CONTENTS

INVITED SPEAKERS

KEYNOTE SPEAKERS

Managing Systems in Remote Monitoring - A Complex Challenge Turned into an Important Clinical Tool
Mario Oliveira

Of Bats and Men
Patrick Flandrin

Frontiers of Surgical Robotics
Cesare Stefanini

GWAS Across Space and Time - What Have We Learned?
Arcadi Navarro

Image Analysis Challenges in Translational Molecular Imaging Research
Boudewijn Lelieveldt

PAPERS

FULL PAPERS

Fabrication of Precise Micro-fluidic Devices using a Low-cost and Simple Contact-exposure Tool for Lithography
Toshuyuki Horiuchi and Shinpei Yoshino

Signal Quality in Dry Electrode EEG and the Relation to Skin-electrode Contact Impedance Magnitude
Alexandra-Maria Tautan, Vojkan Mihajlovic, Yun-Hsuan Chen, Bernard Grundlehner, Julien Penders and Wouter Serdijn

Geometrical Improvement of a Noninvasive Core Temperature Thermometer based on Numeric Modeling and Experiment Validation
Ming Huang, Toshiyo Tamura, Wexi Chen, Kei-ichiro Kitamura, Tetsu Nemoto and Shigehiko Kanaya

Low Power Remote Neonatal Temperature Monitoring Device
Hiteshwar Rao, Dhruv Saxena, Saurabh Kumar, Sagar G. V., Bharadwaj Amrutur, Prem Mony, Prashanth Thackachen, Kiruba Shankar, Suman Rao and Swarnarekha Bhat

Miniaturized Antenna Array with Low Correlation for Telemedicine and Body Area Networks Applications
Haider Khaleel, Chitranjan Singh, Hussain Al-Rizzo and Seshadri Mohan

VLSI Wavelet Denoising of Neural Signals - Critical Appraisal of Different Algorithmic Solutions for Threshold Estimation
Nicola Carta, Danilo Pani and Luigi Raffo

Development of Concurrent Object-oriented Logic Programming System to Intelligent Monitoring of Anomalous Human Activities
Alexei A. Morozov, Abhishek Vaish, Alexander F. Polupanov, Vyacheslav E. Antciperov, Igor I. Lychkov, Aleksandr N. Alfimtsev and Vladimir V. Deviatkov
Short Papers

Neural Networks Controller of a Lower Limbs Robotic Rehabilitation Chair
M. A. Mamou and N. Saadia

Versatile Low-cost Modular Microfluidic Arrays for Cancer Diagnostics
James F. Rusling, Colleen Krause, Brunah Otieno, Karteek Kadimisetty, Chi Tang, Abhay Vaze and Gregory Bishop

Development of Retention System of the Autonomous Endoscopic Capsule and Its Functionalities
Dmitry Mikhaylov, Timur Khabibullin, Igor Zhukov, Andrey Starikovskiy, Landish Gubaydulina, Natalya Romanchuk and Vladimir Konev

Smartphone Applications for Indoor Real-Time Location Systems (RTLSs) with Bluetooth Low Energy
Naoya Arisaka, Noritaka Mamorita and Akihiro Takesuchi

Spasticity Assessment through Pendulum Testing in Individuals with Tetraplegia Undergoing Rehabilitation with Neuromuscular Electrical Stimulation
Eliza Regina Ferreira Braga Machado de Azevedo, Renata Manzano Maria, Renato Varoto, Karina Cristina Alonso and Alberto Cliquet Junior

Non-invasive Pain Sensor Development for Advanced Control Strategy of Anesthesia - A Conceptual Study
Dana Copot, Amélie Chevalier, Clara M. Ionescu and Robin De Keyser

Biosensors as Emerging Market: Obstacles to Implement - Russian Case
A. A. Balyakin, E. V. Blokhina, G. E. Kunina and S. B. Taranenko

Noninvasive Glucose Monitoring by Mid-infrared Self-emission Method
Yen-chun Yeh, Sheng Yang, Fan Zhao and Dominik Schmidt

Design of a 50MΩ Transimpedance Amplifier with 0.98fa/√Hz Input Inferred Noise in a 0.18μM CMOS Technology
William Wilson and Tom Chen

Motion Capturing with Inertial Measurement Units and Kinect - Tracking of Limb Movement using Optical and Orientation Information
Christoph Kalkbrenner, Steffen Hacker, Maria-Elena Algorri and Ronald Blechschmidt-Trapp

Gait Analysis with IMU - Gaining New Orientation Information of the Lower Leg
Steffen Hacker, Christoph Kalkbrenner, Maria-Elena Algorri and Ronald Blechschmidt-Trapp

A Label-free Detection of Carcinoembryonic Antigen (CEA) using Micromechanical Biosensors
Meisam Omidi, Mohammadmehdi Choolaei, F. Haghiralsadat, M. Azhdari, N. Davodi Moghadam and F. Yazdian

The Application of Mobile Devices for the Recognition of Malignant Melanoma
Dmitriy Dubovitskiy, Vladimir Devyatkov and Glenn Richer

Test Bench for Analysis of Harmful Vibrations Induced to Wheelchair Users
A. Ababou, N. Ababou, T. Morsi and L. Boukhechem

Electrical Stimulation of the Transcutaneous Posterior Tibial Nerve for the Treatment of Patients with Detrusor Overactivity Due to Neurogenic Hiperactive Bladder in Multiple Sclerosis - A Case Study
Fabiana S. B. Perez, Luciana R. Tenório Peixoto, Fabiano Soares, Cristiano Jacques Miosso and Adson F. da Rocha
Mechanically Flexiable Biosensor for Detection of Photoplethysography
Kian Davoudi, Moein Shayeganyan, Kouhyar Tavakolian and Bozena Kamisnka

