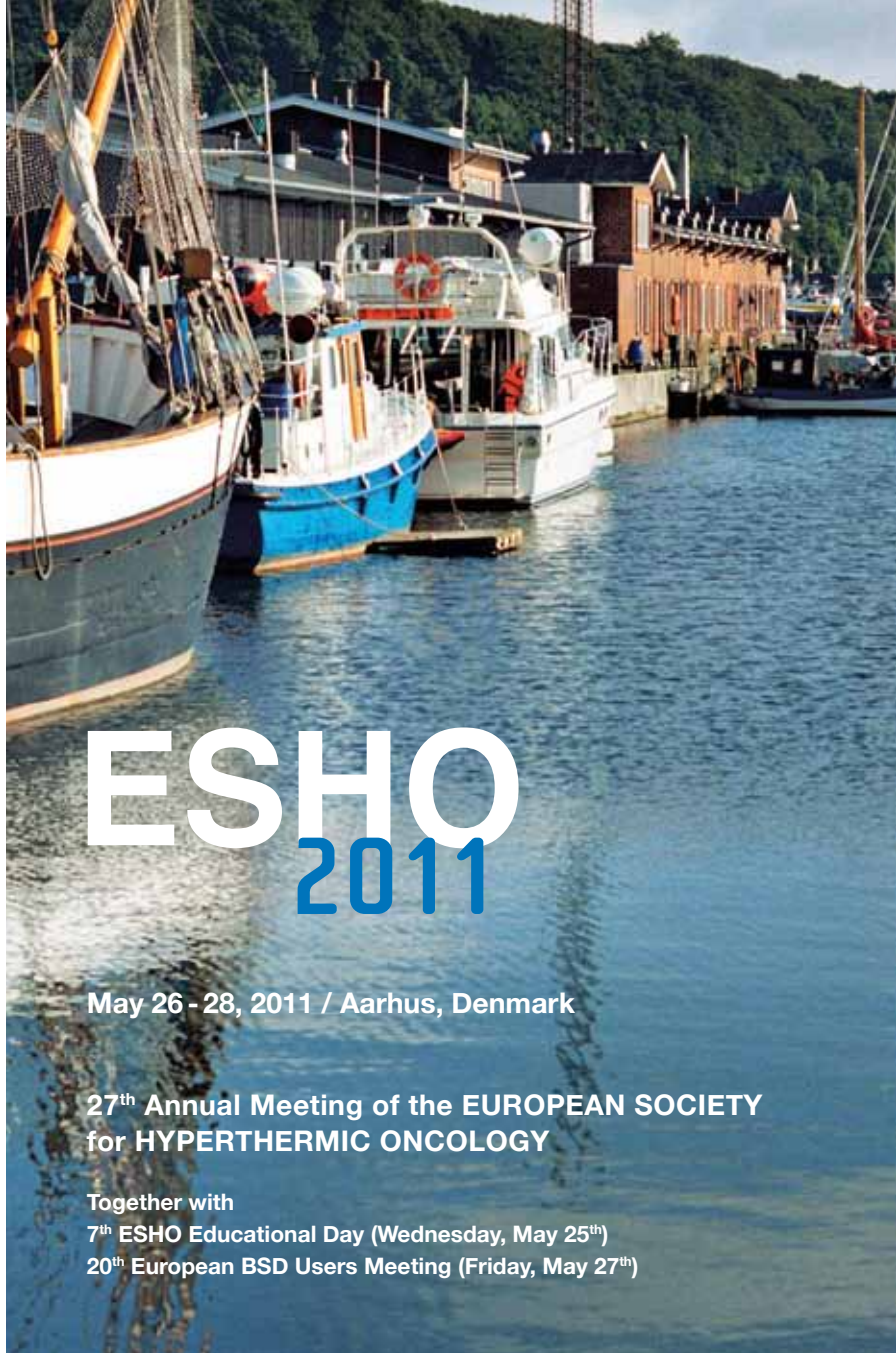


AARHUS

DENMARK



ESHO 2011

May 26 - 28, 2011 / Aarhus, Denmark

**27th Annual Meeting of the EUROPEAN SOCIETY
for HYPERTHERMIC ONCOLOGY**

Together with

7th ESHO Educational Day (Wednesday, May 25th)

20th European BSD Users Meeting (Friday, May 27th)

FINAL PROGRAM



Dear Colleagues,

It is with great pleasure that I welcome you to the 27th Annual Meeting of the European Society for Hyperthermic Oncology (ESHO) meeting here in Aarhus, Denmark. The venue for the meeting is the Helnan Marselis Hotel, situated in the southern part of Aarhus overlooking the Danish coastline, and located on the edge of the beautiful Marselisborg forest close to the Danish Royal family's summer

palace. This is an entirely self-contained hotel with excellent rooms at reasonable prices, full lecture facilities, and adequate space for exhibitors and posters. The hotel is only 3 km from the centre of Aarhus. Aarhus itself is the second largest city in Denmark with about 300,000 inhabitants. Historically it is one of the oldest towns of Northern Europe and offers great opportunities for tourists and professional visitors.

