-foliation of graphite
11.30-11.45 - Oral: Yihua Zhu, China - Iron carbide nanoparticles encapsulated in porous N-doped carbon hybrids as efficient oxygen reduction electro catalysts in acid media	**11.30-11.45 - Oral: Tomohiko Yamazaki, Japan** - G-quadruplex structure improved immunostimulatory effects of CpG oligodeoxynucleotides	**11.30-11.45 - Oral: Deoram Nandanwar, India** - Synthesis and characterization of silver nanoparticles embedded conducting polymer nanocomposites	**11.25-11.40 - Oral: Norbert Nickel, Germany** - Large area CVD grown graphene for silicon based solar cells
11.45-12.00 - Oral: Tapas Laha, India - Understanding the effect of multi-phase microstructure on mechanical properties of Al based bulk metallic glass nanocomposites	**11.45-12.00 - Oral: Taira Sato, Japan** - Preparation of hydroxyapatite/collagen anti-decay paste using 3-glycidoxypropyltrimethoxysilane	**11.45-12.00 - Oral: Prantasi Tjahjanti, Indonesia** - Analysis of mechanical testing of composite material with reinforcement natural fibre water hyacinth (*Eichhornia crassipes*)	**11.40-11.55 - Oral: Meryem Derya Ozdemir, Turkey** - Transport properties of intrinsic and dirty graphene: The role of interface roughness scattering
12.00-12.15 - Oral: Jianhua Shen, China - Preparation and oxygen reduction reaction catalytic performance of nitrogen/sulfur double doped hollow carbon microspheres	**12.00-12.15 - Oral: Mostafa Mabrouk, South Africa** - Effect of dopamine on the physicochemical bioactivity and biodegradation of PVA-PCL-PEG hollow porous microspheres prepared by a double emulsion solvent evaporation technique	**12.00-12.15 - Oral: B. Sudhakar Reddy, India** - Emission analysis of the Eu^{3+}ions doped stronsium yttrium tungstate powder ceramics	**11.55-12.10 - Oral: Baki Ozdincer, UK** - Graphene-activated carbon hybrid material as a catalyst support for low temperature polymer electrolyte fuel cells
12.15-12.30 - Oral: Refaat Mahfouz, Egypt - Effects of surfactant and gama irradiation on the synthesis of CdO nanoparticles by thermal decomposition of anhydrous cadmium acetate	**12.15-12.30 - Oral: Cansu Ulker, Turkey** - Poly (ε-caprolactone) synthesis by a novel enzymatic catalyst: *Candida antarctica* lipase (CALB L) immobilized on a modified silica-based material by physical adsorption	**12.15-12.30 - Oral: Talha Kesemenli, Turkey** - Effect of particle size of talc on the fracture toughness of high density polyethylene stored long term without any daylight	**12.10-12.25 - Oral: Felix Rösicke, Germany** - Electrochemical maleimidation of graphene quantified by QCM and vibrational spectroscopies
			12.25-12.30- Closing remarks by EGF chairmans - **Prof. Ashutosh Tiwari** and **Prof. Mikael Syväjärvi**

12.30-13.30 **Lunch to the restaurant "Buffet", Deck 7**

Poster Session, Venue: Conference Centre, Deck 8

13.30-14.45 **Parallel Sessions 1-2-3, Venue: Conference Centre, Deck 8**

Session I	Session II	Session III
Venue: Seaside Auditorium C	**Venue: Seaside Auditorium B**	**Venue: Seaside Auditorium A**
Electronic Materials	**World Technology Forum**	**Composite and Ceramic Materials**
Chair: Zidan Wang, Hong Kong	**Chair: Ravindra Pandey, USA**	**Chair: Yogendra Mishra, Germany**
Co-chair: Filiz Kuralay, Turkey	Co-chair: Nicola Everitt, UK	Co-chair: Yin-Gang Wang, China
13.30-13.45 - Oral: Padma Padmanabhan, India - Factors influencing ion transport in solids: Insights from MD simulations	**13.30-13.45 - Oral: Khamlich Salaheddine, Morocco** - Implementation of NIOS II multiprocessors in FPGA: An application of the speech processing	**13.30-13.45 - Oral: Jiuzhou Zhao, China** - Solidification of immiscible alloys under the effect of the electric current pulses
13.45-14.00 - Oral: Wayne Francis, Ireland - Electro-guided self-propllled ionic liquid droplets as vessels for chemical reactions	**13.45-14.00 - Oral: Iskender Isik, Turkey** - How a geomaterial nanostructure affects its performance and price	**13.45-14.00 - Oral: Gnanavel B K, India** - Properties of concrete manufactured using ceramic slag
14.00-14.15 - Oral: Sungsoo Kim, Korea - Feasibility test of direct capillary-pen writing for patterning of vapor phase-polymerized poly(3,4-ethylenedioxythiophene) nanofilm	**14.00-14.15 - Oral: Prasanta Kalita, India** - Design and development of bioassay for detection of endotoxin in water and human serum	**14.00-14.15 - Oral: D. L. SUN, China** - First-principles study of the effect of boron and phosphorus dopants on the elastic modulus of silicon crystal
14.15-14.30 - Oral: Hou-Hsein Chu, Taiwan - Hydrogel prepared using prepolymers of siloxane-containing carbamate	**14.15-14.30 - Oral: Abdulazeez Lawal, Nigeria** - Synthesis and utilisation of carbon nanotubes for fabrication of electrochemical biosensors	**14.15-14.30 - Oral: Víctor Sánchez Orendain, México** - Evaluation of a cellular glass ceramic produced using sludge of drinking water treatment plants for NOx reduction

