

The International Federation for Medical and Biological Engineering, IFMBE, is a federation of national and transnational organizations representing internationally the interests of medical and biological engineering and sciences. The IFMBE is a non-profit organization fostering the creation, dissemination and application of medical and biological engineering knowledge and the management of technology for improved health and quality of life. Its activities include participation in the formulation of public policy and the dissemination of information through publications and forums. Within the field of medical, clinical, and biological engineering, IFMBE's aims are to encourage research and the application of knowledge, and to disseminate information and promote collaboration. The objectives of the IFMBE are scientific, technological, literary, and educational.

The IFMBE is a WHO accredited NGO covering the full range of biomedical and clinical engineering, healthcare, healthcare technology and management. It is representing through its 58 member societies some 120.000 professionals involved in the various issues of improved health and health care delivery.

IFMBE Officers

President: Makoto Kikuchi, Vice-President: Herbert Voigt, Former-President: Joachim H. Nagel

Treasurer: Shankar M. Krishnan, Secretary-General: Ratko Magjarevic

<http://www.ifmbe.org>

Previous Editions:

IFMBE Proceedings ICDBME 2010, "The Third International Conference on the Development of Biomedical Engineering in Vietnam", Vol. 27, 2010, Ho Chi Minh City, Vietnam, CD

IFMBE Proceedings MEDITECH 2009, "International Conference on Advancements of Medicine and Health Care through Technology", Vol. 26, 2009, Cluj-Napoca, Romania, CD

IFMBE Proceedings WC 2009, "World Congress on Medical Physics and Biomedical Engineering", Vol. 25, 2009, Munich, Germany, CD

IFMBE Proceedings SBEC 2009, "25th Southern Biomedical Engineering Conference 2009", Vol. 24, 2009, Miami, FL, USA, CD

IFMBE Proceedings ICBME 2008, "13th International Conference on Biomedical Engineering", Vol. 23, 2008, Singapore, CD

IFMBE Proceedings ECIFMBE 2008 "4th European Conference of the International Federation for Medical and Biological Engineering", Vol. 22, 2008, Antwerp, Belgium, CD

IFMBE Proceedings BIOMED 2008 "4th Kuala Lumpur International Conference on Biomedical Engineering", Vol. 21, 2008, Kuala Lumpur, Malaysia, CD

IFMBE Proceedings NBC 2008 "14th Nordic-Baltic Conference on Biomedical Engineering and Medical Physics", Vol. 20, 2008, Riga, Latvia, CD

IFMBE Proceedings APCMBE 2008 "7th Asian-Pacific Conference on Medical and Biological Engineering", Vol. 19, 2008, Beijing, China, CD

IFMBE Proceedings CLAIB 2007 "IV Latin American Congress on Biomedical Engineering 2007, Bioengineering Solution for Latin America Health", Vol. 18, 2007, Margarita Island, Venezuela, CD

IFMBE Proceedings ICEBI 2007 "13th International Conference on Electrical Bioimpedance and the 8th Conference on Electrical Impedance Tomography", Vol. 17, 2007, Graz, Austria, CD

IFMBE Proceedings MEDICON 2007 "11th Mediterranean Conference on Medical and Biological Engineering and Computing 2007", Vol. 16, 2007, Ljubljana, Slovenia, CD

IFMBE Proceedings BIOMED 2006 "Kuala Lumpur International Conference on Biomedical Engineering", Vol. 15, 2004, Kuala Lumpur, Malaysia, CD

IFMBE Proceedings WC 2006 "World Congress on Medical Physics and Biomedical Engineering", Vol. 14, 2006, Seoul, Korea, DVD

IFMBE Proceedings BSN 2007 "4th International Workshop on Wearable and Implantable Body Sensor Networks", Vol. 13, 2006, Aachen, Germany

IFMBE Proceedings ICBMEC 2005 "The 12th International Conference on Biomedical Engineering", Vol. 12, 2005, Singapore, CD

IFMBE Proceedings Vol. 27

Vo Van Toi · Truong Quang Dang Khoa (Eds.)

