

Theme 7

Diagnostic and Therapeutic Instrumentation; Clinical Engineering



Theme Chairs:

André Dittmar,
Nanotechnologies
Institute of Lyon,
France

Jürgen Werner,
Ruhr-Universität
Bochum, Germany

ABSTRACT:

Theme 7 focuses on new principles, ideas and applications involving all kinds of instrumentation for preventive, diagnostic and therapeutic control of the patient's physiological body functions. On the diagnostic side, a survey on the measurement of body signals will be presented, with particular stress on clinical monitoring, the acquisition of bioelectric and biomagnetic signals, and bioimpedance analysis. The spectrum of therapeutic intervention and instrumentation primarily comprises assistance, therapy or substitution of cardiovascular, renal, pulmonary, hepatic, pancreatic and other metabolic functions, as provided by instrumentation for cardiac, circulatory, respiratory and dialysis support, and by all types of injection, infusion, anaesthesia and sleep control systems. Special tracks will focus on laser applications in medicine and topics of clinical engineering, such as the design, management and safety of clinical instruments and tools, and interactions within the patient/biomedical techniques/clinician system.

The theme offers a unique platform for exchanges on the latest developments in controlling and restoring vital body functions. Scientists, engineers, medical doctors and personnel, medical managers, as well as potential patients will profit from the interdisciplinary and authentic display of present and future developments in central and crucial topics of healthcare.

TRACKS:

Anaesthesia Systems

Track Chairs:
Guy Dumont,
University of British
Columbia,
Vancouver, Canada

Hartmut Gehring,
University Medical Center
Schleswig-Holstein,
Lübeck, Germany

Bioelectric & Bio-magnetic Signals

Track Chairs:
Jens Haueisen,
Technical University
Ilmenau, Germany

Arye Nehorai,
Washington University,
St. Louis, USA

Bioimpedance

Track Chairs:
Steffen Leonhardt,
RWTH Aachen University,
Germany

Hermann Scharfetter,
Graz University of
Technology, Austria

Cardiovascular Systems

Track Chairs:
Yusuke Abe,
University of Tokyo, Japan

Thomas Schmitz-Rode,
RWTH Aachen University,
Germany

Clinical Engineering

Track Chairs:
Tony Easty,
Toronto General Hospital,
Canada

Uvo Hölscher,
Münster University of
Applied Sciences,
Germany

Heikki Teriö,
Karolinska University Hos-
pital, Stockholm, Sweden

Dialysis & Apheresis Systems

Track Chairs:
Matthias Krämer,
Fresenius Biotech GmbH,
Bad Homburg, Germany

Daniel Schneditz,
Medical University of
Graz, Austria

Injection & Infusion Systems

Track Chairs:
Ewald Konecny,
University of Lübeck,
Germany

Helmut Schwilden,
University Erlangen-
Nuremberg, Germany

Lasers in Medicine

Track Chairs:
Serge Mordon,
Lille University Hospital,
France

Hans-Dieter Reidenbach,
Cologne University of
Applied Sciences,
Germany

Monitoring

Track Chairs:
Michael Imhoff,
Ruhr-University
Bochum, Germany

Joerg-Uwe Meyer,
Richard Wolf GmbH,
Knittlingen, Germany

Pulmonary Systems

Track Chairs:
Marcelo Amato,
Universidade de São Paulo,
Brazil

Steffen Leonhardt,
RWTH Aachen University,
Germany

Sleep

Track Chairs:
Diane B. Boivin,
McGill University,
Montreal, Canada

Thomas Penzel,
Charité,
Berlin, Germany