15.00-15.20 **Young Scientists Award, Closing Ceremony and Coffee, Venue: Conference Centre, Auditorium Marina, Deck 8**

15.30 **Leave to Viking Cruise, Stockholm, Sweden**

26th August, Wednesday (Day - 4)

08.00-09.00 **IAAM Steering Committee Meeting**, Best Western Plus Time Hotel, Stockholm

09.00-10.00 **AM Satellite Meeting**, Best Western Plus Time Hotel, Stockholm

10.30-15.00 **Scientific Discussion, Networking and Social Activities**

Tour to Nobel Museum and Stockholm City

Guided tour to Nobel Museum

At the Nobel Museum, you will learn more about the Nobel Prize and its founder, as well as the Nobel Laureates and their creative endeavors.

12.00-01.30 **Lunch at the Nobel Museum**

Guided tour to Stockholm City Hall: Venue of the Nobel Prize Banquet

The Royal Palace, Östermalm

Gamla Stan (Old Town)

Långholmen and The Royal Djurgården

Stockholm's islands and waters, Fjällgatan

Stockholm is world famous for being stunningly picturesque and sits on 14 islands. It is surrounded by water and presents parkland, forest and beautiful views. This guided sightseeing bus tour passes all the must-see attractions in Stockholm with modern, air conditioned luxury coaches. The tour is perfect for passengers who want a non-stop tour without unnecessary stops on the way. If possible we make a stop at Fjällgatan, where the view of Stockholm's islands and waters is truly wonderful. During this tour you will get to know Stockholm and history of the city.

POSTER PRESENTATION PROGRAM

23 - 25 August 2015

23rd August, Sunday (Day - 1)

Poster Evaluation Jury: Ingemar Lundstrom (Sweden), Li-Chyong Chen (Taiwan), Krishna Bisetty (South Africa) and Nawawi Chouw (New Zealand)

12.00-13.30 **All Posters Setup, Venue: Conference Centre, Deck 8**

16:30-17:00 **Poster Session I -** Advanced Nanomaterials and Nanotechnology

19:30-20:15 **Poster Session II -** Advanced Nanomaterials and Nanotechnology

P-01 **Yuvraj Malghe, India** - Synthesis, characterization and gas sensing behavior of Nano sized Fe_2O_3

P-02 **Vito Rizzi, Italy** - Photoactivity and photoprotection of chlorophyll-a based gold nanoparticles

P-03 **Subhash Kondawar, India** - Transport properties of multi-walled carbon nanotubes based conducting polythiophene/polyaniline nanocomposites

P-04 **Hale Berber Yamak, Turkey** - Synthesis of waterborne graphene/polymer nanocomposites by using in situ emulsion polymerization and investigation of colloidal and film properties of nanocomposites

P-05 **Richard Haverkamp, New Zealand** - Mechanical behaviour of collagen fibrils with strain

P-06 **Young Sang Lee, Korea** - Fabriaction and evaluations of hydrogen permeation on BZY-Pd/Ag composites membrane

P-07 **Mukta Kulkarni, Slovenia** - Effect of water content in the electrolyte during anodization to form different titanium dioxide nanostructures

P-08 **Milos Beran, Czech Republic** - Immobiltion of endoinulinase on polyhydroxybutyrate nanofibers

P-09 **Giin-Shan Chen, Taiwan** - Electroless plating of Cu-Mn alloy thin films with self-forming capacity and enhanced thermal stability

P-10 **Jiri Bednar, Czech Republic** - Preparation of photocatalytic core-shell lamellar nanostructures ZnO(Si)ZnO with high sorption surface