The Third International Conference on the Development of Biomedical Engineering in Vietnam

BME2010

11–14 January, 2010

Ho Chi Minh City, Vietnam

 Springer

Editors

Vo Van Toi
Chair of Biomedical Engineering Department
International University - Vietnam National
Universities at HCM
Quarter 6, Linh Trung, Thu Duc Dist.
Ho Chi Minh City, Vietnam
E-mail: vvtoi@hcmiu.edu.vn

Truong Quang Dang Khoa
Biomedical Engineering Department
International University - Vietnam National
Universities at HCM
Quarter 6, Linh Trung, Thu Duc Dist.
Ho Chi Minh City, Vietnam
E-mail: tqdkhoa@hcmiu.edu.vn

ISSN 1680-0737

ISBN 978-3-642-12019-0

e-ISBN 978-3-642-12020-6

DOI 10.1007/978-3-642-12020-6

Library of Congress Control Number: 2010922304

© International Federation for Medical and Biological Engineering 2010

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilm or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permissions for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

The use of general descriptive names, registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The IFMBE Proceedings is an Official Publication of the International Federation for Medical and Biological Engineering (IFMBE)

Typesetting: Scientific Publishing Services Pvt. Ltd., Chennai, India.

Cover Design:

Printed on acid-free paper

9 8 7 6 5 4 3 2 1

springer.com

About IFMBE

The International Federation for Medical and Biological Engineering (IFMBE) was established in 1959 to provide medical and biological engineering with a vehicle for international collaboration in research and practice of the profession. The Federation has a long history of encouraging and promoting international cooperation and collaboration in the use of science and engineering for improving health and quality of life.

The IFMBE is an organization with membership of national and transnational societies and an International Academy. At present there are 52 national members and 5 transnational members representing a total membership in excess of 120000 worldwide. An observer category is provided to groups or organizations considering formal affiliation. Personal membership is possible for individuals living in countries without a member society. The International Academy includes individuals who have been recognized by the IFMBE for their outstanding contributions to biomedical engineering.

Objectives

The objectives of the International Federation for Medical and Biological Engineering are scientific, technological, literary, and educational. Within the field of medical, clinical and biological engineering its aims are to encourage research and the application of knowledge, and to disseminate information and promote collaboration.

In pursuit of these aims the Federation engages in the following activities: sponsorship of national and international meetings, publication of official journals, cooperation with other societies and organizations, appointment of commissions on special problems, awarding of prizes and distinctions, establishment of professional standards and ethics within the field, as well as other activities which in the opinion of the General Assembly or the Administrative Council would further the cause of medical, clinical or biological engineering. It promotes the formation of regional, national, international or specialized societies, groups or boards, the coordination of bibliographic or informational services and the improvement of standards in terminology, equipment, methods and safety practices, and the delivery of health care.

The Federation works to promote improved communication and understanding in the world community of engineering, medicine and biology.

Activities

Publications of IFMBE include: the journal *Medical and Biological Engineering and Computing*, the electronic magazine *IFMBE News*, and the Book Series on Biomedical Engineering. In cooperation with its international and regional conferences, IFMBE also publishes the IFMBE Proceedings Series. All publications of the IFMBE are published by Springer Verlag. The Federation has two divisions: Clinical Engineering and Health Care Technology Assessment.

Every three years the IFMBE holds a World Congress on Medical Physics and Biomedical Engineering, organized in cooperation with the IOMP and the IUPESM. In addition, annual, milestone and regional conferences are organized in different regions of the world, such as Asia Pacific, Europe, the Nordic-Baltic and Mediterranean regions, Africa and Latin America.