This meeting contains an exciting scientific program with renowned speakers on the major clinical, physical and biological developments within hyperthermia. The format of the meeting includes keynote lectures, oral scientific sessions, and poster presentations. A total of four keynote lectures will be given starting with an historical look back to hyperthermia from the Danish perspective, and followed by presentations of technical developments within hyperthermia, the clinical status, and nanotechnology. These latter three issues are expanded in the scientific oral sessions and poster presentations. But, sessions will also be devoted to thermal ablation, high intensity focused ultrasound and biological developments. The significance of biology in hyperthermia is further illustrated by it being the basis of the 7th ESHO Educational Day, held at Aarhus University Hospital on Wednesday, May 25; the title of this pre-ESHO meeting being "New insights into the biological aspects of hyperthermia". In line with previous ESHO meetings there will also be the 20th European BSD Users Meeting planned as one of the scientific sessions on Friday, May 27.

Following on from the publication of several randomized phase III clinical trials there is a resurgence in the potential of hyperthermia as an effective cancer therapy and it is now time to establish it as the 4th option. The scientific content of the ESHO 2011 meeting will reflect this aim.

As with previous ESHO meetings our industrial hyperthermia partners are well represented and their generous financial support of this meeting is gratefully acknowledged. For several companies this also includes sponsorship of the various ESHO awards including the annual ESHO-BSD award and three ESHO-student awards, one for each of the clinical, physics and biology disciplines. This year there will also be an additional three student awards kindly sponsored by Dr. Kim from Korea.

Aarhus also has a long association with hyperthermia. Pre-clinical studies were initiated at Aarhus University Hospital back in the 1970s and since then the research and clinical groups at this hospital have made significant biological and clinical contributions to the field. Aarhus was also the site of the 4th International Congress for Hyperthermic Oncology, back in 1984, so it is appropriate to return to the place that is often referred to as the "smallest big city in the world".

As president of the ESHO 2011 meeting I now welcome you to Aarhus, for what I'm sure will be a wonderful meeting.

Michael R. Horsman

President of the ESHO 2011 Annual Meeting

Local Organizing Committee**President**

Michael R. Horsman

Members

Jens Overgaard
Ole Steen Nielsen
Jacob Lindegaard
Sten Hornsleth
Kari Tanderup
Steffen Hokland

Organizing Secretariat

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Gail ter Haar
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General Information

In case of urgent issues during the meeting please contact:
Ms. Lene Skovlund Jensen (+45 22 14 41 59).

Participant registration will take place from 7.30 a.m. on Thursday, May 26 and from 8.30 a.m. on all other days.

All speakers are kindly requested to upload their presentations well in advance of the sessions in which they will participate, but at the very latest in the break immediately prior to that session. Speakers are also reminded to stay within the allotted time; chairpersons have been instructed to keep all speakers to the time assigned.

Posters should be mounted on the provided poster boards from 8.00 a.m. on Thursday, May 26 and should remain up throughout the entire period of the meeting. They must be removed by 1.00 p.m. on Saturday, May 28; posters remaining after this time will be removed by the meeting organisers and destroyed.

As with previous years three ESHO student awards each of € 500 will be given, one for each of the three major disciplines:

- ESHO-Alba student award for Medicine
- ESHO-ZMT student award for Physics
- ESHO-MagForce student award for Biology

Several members of a jury panel will assess student presentations, regardless of whether oral or poster, during the conference and score them for scientific content and presentation, with the students receiving the highest score nominated for the respective student award. Presentation of the awards to the winners in each category will be made during the award ceremony held on the morning of Saturday, May 28.