P-11 **Yi-Lung Cheng, Taiwan** - Effect of annealing temperature on electrical and reliability characteristics for stacked structure of HfO_2 and porous low-k films

P-12 **Nelcy Mohallem, Brazil** - Synthesis of γ-lithium aluminate using freeze drying

P-13 **Jin-Hyo Boo, Korea** - Self template 3D gold nanoparticles on boron nanowire array as plasmonic material

P-14 **Muhammad Iqbal, France** - Submicron polymeric particle preparation for theranostic applications

P-15 **Jin-Hyo Boo, Korea** - Conductivity enhancement of PEDOT: PSS thin films for organic solar cell application

P-16 **Krasimir Ivanov, Bulgaria** - Application range of nanocatalysts for CO oxidation in mainstream cigarette smoke

P-17 **Mero-Lee Cornelius, South Africa** - Synthesis of fly ash based zeolites with hierarchical morphology from a clear fused fly ash extract

P-18 **Nelson Camargo, Brazil** - Sintering and characterization of a hydroxyapatite matrix and hydroxyapatite matrix nanocomposites

P-19 **Jeung Hee An, Korea** - Tumor targeting of hederagenin loaded magnetic nanoparticles for anti-cancer drug delivery

P-20 **Nadiah Zafar, France** - Elaboration of sponge like biodegradable cationic particles via double emulsion solvent evaporation

P-21 **Rajat Gupta, India** - Characterization of insulin in presence of folic acid

P-22 **Talha Jamshaid, France** - Fabrication of submicron magnetic latex particles towards lab on chip

P-23 **Meng Jiy Wang, Taiwan** - Catalytic effects of multilateral nanoparticles on biosensing

P-24 **Setumo Motloung, South Africa** - Effects of In^{3+} doping concentration on the $MgAl_2O_4$: x% In^{3+} nanophosphor

P-25 **Carlos Velasco-Santos, Mexico** - Gamma-irradiated SiO_2 nanoparticles to improve concrete properties

P-26 **Martin Onani, South Africa** - Luminescent magnetic nanoparticles for biomedical applications

P-27 **Florin Vasiliu, Romania** - Development of exchange spring-like nanomagnets in pseudobinary (Fe, Co)-Pt alloys

P-28 **Francis Dejene, South Africa** - Influence of selenization time on the structural properties and in depth compositional features of two step grown Cu(In, Ga)Se_2 thin films

P-29 **Hussien Abbas, Egypt** - Nano sized Fe doped strontium titanate for photocatalytic degradation of dibutyl phthalate under visible light

P-30 **Fereshteh Chekin, Iran** - Preparation of nickel oxide nanoparticles in presence of gelatin and surfactants

P-31 **Fereshteh Chekin, Iran** - Green synthesis and characterization of cobalt oxide nanoparticles and catalytic behavior

P-32 **Murat Baisariyev, Kazakhstan** - The effect of growth temperature and substrate type on physical and morphological characteristics of GaN thin films synthesized in hot-wall CVD furnace

20.15-20.30 Meeting of Poster Jury

24th August, Monday (Day - 2)

Poster Evaluation Jury: Anthony P. F. Turner (Sweden), D. Kurt Gaskill (USA), Rosario Gerhardt (USA) and Yasushi Iwata (Japan)

08.00-08.30 **All Posters Setup, Venue: Conference Centre, Deck 8**

10.00-10.30 **Poster Session I** - Advanced Energy Materials and Technology, Advanced Biomaterials and Biodevices, Advanced Optical Materials and Methods

15.30-16.30 **Poster Session II** - Advanced Energy Materials and Technology, Advanced Biomaterials and Biodevices, Advanced Optical Materials and Methods

19:30-20:15 **Poster Session III** - Advanced Energy Materials and Technology, Advanced Biomaterials and Biodevices, Advanced Optical Materials and Methods

Advanced Energy Materials and Technology

P-01 **Sang-Chul Jung, Korea** - Application of liquid phase plasma process to the synthesize ruthenium oxide/activated carbon composite as dielectric material for supercapacitor

P-02 **Yeu-Long Jiang, Taiwan** - a-SiCx:H p-i-n solar cells deposited by pulsed plasma

P-03 **Parth Bhatt, India** - Investigating the degradation rate of perovskite material under humid conditions for solar photovoltaic applications

P-04 **Dong Min Kim, Korea** - The catalytic activity of cathode with sputtered cobalt with graphene oxide on carbon paper