The administrative council of the IFMBE meets once a year and is the steering body for the IFMBE: The council is subject to the rulings of the General Assembly, which meets every three years. Information on the activities of the IFMBE can be found on the web site at: <http://www.ifmbe.org>.

Preface

Vietnam is a rapidly developing, socially dynamic country, where interest in biomedical engineering activities has grown considerably in recent years. The leadership of the Vietnamese government, and of research and educational institutions, are well aware of the importance of this field for the development of the country and have instituted policies to promote its development. The political, economic and social environment within the country offers unique opportunities for the international community and this conference was intended to provide a vehicle for the sharing of experiences; development of support and collaboration networks for research; and exchange of ideas on how to improve the educational and entrepreneurial environment to better address the urgent needs of Vietnam.

In January 2004, under the sponsorship of the U.S. National Science Foundation, a U.S. delegation that consisted of Biomedical Engineering professors from different universities in the United States, visited several universities and research institutions in Vietnam to assess the state of development of this field. This delegation proposed a five year plan that was enthusiastically embraced by the international scientific communities to actively develop collaborations with Vietnam.

Within this framework, in July 2005, the First International Conference on the Development of Biomedical Engineering in Vietnam was held in Ho Chi Minh City. From that conference a Consortium of Vietnam-International Universities was created to advise and assist the development of Biomedical Engineering in Vietnamese universities.

In July 2007, the Second International Conference on the Development of Biomedical Engineering in Vietnam was held in Hanoi. During this event the Vietnamese Association of Biomedical Science and Engineering was endorsed by the Asia-Pacific International Molecular Biology Network (AIMBN), Biomedical Engineering Society Singapore (BESS), International Federation for Medical and Biological Engineering (IFMBE), Société Française de Génie Biologique et Médical (SFGBM) and IFMBE Asia-Pacific Working Group.

In March 2009, International University (IU), a member of Vietnam National Universities – Ho Chi Minh City (VNU-HCM), one of the two most famous university networks in Vietnam established its Biomedical Engineering Department and the first accredited Biomedical Engineering degree in Vietnam (code: 52.42.02.04). IU is the first public university in Vietnam that teaches all courses in English and was created as a new model to modernize the higher education in Vietnam.

The Third International Conference on the Development of Biomedical Engineering in Vietnam was organized on January 11–14, 2010, by IU in Ho Chi Minh City, Vietnam and had the theme of: “**New frontiers in Biomedical Engineering**”. It reflected the steady growth of the activities in this field in Vietnam, and featured the contributions of researchers of 21 countries, including: Australia, Belgium, Canada, Denmark, France, India, Japan, Korea, Malaysia, New Zealand, Philippines, Poland, Russia, Singapore, Spain, Switzerland, Taiwan, Thailand, United Kingdom, the United States and Vietnam. The main keynote speaker was Dr. John C. Gore, University Professor of Radiology and Radiological Sciences, Biomedical Engineering, and Physics, and Director of Vanderbilt University Institute of Imaging Science (U.S.). The special topic keynote speakers were Dr. Robert E. Burrell, Professor and Canada Research Chair in Nano-structured Biomaterials (Canada); Dr. K. Kirk Shung, Professor and Director of National Institutes of Health Resource on Medical Ultrasonic Transducer Technology of University of Southern California, (U.S.); and Dr. Regis B. Kelly, Professor and Director of California Institute for Quantitative Biosciences (QB3) (U.S.). Besides the invited, oral and poster presentations there were tutorial lectures to educate junior researchers in different subfields of Biomedical Engineering. This volume summarizes those presentations and was provided as an education foundation and scientific reference. The Conference constituted a kick-off event to celebrate the 15 Anniversary of the establishment of VNU-HCM and also hosted the Clinical Engineering Workshop of the IFMBE Asia Pacific Working Group.

The editors would like to thank the leadership of VNU-HCM and IU, and the staff of Biomedical Engineering Department and of difference offices of IU for their valuable support for the conference and their assistance in the editing and publication of this volume.

