



CARDIO-TECH 2014

*An International Meeting
on Cardiovascular Engineering and Technology*

**Saturday,
5th April 2014**

Royal Olympic Hotel
Athens, Greece

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• Dear Colleagues,

We welcome you at the International Meeting on Cardiovascular Engineering and Technology **CARDIO-TECH** which takes place in Athens at Royal Olympic Hotel on Saturday 5 April 2014. **CARDIO-TECH** which is a joined meeting with the International Congress **CARDIO ATHENA 2014**, is organized by the *First Department of Cardiology, Medical School, National and Kapodistrian University of Athens, under the auspices of Athens Medical School.*

CARDIO-TECH is an international multidisciplinary event which aims to bring together physicians, biologists, pharmacists, engineers, physicists, mathematicians, computer scientists and researchers who are activated in the field of **Biomedical Engineering**. The meeting will present the latest developments in Cardiovascular Technology and Cardiology, emphasizing on the new potentials offered by current technological breakthroughs in **prevention, diagnosis, treatment, prognosis and monitoring** of cardiovascular diseases.

The topics of the scientific program of CARDIO-TECH include cardiovascular mechanics, hemodynamics, biofluid mechanics, bio-signal analysis, imaging technologies in cardiology, cardio-informatics, nano-technology, telemedicine and artificial organs. State-of-the-art lectures will be given by world-class scientists about current strategies for risk assessment and reduction, patenting, CE-marking and medical response to emergency situations.

Ambition of CARDIO-TECH is to: (a) **inform the public** for new available technologies and capabilities in cardiology, (b) **develop collaborative networks** among researchers from different scientific areas at national and international level with focus on Balkan Countries and (c) **stimulate initiatives and actions for innovation** within a period of economic crisis.

We look forward to welcoming you in Athens and to providing you a memorable scientific experience and new horizons for multidisciplinary collaboration and innovation.

Christodoulos Stefanadis

Professor of Cardiology
Director of First Department of Cardiology
Hippokration Hospital, Athens Medical School

Chairman of CARDIO-TECH

Theodore G. Papaioannou

Assistant Professor of Biomedical Engineering,
First Department of Cardiology,
Hippokration Hospital, Athens Medical School

Vice - chairman of CARDIO-TECH

Committees of the Meeting

ORGANIZING COMMITTEE

CHAIRMAN

Christodoulos Stefanadis (Athens)

VICE-CHAIRMAN

Theodore G. Papaioannou (Athens)

MEMBERS

Elias Gialafos (Athens)

Marianna Karamanou (Athens)

Carmen Moldovan (Athens)

Athanase Protogerou (Maastricht, The Netherlands)

Emannouil Vavuranakis (Athens)

Charalambos Vlachopoulos (Athens)

Dimitrios Vrachatis (Athens)

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E. Patsouris (Athens)

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N. Sarlis (Athens)

P. Sfikakis (Athens)

D. Soulis (Athens)

D. Tousoulis (Athens)

K. Toutouzias (Athens)

G. Tsoucalas (Larissa)

E. Valanti (Athens)

S. Vassilaras (Athens)

N. Zakopoulos (Athens)

INVITED FOREIGN SPEAKERS

Raed Arafat Secretary of State of Romania and Head of the Department for Emergency Situations, Ministry of Internal Affairs, Romania

Daniela Bartos Professor of Cardiology, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania. Former Minister of Health and Family of Romania

Vasile Sarbu Academician, Professor of Surgery, Faculty of Medicine, Ovidius University of Constanta, Secretary General of the Balkan Medical Union, Romania

Jacques Blacher Professor of Therapeutics, Head of the Division of Diagnosis and Therapeutic Center at the University Hôtel-Dieu Hospital of Paris, France. Vice-president of the French Society of Hypertension

Nikolaos Stergiopoulos Professor of Biomedical Engineering and Director of Laboratory of Hemodynamics and Cardiovascular Technology, École Polytechnique Fédérale de Lausanne, Switzerland, President of Cardiovascular System Dynamics Society

Ashraf Khir Reader in Cardiovascular Mechanics, Institute of Bioengineering, Brunel University, London, UK. Member of the governing Board of the European Society of Artificial Organs

Athanase Protogerou Assistant Research Professor, Department of Internal Medicine, Maastricht University Medical Center, Maastricht, The Netherlands

⋮ Saturday, 5th April 2014

ATTICA HALL

08:55 - 09:00 **Welcome address**

C. Stefanadis

Chairman of CARDIO-TECH and CARDIO ATHENA 2014 meetings

09:00 - 09:45 **Session 1: Innovations in Blood Pressure Theranostics**

Chairs: **N. Stergiopoulos - P. Sfikakis**

*Risk assessment estimation based on brachial blood pressures: strengths and weaknesses, **A. Protogerou***

*Beyond brachial blood pressure measurement: new technologies for assessing central blood pressures, **T. G. Papaioannou***

