EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

Workshop: Designing Focused Deep Hyperthermia by EMF

COST EMF-MED

Zurich, 23 June 2015

COST Action BM1309: European network for innovative uses of EMFs in biomedical applications (EMF-MED)

Call for abstracts

In oncology, hyperthermia is recognized as a very potent sensitizer for radiotherapy and chemotherapy while minimally enhancing late toxicity. Hyperthermia has a good tolerance and low morbidity. However, the clinical application is in general perceived as being difficult to apply at high quality and the procedure is demanding for patient and staff. The large focus of heating of the current low frequency deep hyperthermia systems prohibits small scale adjustment of the RF energy and is closely related to the induction of painful hot spots that limit the increase of the tumor temperature. Theoretical modelling shows that hyperthermia systems at higher frequencies (200 - 450 MHz) and a high number of antennas (50 - 100) will improve the ability to selectively heat the tumor. A small energy focus combined with focus scanning technology, will pave the way to apply high intensity focused RF heating enabling preferential tumor heating with low dependence on the differential blood perfusion between tumor and normal tissue. Realization of such a system requires innovative approaches enabling controlled and easy to apply delivery of a controlled high quality heat treatment with minimal human interfacing in other to achieve widespread application.

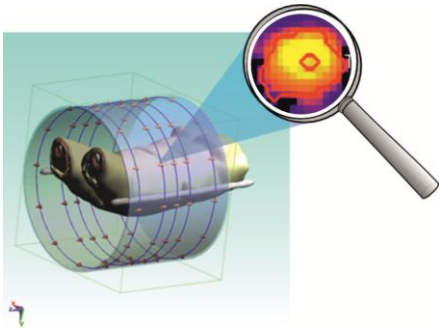
Topics List

- Coherent arrays of thin, high density RF-applicators; flexible technology.
- Solving cross coupling between antennas
- Automatic, fast, patient-specific hyperthermia treatment-planning platform.
- Enhanced MR temperature measuring technology
- Low cost sensors (temperature and E-field)
- Feedback loop technology (sensors; control algorithms)
- Low cost amplifier systems

Venue

Foundation TECHNOPARK® Zürich
Technoparkstrasse 1
8005 Zurich
Switzerland

This 1-day workshop is a part of COST EMF-MED (Action BM1309) event: www.COST-EMF-MED.eu



Keynote Lectures:

Mark Dewhirst: ***Thermal dose challenges for the 2020 hyperthermia system***

TBA: ***Solutions for high density antenna arrays***

Esra Neufeld: ***Hyperthermia treatment planning platform***

Maarten Paulides: ***Towards target conformal RF-hyperthermia: clinical perspective***

Abstract Submission:
The abstracts (max. 2 pages) must be submitted to COST-EMF-MED@fesb.hr by **May 31st, 2015**.
The abstract template can be downloaded from the following link.
The authors will be informed about the abstract acceptance by June 4th, 2015.

Registration: Please register by contacting COST EMF-MED e-mail: COST-EMF-MED@fesb.hr. Attendance to the workshop is free of charge.

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