P-05 **Dong Min Kim, Korea** - Facile preparation of graphene/Pt composites and their application in dye-sensitized solar cells

P-06 **Dong Min Kim, Korea** - Electrochemical impedance spectroscopy for the characterization of RF-sputtered Gd-doped ceria(GDC) thin film for micro SOFC

P-07 **Sharil Fadli Mohamad Zamri, Malaysia** - Consequences of SiO_2 and HCl-SiO_2 filler on the ionic conductivity and film formation of PMMA/ENR 50 electrolytes

P-08 **Soon-Chul Ur, Korea** - Effect of Ni oxide addition on the electrochemical properties of $LiFePO_4$ /C cathode materials for Li ion battery

P-09 **Brahim Aissa, Canada** - Morphology and optical dependence of carbon nanomaterials-based hybrid organic photovoltaic cells

P-10 **Woosung Lee, Korea** - The effect of the number of anchoring groups on the performance of triphenylamine and phenothiazine dyes in dye-sensitized solar cells

P-11 **Ayman El-Amin, Egypt** - Structural and electrical properties of doped $LaGaO_3$ for solid oxide fuel cell application

P-12 **Rosana Badía-Laíño, Spain** - A systematic assessment of dispersion stability of functionalized SiO_2 in oil and their potential tribological properties

P-13 **Seong-Chan Jun, Korea** - Simple fabricated high performance 3D structured supercapacitor electrode with hybrid materials

P-14 **Franco Amado, Brazil** - Synthesis and characterisation of polyaniline(Pani) membranes for fuel cell

P-15 **Ravisha Bhatia, Sweden** - Modulated-electrobiocatalysis of graphene bioelectrode

P-16 **Niharika Rawat, Sweden** - Studies on electrochemical properties of enzyme modified layered graphene on SiC for biofuel application

Advanced Biomaterials and Biodevices

P-17 **Tetsuji Yamaoka, Japan** - Preparation of implantable autologous acellular skin prepared from melanocytic nevus by high hydrostatic pressue

P-18 **Vito Rizzi, Italy** - 4-thiothymidine characterization in aqueous solution and future perspectives for application in chitosan-based laminated biodevices for the detection of ROS

P-19 **Hannah Wells, New Zealand** - Microstructure and looseness in bovine leather

P-20 **Elena Kalmykova, Russia** - Determination of parameters of binding lipopolysaccharide with chitozane and its N-acetylated derivative

P-21 **Paola Semeraro, Italy** - Use of a lipophilic natural pigment chlorophyll a for photodynamic therapy applications

P-22 **Katrin Unger, Austria** - Light responsive hydrogels produced with initiated chemical vapor deposition

P-23 **Danielle Bruen, Ireland** - Contact lenses for real-time colorimetric sensing of glucose

P-24 **Eri Shima, Japan** - Properties of novel bone hemostat by random co-polymer of ethylene oxide and propylene oxide with sugar-containing apatite

P-25 **ilven Mutlu, Turkey** - Production and characterization of biomedical Ti-7Co alloy in simulated body fluid environment

P-26 **Jongshin Park, Korea** - Preparation and characterization of polyurethane foam using PLA/PTMEG as polyols

P-27 **Emine Berber, Turkey** - Fabrication of electrospun nanofibers-single walled carbon nanotube (SWCNT) composite thin membrane for exhale breath analysis

P-28 **Alfonso Fernández-González, Spain** - Spectroscopic characterization of novel carbon nanoparticles using surface interaction with Eu^{3+}-tetracycline complex as probe

P-29 **Eunhae Koo, Korea** - DNA nanosensor with PNA/DNA hybridization

P-30 **Ricardo Totovao, France** - Stimuli-responsive hybrid organic/inorganic mesoporous silica nanoparticles for nanomedicine

POSTER PRESENTATION PROGRAM

23 - 25 August 2015

P-31 **Declan McGlade, Ireland** - A graphene-copper composite as an anti-bacterial agent for potential water treatment applications
P-32 **Ana L. Martínez-Hernández, México** - Photocatalytic effect to remove phenolic compounds of water with carbon materials of 2 and 3 dimensions
P-33 **Vicente Rodríguez-Gonzalez, Mexico** - A functional assembly of SiO_2 nanospheres/graphene oxide composites
P-34 **Seong-Chan Jun, Korea** - The composite of 3D graphene and 2d materials for glucose sensing
P-35 **Boris Minaev, Ukraine** - Computational design of new 2D materials and single-wall nanotubes
P-36 **Whangi Kim, Korea** - Preparation and synthesis of sulfonated polyphenylene containing ketone moiety for PEMFC
P-37 **Xuemei Wang, China** - Fabrication of carbon fiber microelectrode and its application in living cell H2O2 detection
P-38 **Poomani Govender, South Africa** - DFT Studies of Vitamin B12 analogues