Aarhus University
Hospital



Kræftens
Bekæmpelse



Dansk
Hypertermifond

Wednesday May 25, 2011

Educational Day

09.00	Welcome and Introduction
09.15	Time temperature relationships Radiation and heat Chemotherapy and heat
10.45	Coffee break
11.15	Pathophysiological effects Role of vasculature Heat and immune response
12.45	Lunch
13.45	Heat shock proteins Magnetic nanoparticles Thermosensitive liposomes
15.15	Coffee break
15.45	Thermal ablation Imaging Summary and conclusions
18.00	ESHO Board meeting

Thursday May 26, 2011

07.30	Registration
08.30	Welcome and Introduction
08.40	Keynote lecture I A hot blast from the past
09.05	Scientific Session I Biological developments
10.45	Coffee break
11.15	Scientific Session II Thermal ablation
12.45	Lunch
14.15	Keynote lecture II Recent improvements in technology
14.45	Scientific Session III Technical developments
16.10	Coffee break
16.40	ESHO BSD Award
17.30	ESHO General Assembly
19.00	Welcome Reception at Aarhus City Hall Buses leave Helnan Marselis Hotel at 18.40

Friday May 27, 2011

08.00	Registration
08.30	Keynote lecture III Hyperthermia in the clinic: current status
09.00	Scientific Session IV Clinical developments I
10.30	Coffee break
11.00	Scientific Session V BSD Users Meeting
12.30	Lunch
14.00	Keynote lecture IV Thermotherapy with magnetic nanoparticles
14.30	Scientific Session VI Developments in nanotechnology
16.00	Coffee break
16.30	Scientific Session VII HIGH INTENSITY FOCUSED ULTRASOUND
19.00	Conference Dinner at Varna Mansion

Saturday May 28, 2011

08.30	Registration
09.00	Scientific Session VIII Clinical developments II
10.30	Coffee break
11.00	Establishing hyperthermia in Australia
11.15	Award Lectures Kim Awards International Journal of Hyperthermia Editorial Awards ESHO Student Awards
12.50	Meeting Closure A packed lunch will be supplied



Program at a Glance

EDUCATIONAL DAY

NEW INSIGHTS INTO THE BIOLOGICAL ASPECTS OF HYPERTHERMIA

- 09.00 Welcome and introduction
M. Horsman
- 09.15 Time-temperature relationship for cell killing
M. Dewhirst
- 09.45 Enhancement of radiation by heat
J. Overgaard
- 10.15 Interaction of heat and chemotherapy
O. Dahl
- 10.45 Coffee break
- 11.15 Tumour pathophysiological effects
P. Vaupel
- 11.45 Role of tumour vasculature in heat response
M. Horsman
- 12.15 Thermal influences on the immune system
E. Repasky
- 12.45 Lunch
- 13.45 Heat shock proteins in cancer
G. Multhoff
- 14.15 Magnetic nanoparticles in hyperthermia
A. Jordan
- 14.45 The use of thermosensitive liposomes
M. Dreher
- 15.15 Coffee break
- 15.45 Thermal ablation approaches
C. Jayadewa
- 16.15 Imaging the biological effects of heat
S. Hokland
- 16.45 Summary and conclusions
M. Horsman

ESHO BOARD MEETING (ON INVITATION)

- 18.00 Dept. Experimental Clinical Oncology
Aarhus University Hospital
- 21.00 End

OPENING

- 08.30 Welcome and Opening
M.R. Horsman

KEYNOTE LECTURE I

Chair: R. Issels

- 08.40 A hot blast from the past
J. Overgaard

SCIENTIFIC SESSION I**BIOLOGICAL DEVELOPMENTS**

Chairs: P. Vaupel and A. Asea

- 09.05 Microvascular and pathophysiological aspects of hyperthermia: facts and open questions
P. Vaupel
- 09.25 Targeting normal, homeostatic vasomotor function by heat results in therapeutically beneficial changes in the tumour microenvironment
E. Repasky
- 09.45 Hyperthermia-induced homologous recombination deficiency provides novel anti-cancer treatment opportunities
B. Eppink
- 10.05 Combination of X-ray with hyperthermia can lead to anti-tumour immunity
U. Gaipl
- 10.15 Targeting of heat-shock-induced Akt/mTOR-signalling in sarcoma cells
V. Sujeva
- 10.25 Targeting HSP27 in breast cancer tumours using combined lentivirus-RNAi technology
A. Asea
- 10.35 In-vitro investigation of new combination partners to enhance anti-tumour efficacy of hyperthermia
S. Barth
- 10.45 Coffee and poster viewing