Vo Van Toi and Truong Quang Dang Khoa
Biomedical Engineering Department
International University of the Vietnam National Universities – Ho Chi Minh
www.hcmiu.edu.vn/bme
bme@hcmiu.edu.vn

Table of Contents

Keynote Speakers

Challenges and Opportunities of Ultra-High Field MRI	1
<i>A.N. Dula, E.B. Welch, J.L. Creasy, J.C. Gatenby, E.A. Stringer, L.M. Chen, A.W. Anderson, M.J. Avison, J.C. Gore</i>	
Nanocrystalline Silver: Novel Structure and Activity	6
<i>Robert E. Burrell, Patricia Nadworny</i>	
Ultrasound: Past, Present and Future	10
<i>K. Kirk Shung</i>	
Bioengineering in Vietnam	14
<i>Regis B. Kelly</i>	

Invited Speakers

Detection and Treatment of Diseases Using Light	19
<i>W. Pham</i>	
Magnetic Resonance Imaging of Schizophrenia and Alzheimer's Disease	23
<i>A.W. Anderson, X. Hong, L.R. Arlinghaus, M. Tumuklu, Thornton-Wells, R.E. Hoffman, S. Park, H.Y. Meltzer</i>	
Current Development of Neuroimaging Using PET Techniques	27
<i>A.L. Brownell</i>	
Peanut Agglutinin-Immobilized Fluorescent Nanospheres with Surface Poly(N-vinylacetamide) Chains as a Novel Colonoscopic Imaging Agent	31
<i>S. Sakuma, K. Hiwatari, T. Yano, K. Iwata, Y. Masaoka, M. Kataoka, H. Tachikawa, Y. Shoji, R. Kimura, K. Nakamura, H. Ma, Z. Yang, L. Tang, R.M. Hoffman, S. Yamashita</i>	
Techniques for the Incorporation of Fluorine-18 and Carbon-11	35
<i>Nickels, W. Pham</i>	

Modeling

Dynamic Model Identification of PAM-Based Rehabilitation Robot Using Neural MIMO NARX Model	39
<i>Ho Pham Huy Anh, Le Tan Loi</i>	
Simulation of the Gait of a Patient Specific Model of Post Polio Residual Paralysis (PPRP): Effect of the Orthosis	44
<i>T.T. Dao, P. Pouletaut, F. Marin, P. Aufaure, F. Charleux, M.C. Ho Ba Tho</i>	
Mechanical Behavior of Muscles during Flexion and Extension of Lower Limb on Variable Age Group by Using BRG.LifeMod	48
<i>Nitin Sahai, Ravi P. Tewari, Lokesh Singh</i>	