Advanced Optical Materials and Methods

P-39 **Ting Kan Tsai, Taiwan** - Optical properties and thermal stability of sputtered CrN/CrON/Al_2O_3 spectrally selective coatings
P-40 **S J Dhoble, India** - NUV excited $K_2SrP_2O_7:Sm^{3+}$ red phosphor for white light generation
P-41 **Chih Wei Luo, Taiwan** - Anisotropic ultrafast dynamics in $La_{0.67}Sr_{0.33}MnO_3$ /$BiFeO_3$ heterostructure
P-42 **Jau-Shiung Fang, Taiwan** - Atomic layer deposition of Cu and Cu(Ru) layer by electrochemical process
P-43 **Girish Setlur, India** - Anomalous rabi oscillations in dirac fermion materials
P-44 **Alok Shukla, India** - Luminescence investigation of $KAlPO_4Cl:Dy^{3+}$ phosphor for solid state lighting
P-45 **Rong-Fuh Louh, Taiwan** - Electrophoretically self-assembled photonic crystal templates with surface enhanced raman scattering effect
P-46 **Gonzalo Becerra Orozco, Colombia** - Optical modes of vibration in a metamaterial slab including effects of retardation
P-47 **Hsin-Yi Lee, Taiwan** - Structural and magnetic properties of sputter-deposited $La_{0.7}Sr_{0.3}MnO_3/LaNiO_3$ superlattices
P-48 **Chi-Jung Chang, Taiwan** - White light emitting diodes with UV curable oligosiloxane/fluorescent polymer blends as encapsulants
P-49 **Anurag Pandey, South Africa** - NIR to visible frequency upconversion in $CaMoO_4:Ho^{3+}$-Tm^{3+} phosphor
P-50 **Pavel Peretyagin, Russia** - Study of laser beam modulation influence on structure of materials produced by additive manufacturing
P-51 **Bentouaf Ali, Algeria** - Structural and electronic properties of $TbCo_2$ binary system intermetallic compounds: A first-principles study
P-52 **Gyung Soo Jeon, Korea** - On characterizing microscopically the adhesion interphase for the adhesion between brass-plated steel cords with different brass-plating amount and rubber compound by auger electron spectroscopy
P-53 **Subhash Chander, India** - Annealing dependent physical properties of CdTe thin films for solar cell applications

20.15-20.30 Meeting of Poster Jury

25th August, Tuesday (Day - 3)

Poster Evaluation Jury: Kazunori Kataoka (Japan), Klaudio Bari (UK), Natarajan Murugan (Sweden) and Richard Haverkamp (New Zealand)

08.00-08.30 **All Posters Setup, Venue: Conference Centre, Deck 8**

10.00-10.30 **Poster Session I** - Advanced Green Materials and Technology, Advanced Structural and Engineering Materials, Advanced Composite Materials and Technology

12.30-13.30 **Poster session II** - Advanced Green Materials and Technology, Advanced Structural and Engineering Materials, Advanced Composite Materials and Technology

Advanced Green Materials and Technology

P-01 **Paola Semeraro, Italy** - Treatment of wastewater in textile industry to recover and reuse dyes
P-02 **Ana Marta-nez-Hernaˌndez, Mexico** - Removal of phenol and As (V) from water by polyurethane- keratin membranes: Gamma irradiation effect
P-03 **Manoj Pandey, India** - Preparation characterization and study of host-guest behaviour of dimethylaniline encapsulated cucurbit[n]uril (n=67) complexes
P-04 **Salam Titinchi, South Africa** - Oxovanadium supported catalyst for oxidation reactions
P-05 **Jung-Sik Kim, Korea** - Photocatalytic reaction for titanium dioxide on the long lasting phosphor of strontium aluminate system
P-06 **Jung-Sik Kim, Korea** - Fabrication of the MOS-type sensor array and its sensing characteristics for gas mixture
P-07 **Alessandra Longo, Italy** - Removal of textile dyes from wastewater using chitosan-based ultrathin membranes
P-08 **Pramod Kumar Jain, India** - Studies on warm mix asphalt - A low energy engineering material
P-09 **Yung-Pin Tsai, Taiwan** - Using titanium dioxide/carbon nanotubes to remove humic acids in water
P-10 **Boris Minaev, Ukraine** - Natural degradation of the N N N'N'-tetraethylbenzidine dication – An intermediate formed upon colorimetric determination of hypochlorite in circulating and waste water