SCIENTIFIC SESSION II**THERMAL ABLATION**

Chairs: G. ter Haar and T. Preusser

- 11.15 Advances in thermal ablation – characterisation of biological changes following HIFU
C. Jayadewa
- 11.35 Numerical simulation and optimization for the planning of RF ablation
T. Preusser
- 11.55 Clinical application: the Danish experience
D. Nielsen
- 12.15 Experience of the use of radiofrequency-assisted resection in organ saving surgeries in patients with renal carcinoma
I. Shevtsov
- 12.25 Inspecting standard ablation applicator SAR distribution
T. Vydra
- 12.35 Development and evaluation of an MRI-guided focused ultrasound system dedicated for heating in small animal tumour models
S. Hokland
- 12.45 Lunch (sponsored by Celsius42) and poster viewing

KEYNOTE LECTURE II

Chair: S. Hornsleth

- 14.15 Recent improvements in technology
G.C. van Rhoon

SCIENTIFIC SESSION III**TECHNICAL DEVELOPMENTS**

Chairs: H. Crezee and K. Tanderup

- 14.45 Reasons and initial experience in restarting HT in Aarau: why to invest in outdated technology
G. Lutters

- 15.00 BSD-2000 quality assurance testing
P. Turner
- 15.15 Impact of heated volume on bioheat transfer during regional hyperthermia: clinical experience with the AMC-8 system
H. Crezee
- 15.30 Assessment of optimization results as a tool for applicator selection and development in deep hyperthermia
R. Canters
- 15.40 AMC 70 MHz double waveguide system (AMC2)
G. van Stam
- 15.50 Reconstruction of the superficial hyperthermia treatment setup from multiple-view images
T. Drizdal
- 16.00 Focusing potential of evanescent mode applicators
D. Vrba
- 16.10 Coffee and poster viewing
- 16.40 **ESHO BSD AWARD**
- 17.30 **ESHO GENERAL ASSEMBLY**
- 19.00 Welcome reception at Aarhus City Hall
A shuttle bus leaves from the meeting venue at 18.40 to take you there. Return at own initiative.

KEYNOTE LECTURE III**Chair: S. Maluta**

- 08.30 Hyperthermia in the clinic: current status
M. Hulshof

SCIENTIFIC SESSION IV**CLINICAL DEVELOPMENTS I****Chairs: O.S. Nielsen and R. Wessalowski**

- 09.00 New clinical trials in the Duke hyperthermia program focus on bladder cancer
M. Dewhirst
- 09.20 Hyperthermia European adjuvant trial (HEAT): a randomized two-armed open study on the adjuvant therapy in patients with R0/R1 resected pancreatic carcinoma with gemcitabine alone (arm G) versus gemcitabine plus cisplatin with regional hyperthermia (arm GPH): a phase III trial
K. Lechner-Tschoep
- 09.35 The role of additional regional deep hyperthermia for local tumour control in childhood cancer
R. Wessalowski
- 09.50 Whole body hyperthermia in the managements of advanced soft tissue sarcomas in children
R. Ismail-Zade
- 10.00 Re-irradiation plus hyperthermia for 415 patients with macroscopic recurrent breast cancer: the Amsterdam + Tilburg experience
S. Oldenburg
- 10.10 Hyperthermia assisted HDR brachytherapy in cervical cancer treatment. A phase III study. Results of 3-years follow-up
N. Piotrkowicz
- 10.20 Three years clinical experience in superficial hyperthermia with focus on toxicity
M. Ehmann
- 10.30 Coffee and poster viewing

SCIENTIFIC SESSION V

BSD USERS MEETING: THE BSD UPDATE

Chairs: **R. Wessalowski and G. Sennewald**

- 11.00 Welcome and introduction
R. Wessalowski and G. Sennewald
- 11.05 Immunobiology of hyperthermia
U. Gaipf
- 11.20 Discussion
- 11.25 Microwave ablation development and studies
P. Turner
- 11.40 Discussion
- 11.45 New clinical trials – The Atzelsberg Circle
R. Wessalowski
- 12.00 Discussion
- 12.05 Auto-segmentation of MR images for treatment planning
S. Bauchowitz
- 12.20 Discussion and closing remarks
- 12.30 Lunch (sponsored by MagForce) and poster viewing

KEYNOTE LECTURE IV

Chair: **M.R. Horsman**

- 14.00 Thermotherapy with magnetic nanoparticles: latest clinical results and future developments
A. Jordan