Biomechanics of Index Finger during Mouse Click	51
<i>P. Chivapornthip, E.L.J. Bohez, S. Nanthavanij, K. Sitthiseripratip, E. Lorprayoon</i>	
Numerical Study of Deformation-Induced Fluid Flows in Osteonal Matrix	55
<i>V.-H. Nguyen, T. Lemaire, S. Naili</i>	
Evaluation Spatial-temporal and Pressure Parameters of Normal Cats at Walk, Using a Pressure Walkway	59
<i>T. LeQuang, P. Maitre, A. Colin, E. Viguier</i>	
Gait Analysis for Sound Dogs at a Walk by Using a Pressure Walkway	62
<i>T. LeQuang, P. Maitre, A. Colin, T. Roger, E. Viguier</i>	
Robust Design with Time-Oriented Responses for Regenerative Medicine Industry	67
<i>N.K.V. Truong, S.M. Shin, Y.S. Choi, S.H. Jeong, B.R. Cho</i>	
Cerebral Palsy Classification Using Heuristics and Belief Decision Tree: A Preliminary Study	71
<i>T.T. Dao, F. Marin, F. Mégrot, M.C. Ho Ba Tho</i>	
Test for Determinism and Nonlinearity in Near Infrared Spectroscopy Data	75
<i>N.T. Dzung</i>	
Multifractality in NIRS Data of Brain Activity	80
<i>N.T. Dzung</i>	
Instrumentation	
Design, Fabrication and Analysis of Silicon Microneedles for Transdermal Drug Delivery Applications	84
<i>D.W. Bodhale, A. Nisar, N. Afzulpurkar</i>	
Heat-Stress Relationships of Rat Cardiac Trabeculae Determined Using a Micromechanocalorimeter	90
<i>J.-C. Han, A.J. Taberner, P.M.F. Nielsen, R.S. Kirton, D.S. Loisselle</i>	
About the Operating Principles of System DDFAO “(Dépistage et Diagnostique Fonctionnel Assisté Par Ordinateur)”	94
<i>Huynh Luong Nghia, Nguyen Van Tiep</i>	
A Design of Renal Dataflow Control and Patient Record Management System for Renal Department Environment in Vietnam	98
<i>Hai D. Vu, Thuan D. Nguyen, Ngoc P. Pham, Huy Q. Hoang, Thanh V. Pham</i>	
Anisotropy of Longitudinal Wave Velocity in Spherically Shaped Bovine Cortical Bone	102
<i>K. Yamamoto, T. Nakatsuji, M. Indo, T. Yanagitani, M. Matsukawa, K. Yamazaki</i>	
Calculating the Dosimetry Distribution of Leksell Gamma Knife in Phantom Zupal Head by Using MCNP5	106
<i>Dang Truong Ka My, Dang Nguyen Phuong, Truong Thi Hong Loan, Mai Van Nhon</i>	
A Program for Locating Possible Breast Masses on Mammograms	110
<i>Viet Dzung Nguyen, Duc Thuan Nguyen, Tien Dzung Nguyen, Thom Thao Nguyen Thi, Duc Hoa Tran</i>	

Retrospective Study of Biomechanical Factors Influencing Early Clinical Results of the Munting Stemless Hip Prosthesis	114
<i>F. Boucher, P. Pouletaut, E. Munting, M.C. Ho Ba Tho</i>	
Integrated Approaches for Personalised Cranio-Maxillofacial Implant Design and Manufacturing	119
<i>L.C. Hieu, E. Bohez, J.V. Sloten, L.T. Hung, L. Khanh, N. Zlatov, P.D. Trung</i>	
Current Medical Product Development for Diagnosis, Surgical Planning and Treatment in the Areas of Neurosurgery, Orthopaedic and Dental-Cranio-Maxillofacial Surgery in Vietnam	123
<i>L.C. Hieu, L.H. Quoc, V.V. Thanh, T.D. Nguyen, P.V. An, L.T. Hung, L. Khanh</i>	
Glass Nanopipette: Fabrication and Application for Studying Living Cells	127
<i>Duong Chi Dung, Huynh Luong Nghia, V.P. Veiko, A.O. Golubok, E.B. Yakovlev</i>	
Resolution Study of Ultrasound Reflections in Bovine Vertebral Bones <i>In-Vitro</i>	130
<i>L.H. Le, C. Zhang, E. Lou</i>	
Light-Emitting Diodes (LEDs): An Artificial Lighting Source for Biological Studies	134
<i>Duong Tan Nhut, Nguyen Ba Nam</i>	
A Novel Electronic Cervical Range of Motion Measurement System	140
<i>E. Lian, J. Hachadorian, Ngo Thanh Hoan, Vo Van Toi</i>	
Measurement of the Range of Neck Motion: A Comparative Study	144
<i>J. Hachadorian, A. Lugo, E. Lian, Truong Quang Dang Khoa, Vo Van Toi</i>	
Molecular/Cell	
Extract an Irregular Structure of an Echinocytes Using Morphological Operations	148
<i>Hoang Manh Ha, Thai Thanh Nga</i>	
Study on Artificial Scaffold from Cancellous Bone	152
<i>To Minh Quan, Thai Tu Thanh, Phan Kim Ngoc, Tran Le Bao Ha</i>	
Report Case: Cultured Keratinocyte Autograft on Collagen from Amniotic Membrane for Treatment the Injured Human Skin	155
<i>Tran Le Bao Ha, Huynh Minh Tuan, Tran Thi Thanh Thuy, Tran Cong Toai, Hoang Nghia Son</i>	
Doxorubicin Delivery by Copolymeric Nanoparticle for Treatment of Breast Cancer	159
<i>N.V. Cuong, J.L. Jiang, M.F. Hsiesh</i>	
Regeneration of Pancreatic β Cells of Type 1 Diabetic Mouse by Stem Cell Transplantation ..	163
<i>Pham Van Phuc, Pham Le Buu Truc, Duong Thanh Thuy, Truong Hai Nhung, Doan Chinh Chung, Nguyen Khac Toan, Ma Kien Phuc, Phan Kim Ngoc</i>	
Results of Curing Some Diseases by Stem Cell Transplantation at Stem Cell R&D Laboratory	167
<i>Phan Kim Ngoc, Pham Van Phuc</i>	
Regulations of Cell Division from Streptomyces That May Play an Important Role in Drug Resistance	171
<i>Nguyen H.K. Tu</i>	