Advanced Composite Materials and Technology

P-11 **Marcin Malek, Poland** - Influence of binder type on the SiC-based ceramic slurries properties for casting shell moulds fabrication
P-12 **Devendra Burghate, India** - Synthesis and characterization of electrospun nanofibers of PPy/MWCNT/MnO_2 ternary composite
P-13 **Eduardo Brochhi, Brazil** - Preparation and characterization of CuNi-Al_2O_3 nanocomposite
P-14 **Ryo Yamazaki, Japan** - Effect of borate addition on superplastic deformation of hydroxyapatite
P-15 **Tetsuo Umegaki, Japan** - Effect of silica coating on performance of copper-zinc oxide based catalyst for methanol synthesis
P-16 **Isabel Ramos, Brazil** - Preparation and characterization of CuNi-Al_2O_3 nanocomposite
P-17 **Yingwei Fan, UK** - Kinetics and mechanism of chemical reaction at the unidirectional continuous SiC fibre/C/Ti-17 composite interfaces
P-18 **Venkatesh Doddapaneni, Stockholm** - On the Fe-oxide/PMMA nanocomposites in electrical switching applications
P-19 **Jafarsadegh Moghaddas, Iran** - Adsorption desorption cycles of silica aerogel and silica aerogel-activated carbon composite
P-20 **Mahmoud Heydarzadeh Sohi, Iran** - Effects of the electrodeposition parameters on crystalline size and morphology of CoFe-based nanocomposite coatings
P-21 **Franco Amado, Brazil -** Synthesis and characterisation of polyaniline(Pani) membranes for fuel cell
P-22 **Kamel Taibi, Algeria** - Structural and vibrational studies of Ni Alx Fe_{2-x} O_4 ferrites ($0 \le x \le 1$)
P-23 **Morteza hosseinzadeh, Iran** - Warpage analysis of PPE/PS 20% glass composite in the injection molding process

Advanced Structural and Engineering Materials

P-24 **Kurt Rudahl, Thailand** - Hidden damage visualization for earth-supported constructions
P-25 **Whangi Kim, Korea** - Preparation and properties of polycarbonate containing side ester group for surface hardness
P-26 **Malgorzata Zagorska, Poland** - Structure and oxidation resistance of multicomponent diffusion layers based on nickel aluminides produced on superalloy inconel 713C
P-27 **Karin Gong, Sweden** - Study of nano-indentation hardness on subsurface layer of Ni_3Al-alloy and its composites induced by dry friction
P-28 **Gennadii Sapozhnikov, Russia** - Production and properties investigation of the high nitrogen stainless steel
P-29 **Pavel Peretyagin, Russia** - Characterization of materials defects after electrical discharge machining and research of their physical explanation by vibroacoutstic diagnostics
P-30 **Lehlohonolo Koao, South Africa** - Effect Tb^{3+} molar concentrations on ZnO nanoplates synthesized by chemical bath method (CBD)
P-31 **Lounis Azzeddine, Algeria** - Preparation and structural characterization of ultrathin polymer films by neutron reflectivity
P-32 **Mohammed Azzaz, Algeria** - Microstructurtural study of thin films CuFe obtained by thermal evaporation
P-33 **Ion Palamarciuc, Romania** - Improoving stainless steel corrosion resistance to sulfurous media by formation of protective oxide layers in fluidized bed
P-34 **Arash Siroueinejad, Iran** - Synthesis of magnetite nanoparticles on the surface of carbon steel as passivation film and investigation of their corrosion behaviors