*Telemonitoring of blood pressure, **P. Giovas***

09:45 - 10:00 **Lecture 1:**

Chair: **N. Zakopoulos**

*Resistant arterial hypertension in clinical practice, **D. Bartos***

10:00 - 11:00 **Session 2: Progress in the Imaging of Atherosclerotic Plaques**

Chairs: **D. Koutsouris - E. Efstathopoulos**

*Mummies and imaging technology: unveiling the origin of atherosclerosis, **G. Tsoucalas***

*Endothelial shear stress and OCT-based 3D reconstruction of coronary arteries for the identification of vulnerable plaque, **K. Toutouzas***

*The atheromatic plaque quality and composition plays a crucial role in computational blood flow calculations, **D. Fotiadis***

*Novel computational ultrasonic biomarkers for the assessment of carotid plaques, **S. Golemati***

11:00 - 11:30 **Coffee Break**

11:30 - 12:45 **Session 3: Cardio - Informatics**

Chairs: **D. Fotiadis - A. Manolis**

*Novel mobile-health technologies in cardiology, **D. Koutsouris - K. Giokas***

*Analysis of heart rate variability: current use - future needs, **E. Gialafos***

*Application of natural time analysis to electrocardiograms, **N.V. Sarlis***

*e-health and cardiology in the new health ecosystem, **D. Iliopoulou - K. Giokas***

*Blind source separation of cardiac and respiratory sounds for smart stethoscopes and assisted living applications, **S. Vassilaras***

12:45 - 13:00 **Lecture 2:**

Chair: **J. Lekakis**

*From risk assessment to risk reduction strategies: current status, limitations and future perspectives, **J. Blacher***

13:00 - 14:00 **Session 4: Mechanics of Circulatory System: Clinical and Engineering Aspects**

Chairs: **T.G. Papaioannou - A. Protogerou**

*Novel methods for the measurement of local pulse wave velocity, **A.W. Khir***

*Experimental fluid mechanics applied on hemodynamics related problems, **D. Mathioulakis***

*Theoretical basis in wave propagation: what physicians need to know, **N. Stergiopoulos***

*Clinical basis of carotid-to-femoral pulse wave velocity: what engineers need to know, **C. Vlachopoulos***

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ATTICA HALL

14:00 - 15:15 **Light Lunch**

15:15 - 16:15 **Session 5: Session by the members of the Hellenic Section of the Balkan Medical Union**

Chairs: **V. Sarbu - M. Karamanou**

No "heart" feelings... Exhibiting human remains in museums, **A. Doxanaki**

Transcatheter aortic valve implantation: clinical and engineering aspects, **D. Vrachatis**

A novel technique for non-invasive estimation of cardiac output, **D. Soulis**

Analyzing 24-hour heart rate variability by non-linear dynamic methods, **S. Kyrlagkitses**

Reconstituted HDL treatment induces alterations in endothelial cell migration and apoptosis pathways, **E. Valanti**

Genesis of Cardiology in ancient Greece, **A.-M. Axioti - E. Geramani**

16:15 - 17:00 **Session 6: Emerging Technologies in Cardiology**

Chairs: **D. Tousoulis - I. Kandarakis**

Applications of nano-technology in cardiology, **M. Gazouli**

Recent technological and clinical advances in cardiac MRI, **P. Danias**

Novel artificial implants and techniques for the treatment of structural heart diseases,

M. Vavuranakis - C. Moldovan

17:00 - 17:15 **Lecture 3:**

Chair: **S. Nanas**

Gold in cardiology: the fascinating history of past and present alchemists, **M. Karamanou**

17:15 - 18:00 **Coffee break**

18:00 - 18:20 **Lecture 4:**

Chair: **J. Blacher**

Invention, patenting and development of new biomedical technologies: the Swiss experience, **N. Stergiopoulos**

18:20 - 18:40 **Lecture 5:**

Chair: **N. Pallikarakis**

CE Marking: new regulations - new challenges for innovation, **G. Pappous**

18:40 - 19:10 **THE «CARDIO-TECH» LECTURE**

Chair: **C. Stefanadis**

The integrated emergency medical response in Romania and its impact on STEMI patients

Raed Arafat

MD. M.Sc. D.M.

Secretary of State and Head of the Department of Emergences, Ministry of Internal Affairs, Romania

19:10 - 20:00 **Leaders' opinion about the future of research and development in Greece**

Alternate Minister of Finance of Greece - **C. Staikouras**

President of National Organization for Medicines - **D. Litzeris**

President of Technical Chamber of Greece - **C. Spirtzis**

Member of the governing board of Athens Chamber of Commerce and Industry

& President of "Pharmathen S.A." Pharmaceutical Industry - **V. Katsos**



20:00

Closing CARDIO-TECH

CARDIO



ATHENA
2014

Διεθνές Συνέδριο Καρδιαγγειακής Ιατρικής
International Meeting on Cardiovascular Medicine