Cellular Bio-corrosion of Metal Implants and Effects of Metal Ions on Bone Cells and Immune Cells	175
<i>Filgueira, E. Chan, D. Cadosch</i>	
Chitosan Hydrogel as an Immunoisulative Barrier for Xenogeneic Islet Transplantation	179
<i>K.C. Yang, Z. Qi, F.H. Lin, C.C. Wu, S. Sumi</i>	
The Method to Encourage Biological Cell Division with Vibration and Circulation Technique Using Optical Manipulating	182
<i>N. Watanabe, K. Taguchi</i>	
Imaging	
Adaptive Cross-Point Regions for Lossless Images Compression	186
<i>T.T. Dang, T.D. Vu, T.P. Vo</i>	
Cortical Bone Microelasticity Assessed with Scanning Acoustic Microscopy: Relationship to Nanostructural Characteristics across a Human Osteon	190
<i>Mathilde Mouchet, Aurélien Gourrier, Fabienne Rupin, Kay Raum, Françoise Peyrin, Amena Saïed, Pascal Laugier</i>	
The Overview of Tomographic Algorithms Used in Medical Imaging Equipments	193
<i>Huynh Luong Nghia, Tran Anh Quang</i>	
Adaptive Complex Wavelet Technique for Medical Image Denoising	196
<i>Nguyen Thanh Binh, Ashish Khare</i>	
Three Dimensional Medical Image Processing and Analysing Software	200
<i>Tran Phan Son Giang</i>	
Biomaterial	
Formation of Biodegradable Copolymeric Nanoparticles for Anticancer Drug Delivery	203
<i>N.T.H. Anh, N.V. Cuong, N.K. Hoang</i>	
Synthesis and in <i>Vitro</i> Cell Compatibility of α-Tricalcium Phosphate-Based Apatite Cement Containing Tricalcium Silicate	207
<i>L.J. Cardenas, A. Takeuchi, K. Tsuru, S. Matsuya, K. Ishikawa</i>	
In Vitro Culture and Differentiation of Osteoblasts on Coral Scaffold from Human Bone Marrow Mesenchymal Stem Cells	211
<i>C. Gargiulo, H.D. Thao, H.M. Tuan, T.T.T. Thuy, P.H. Van, L. Filgueira, T.C. Toai</i>	
Evaluation of Novel Carbon Nano-tube Particles in the Bacterial and Viral DNA and RNA Extraction from the Clinical Samples	216
<i>S.T. Pham, K.C. Nguyen, D.X.A. Vo, H.N. Hoang, L.T.T. Ho, H.V. Pham</i>	
Stem Cell Origin and Microenvironment Contribution for NF1-Associated Neurofibromas ...	219
<i>L.Q. Le, T. Shipman, D.K. Burns, L.F. Parada</i>	
Green Tea Epigallocatechin Gallate Exhibits Anticancer Effect in Human Pancreatic Carcinoma Cells via Inhibition of Both FAK and IGF-1R	223
<i>H.A. Vu, Y. Beppu, H.T. Chi, K. Sasaki, H. Yamamoto, P.T. Xinh, T. Tanii, Y. Hara, T. Watanabe, Y. Sato, I. Ohdomari</i>	