SCIENTIFIC SESSION VI

DEVELOPMENTS IN NANOTECHNOLOGY

Chairs: **M. Dewhirst and G.A. Koning**

- 14.30 Material science and engineering of the thermal sensitive liposome: intravascular drug release, and enhanced drug concentrations at maximum penetration distance in tumours
D. Needham
- 14.50 Thermoresponsive liposomal nanomedicine to improve drug delivery to solid tumours
G.A. Koning
- 15.10 Encapsulation of doxorubicin into 1,2-dipalmitoyl-SN-glycerol-3-phosphoglycerolglycerol-based thermosensitive liposomes with active loading
M. Hossann
- 15.20 Hyperthermia induced intratumoural liposomal drug delivery and triggered release
L. Li
- 15.30 Mild hyperthermia of tumour based on gold nanoparticles
M. Sirotkina
- 15.40 Experience of the use of agent based on Fe magnetite nanoparticles in the study with tumour-implanted renal carcinoma in rats
A.M. Granov
- 15.50 Magnetic fluid on the basis of lanthanum-strontium manganite nanoparticles as potential mean for tumour hyperthermia
S. Osinsky
- 16.00 Coffee and poster viewing

SCIENTIFIC SESSION VII

HIGH INTENSITY FOCUSED ULTRASOUND

Chairs: **M. Dreher** and **S. Hokland**

- 16.30 Focused ultrasound for ablation and hyperthermia induced drug delivery
H. Gruell
- 16.50 Dose painting with MR image-able low temperature sensitive liposomes and MR-guided high intensity focused ultrasound
M. Dreher
- 17.10 Towards a unified reporting regime for HIFU treatments
G. ter Haar
- 17.30 Computational framework for HIFU/FUS modelling and induced in-vivo effects
A. Kyriakou
- 17.40 HIFU-mediated local drug delivery under MR image guidance
M. de Smet

CONFERENCE DINNER

- 19.00 Conference Dinner at the Varna Mansion in Aarhus, East Jutland.
For more information about Varna Mansion see: <http://www.varna.dk>

SCIENTIFIC SESSION VIII

CLINICAL DEVELOPMENTS II

Chairs: **R. Issels** and **J.C. Lindegaard**

- 09.00 Hyperthermia added to radiochemotherapy as preoperative treatment for locally advanced or inoperable rectal adenocarcinomas
O. Dahl
- 09.20 High-risk soft tissue sarcoma (STS): updated analysis of the randomized EORTC-ESHO intergroup trial (NCI-00003052)
R. Issels
- 09.35 Ifosfamide, carboplatin and etoposide (ICE) in combination with regional hyperthermia (RHT) in the treatment of anthracycline-refractory soft-tissue sarcomas
V. Buecklein
- 09.50 Thermoradiotherapy and chemotherapy of non-operable esophagus cancer
V. Borisov
- 10.00 Regional hyperthermia combined with chemo-radiotherapy in locally advanced unresectable pancreatic cancer
S. Dall'Oglio
- 10.10 The role of local hyperthermia with intraarterial chemotherapy in treatment of patients with nasal and paranasal sinus cancer
A. Khasanov
- 10.20 Chemoradiation with hyperthermia in the management of locally advanced head and neck cancer
N. Huilgol
- 10.30 [Coffee and poster viewing](#)
- 11.00 Establishing hyperthermia in Australia: an update
J. Barlow and **M. Jackson**
Chair: **M.R. Horsman**