13.15-13.30 Meeting of Poster Jury

AMWC at a glance

Summary of Program: AMWC 2015

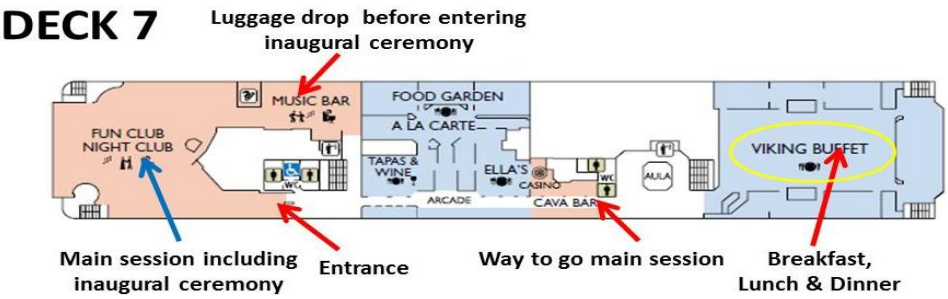
23rd August, Sunday (Day - 1)		24th August, Monday (Day - 2)		25th August, Tuesday (Day - 3)		26th August, Wednesday (Day - 4)*	
Registration	9.00-10.30	Breakfast	06.30-08.00	Breakfast	07.00-08.00	Scientific Discussion, Social Activities (Trip)	10.30-15.00
Boarding	10.30-11.00	Poster Setup	08.00-08.30	Poster Setup	08.00-08.30	Lunch at the Nobel Museum	12.00-13.30
Main Session	11.00-12:00	Main Session	8:30-10.00	Check Out	08.30-09.00		
Lunch and Poster Setup	12.00-13.30	Coffee and Poster Session	10.00-10.30	Main Session	9:00-10.00		
Cabin Access	13.30-14.00	Parallel Session	10:30-12.00	Coffee and Poster Session	10.00-10.30	*Delegates who booked tickets for Nobel Museum and Stockholm Sightseeing tour.	
Parallel Session	14.00-16:30	Lunch	12.00-13.20	Parallel Session	10:30-12:30		
Coffee and Poster Session	16:30-17:00	Helsinki Trip	13.30-15.30	Lunch and Poster Session	12.30-13.30		
Parallel Session	17.00-19:30	Coffee and Poster Session	15.30-16.30	Parallel Session	13:30-14:45		
Poster Session	19:30-20:30	Parallel Session	16:30-19:30	Closing Ceremony	15:00-15:20		
Dinner	20.15-21.30	Coffee and Poster Session	19:30-20:30	Leaving from Viking Cruise	15.30		
		Congress Gala Dinner	20.30-23.30				

Venue Chart

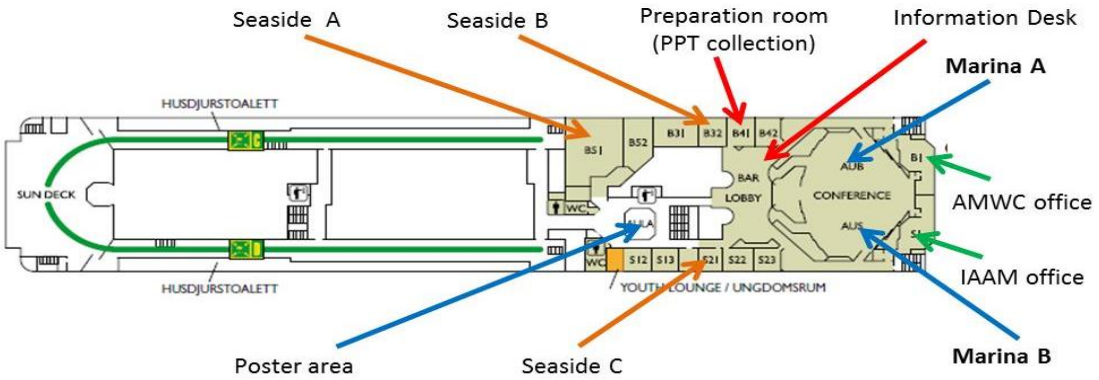
Fun club, Deck 7		Conference centre, Deck 8				
	Main Session	Session I Marina A	Session II Marina B	Session III Seaside A	Session IV Seaside B	Session V Seaside C
23rd August, Sunday (Day - 1)	Seaside Auditorium	NN	Biomaterials	SET	CM	Biosensors
		NN	Biomaterials	SET	OEMM	AHM
24th August, Monday (Day - 2)	Seaside Auditorium	NN	Biomaterials	EGM	EGF	
		NN	WTF	SCEM	EGF	
25th August, Tuesday (Day - 3)	Seaside Auditorium	NN	Biomaterials	CCM	EGF	
		Seaside C EM	Seaside B WTF	Seaside A CCM		

Abbreviations	
CM	Computational Materials
OEMM	Optical, Electronic and Magnetic Materials
AHM	Advanced Hybrid Materials
Biosensors	Biosensors and Bioelectronics
CCM	Composite and Ceramic Materials
WTF	World Technology Forum
SET	Smart Energy Technologies
EGM	Environment and Green Materials
EM	Electronic Materials
SCEM	Structural and Constructional, Engineering Materials
EGF	European Graphene Forum
NN	Nanomaterials and Nanotechnology
Biomaterials	Biomaterials and Biodevices

DECK 7



DECK 8



Structural, Constructional and Engineering Materials

www.vbripress.com/amwc, DOI: 10.5185/amwc.2015 Published online by the VBRI Press in 2015