Towards Logic Circuits based on Physarum Polycephalum Machines - The Ladder Diagram Approach
Andrew Schumann, Krzysztof Pancerz and Jeff Jones

Tunable Fabry-Pérot Filter for Optical Glucose Monitoring
Xin Zhao and Schmidt J. Dominik

Label-free Immobilization of Nano-particles on Silicon based Electrodes for Single-biomolecule Studies

Continuous Core Body Temperature Estimation via SURFACE Temperature Measurements using Wearable Sensors - Is it Feasible?
Kumar Saurabh, Hiteshwar Rao, Bharadwaj Amrutur and Asokan Sundararajan

Snake Method Enhanced using Canny Approach Implementation for Cancer Cells Detection in Real Time
Ahmad Chaddad, Camel Tanougast and Abbas Dandache

Handwritten Processing for Pre Diagnosis of Alzheimer Disease
Donato Impedovo, Giuseppe Pirlo, Donato Barbuzzi, Alessandro Balestrucci and Sebastiano Impedovo

Pressure Sensor for Gastrointestinal Intraluminal Measuring
L. R. Silva, P. J. Sousa, L. M. Goncalves and G. Minas

Pre-impact Fall Detection using Wearable Sensor Unit
Soonjae Ahn, Isu Shin, Bora Jeong and Youngho Kim

ICT-enabled Medical Compression Stocking for Treatment of Leg Venous Insufficiency
Troels Fedder Jensen, Finn Overgaard Hansen, José Antonio Esparza Isasa, Peter Hogh Mikkelsen, Tomi Hakala and Timo Vuorela

Preliminary Design of Bilio-digestive Anastomosis by Magnetic Compression
Mélanie Courtaudière, Nicolas Andreff and Stéphane Koch

Hinged External Fixators for Knee Rehabilitation - Kinematic Concept of a Two Degree-of-Freedom System
Gianluca Gatti, Shadi Shweiki, Giorgia Lupinacci, Gionata Fragomeni and Guido Danieli

Assessing the Validity of Attitude and Heading Reference Systems for Biomechanical Evaluation of Motions - A Methodological Proposal
Karina Lebel, Patrick Boissy, Christian Duval, Mandar Jog, Mark Speechley, Anthony Karelis, Claude Vincent, James Frank and Roderick Edwards

Estimation of Arterial Stiffness through Pulse Transit Time Measurement
Avinash S. Vaidya, T. S. L. Radhika, M. B. Srinivas and Mannan Mridha

A Biofeedback System for Continuous Monitoring of Bone Healing

The New Directive 2013/35/EU on Occupational Exposure to Electromagnetic Fields and Electrical Workers’ Use of Cardiac Pacemakers
Leena Korpinen, Rauno Pääkkönen, Martine Souques and Vesa Virtanen
A Low Cost Design of Powered Ankle-Knee Prosthesis for Lower Limb Amputees - Preliminary Results
Ruben C. Martinez, Roberto L. Avitia, Miguel E. Bravo and Marco A. Reyna

Can Simple Electronic Instrumentation Associated with Basic Training Help Users of Assistive Devices? - Presenting and Verifying the Effectiveness of a Biofeedback Module for an Instrumented Crutch
Renato Varoto, Aline Midori Rodrigues Sato, Carolina Lins and Alberto Cliquet Jr.

A New Integration Method for Mounting and in vivo Handling of Sub-mm Flexible Cuff Electrode
Fábio Rodrigues and Paulo Mendes

Designing Next-generation Implantable Wireless Telemetry
Deyasini Majumdar, Christian Schlegel, Navid Rezaei and Bruce Cockburn

Electrical Stimulation System to Relax the Jaw Elevation Muscles in People with Nocturnal Bruxism
Pablo Aqueveque, Roberto Lopez and Esteban Pino

Design, Development and Implementation of μSPC Phantom for Quality Control in Micro-SPECT / CT and Micro-PET / CT Systems
Hatem Besbes, Nejla Majoul, Fatma Ben Hamida and Philippe Choquet

Development of an Automatic System for Persistent Collection of Physiological Information - Toward Long-Term Application in Biorhythm Monitoring and Healthcare
Wenxi Chen and Xun Gong

An Improved Electrolytic Pump for Potential Drug Delivery Applications
Ying Yi, Ulrich Buttner, Armanito Arpys Carreno and Ian G. Foulds

SPECIAL SESSION ON TECHNOLOGY FOR PEOPLE WITH DISORDERS OF THE UPPER AN THE LOWER LIMBS

FULL PAPERS

Forceplates Data Reliability Tested on Children with Neuromuscular Disabilities
Sarah Rosen, Carole A. Tucker and Rahamim Seliktar

TheraDrive in a Robot Gym - Toward Stroke Rehabilitation beyond Inpatient Rehabilitation Settings in USA and Mexico
Michelle J. Johnson, Sandra Montes and Karla Bustamante

PIPSS - A Portable Instrument Postural Stability System to Assess Dynamic Postural Stability
Michael Korostelev, Li Bai, Assaf Zoor and Carole A. Tucker

Development and Testing of a Modular Upper Extremity Exoskeleton for Infants
Tariq Rahman, Cole Galloway, Elena Kokkoni and Michele Lobo

SHORT PAPERS

A Contribution to Motorized Rehabilitation Devices
Alena Galajdova, Dusan Simsik, Boris Jobbagy and Marián Veseliny

Automated System for Balance Error Scoring
Paarth Dave, iyad Obeid and Carole Tucker

AUTHOR INDEX