AWARD SESSION I

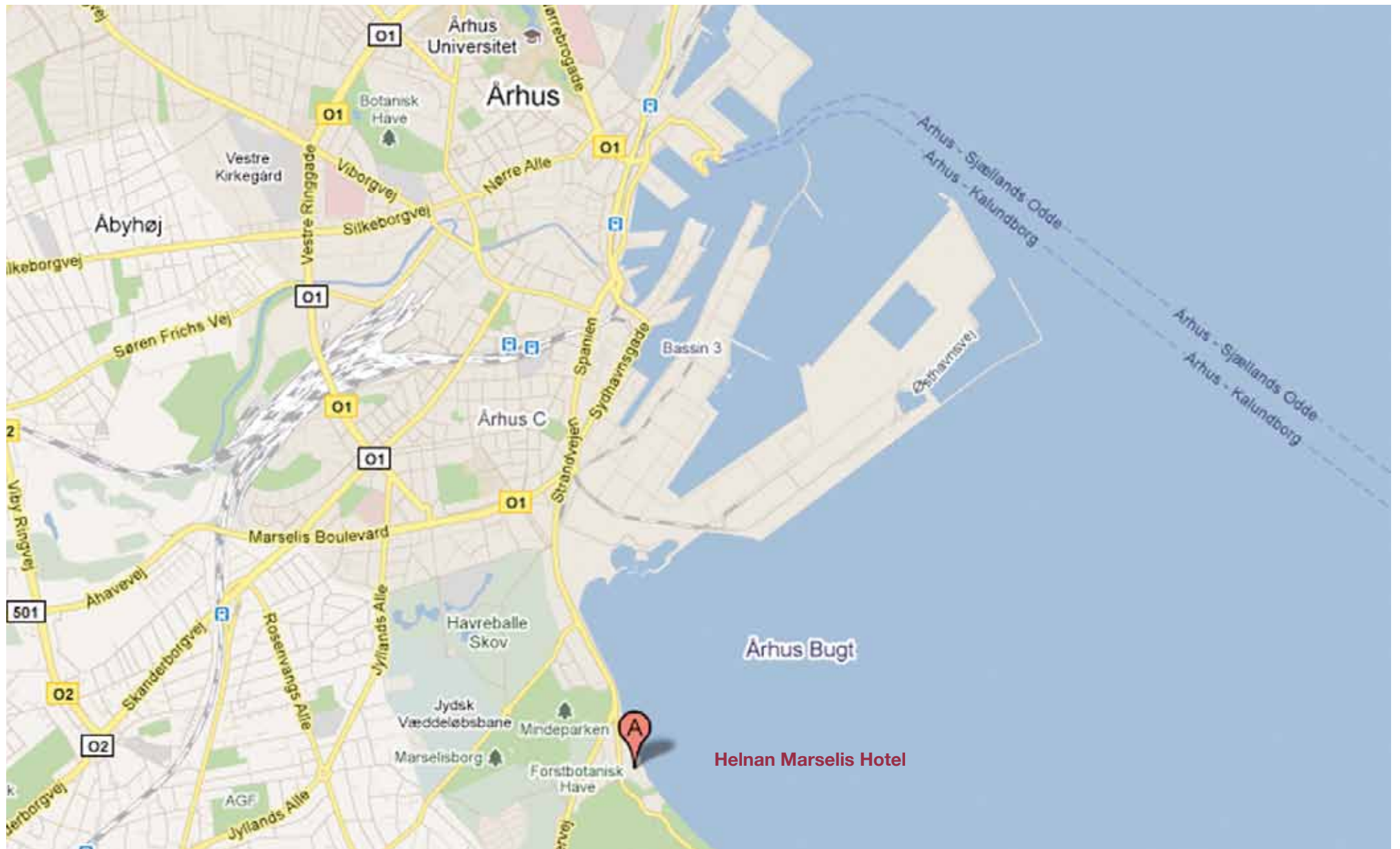
KIM AWARDS

Chair: **M.S. Kim and O. Dahl**

- 11.15 Introduction
M.S. Kim
- 11.25 Hyperthermia and re-irradiation in the treatment of microscopic recurrent breast cancer
M. Linthorst
- 11.40 Synthesis of magnetic fluid distribution in hyperthermia: numerical tools
E. Sieni
- 11.55 Possible immune-reactions with oncothermia
N. Meggyeshazi

AWARD SESSION II

- 12.15 Presentation of Int. J. Hyperthermia Editorial Awards
M. Dewhirst
- 12.30 Presentation of ESHO student awards
G. van Rhoon and R. Issels
- ESHO-Alba student award for Medicine
 - ESHO-ZMT student award for Physics
 - ESHO-MagForce student award for Biology
- 12.50 Meeting closure
M.R. Horsman



ESHO 2011
The 27th Annual Meeting of the
EUROPEAN SOCIETY for HYPERTHERMIC ONCOLOGY
Aarhus, Denmark, May 26-28, 2011

On behalf of the ESHO 2011 organisers I gratefully acknowledge the financial support of the following organisations without which this meeting would not have been possible:

Premium Partner: Dr. Sennewald Medizintechnik GmbH

Bronze Partners: Alba Hyperthermia Systems
Celsius42+ GmbH
Elekta AB
MagForce Nanotechnologies AG
Varian Medical Systems Scandinavia A/S
ZMT Zurich MedTech AG

Local Partners: Aarhus University Hospital
Kræftens Bekæmpelse
Dansk Hypertermifond



Michael R. Horsman
President of the ESHO 2011 Annual Meeting