Effect of calcium carbonate filler content on the hoop stress of high density polyethylene pipes

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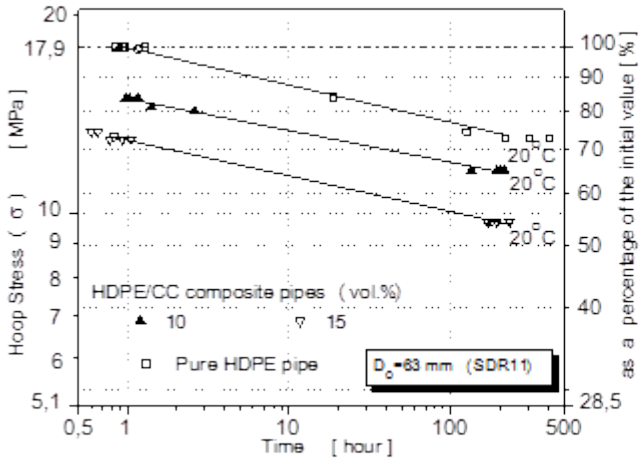

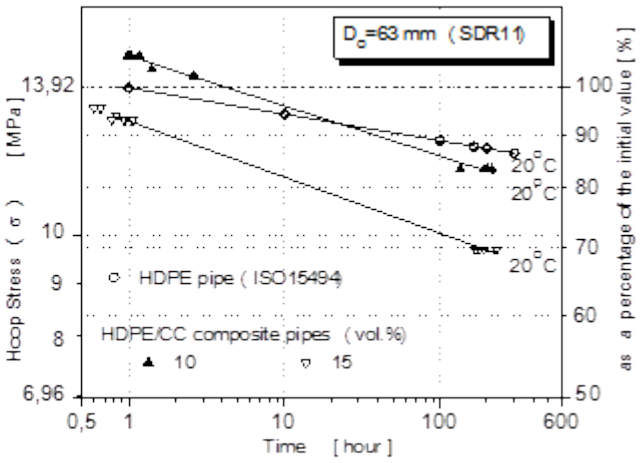

ABSTRACT

In this experimental study, the effect of calcium carbonate (CC) filler content on the hoop stress of the high density polyethylene (HDPE) pipes was studied. There are many studies show on the effect of filler content of CC on the mechanical properties of HDPE materials. The comparison values of mechanical properties of the materials are generally the result of short-term uniaxial tests on test specimens after their production in general through very high compression method such as injection moulding processes and through hot-pressing. It is well known that the values of the properties of materials are reducible or increasable depending on the contents of the CC fillers. But the CC filled HDPE composite pipe production with an single screw extrusion and the effects of the contents of the CC fillers on the short-term hydrostatic internal pressure (STHSP) performance of HDPE/CC composite pipes are still uncertain. In this context, it is the aim of the present study is, on the one hand, the manufacturing of the CC filled HDPE composite pipes, and secondly to compare hoop stress of pure HDPE and HDPE /CC composite pipes depending upon CC-contents. The materials used for this aim are; pure HDPE, CC fillers with 5µm average particle size and HDPE/CC composite materials with filler contents in various ratios of 10% and 15% by volume. Short-term hydrostatic internal pressure (SHSP) tests were performed in according to ISO 1167 between 1 and 100 hours in water at 20°C temperature on pure PEHD and CC filled HDPE pipes of 63mm outer diameter (do) according to standard dimension ratio (SDR) 11. When the experimental results were evaluated according to ISO 1167, it was clearly seen that hoop stress of HDPE/CC composite materials is strict related with contents of CC filler amount. Following results show us that the contents of the CC filler affected the hoop stress of pure HDPE pipe. It was observed that the stiffness of the composite pipe was increased but the hoop stress was decreased by the contents of the CC filler.

Keywords: High density polyethylene; pipe; composite; calcium carbonate; hoop stress.

Acknowledgements
This study is prepared from the Master of Science thesis named as "Optimization of Hydrostatic Internal Pressure Performance Properties of Mineral Filled High Density Polyethylene Pipes" which is presented at the Kocaeli University Natural Sciences and

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Technologies Institute under the scope of “Optimization of Short and Long Term Internal Pressure Performance Properties of Polyolefin Pipes with Mineral Fillers” titled and referenced as project number 105M220 of The Scientific and Technological Research Council of Turkey (TUBITAK) project. The authors would like to thank to “EMAŞ Plastik Sanayi ve Tic. A.Ş." and also to "Nova Plastik Sanayi ve Ticaret A.Ş." for their devotions.

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DOI: 10.1016/S0032-3861(02)00769-3

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