Application of Shrimp Chitosan Solution as Additive and Supplementing Ingredient in Culturing 3T3 Fibroblast Cells	227
<i>Nguyen Van Toan, Nguyen Duc Tam</i>	
Preparation of Size-Controlled BSA Nanoparticles by Intermittent Addition of Desolvating Agent	231
<i>Hoang Hai Nguyen, Sanghoon Ko</i>	
Mechanical Properties of a Single Trabecula in Bovine Femur by the Three Point Bending Test	235
<i>Kazuto Tanaka, Yusuke Kita, Tsutao Katayama, Mami Matsukawa</i>	
Ultrasonic Characterization of Bovine Bone Marrow	239
<i>Tomohiro Kubo, Nicolas Cazier, Takashi Saeki, Mami Matsukawa</i>	
Tribological Response of Cobalt-Chromium Femoral Head under Lubrication of Bovine Serum Albumin	243
<i>Cong-Truyen Duong, Seonghun Park</i>	
Educational Model	
VEF-Sponsored HUT Biomechanics Course	247
<i>B.S. Kelley, B.R. Rigby, H.D. Vu</i>	
Building an Elearning Website for Biomedical Engineering Education	251
<i>H.Q. Huy, N.D. Thuan, V.D. Hai</i>	
Others	
Ethnic Differences in Dietary Intake and the Association between Dietary Intake and Gastric Cancer Risk in Chinese Subjects Resident in Malaysia	255
<i>D.M. Ha, D. Forman, K.L. Goh, K.M. Fock, H.M. Mitchell</i>	
Phylogenetic Analysis the 5'-Noncoding Sequences of the Hepatitis C Virus Detected from the Patient with HCV Infection	259
<i>Nguyễn Thái Sơn, Phạm Hùng Vân</i>	
A Study of Mean Glandular Dose during Diagnostic Mammography in Hospitals in Hanoi, Vietnam	263
<i>Nguyen Thai Ha, Nguyen Duc Thuan, Nguyen Thu Van</i>	
Relationship between Dental Occlusion and Arm Strength	266
<i>Lê Minh Hòa, Đặng Nam Huân, Nguyễn Hồng Thảo, Ngô Thanh Hoàn, Trương Quang Đăng Khoa, Nguyễn H.M. Tâm, Võ Văn Tới</i>	
Eyestrain, Blink Rate and Dry Eye Syndromes of Video Display Terminal Users	270
<i>B. Dumery, P.A. Grounauer, Vo Van Toi</i>	
A Laser Headset for Measuring Cervical Range of Motion	274
<i>Gustavo Lugo, Tran Anh Vu, Nguyen Huynh Minh Tam, Vo Van Toi</i>	
Engineering Resistance in Brinjal against Nematode (Meloidogyne Incognita) Using cry1Ab Gene from <i>Bacillus Thuringiensis</i> Berliner	278
<i>Phan Dinh Phap, Hoang Thi Lan Xuan, D. Sudhakar, P. Balasubramanian</i>	

Removing Noise and Artifacts from EEG Using Adaptive Noise Cancelator and Blind Source Separation	282
<i>Nguyen T.K. Cuong, Vo Q. Ha, Nguyen T.M. Huong, Truong Quang Dang Khoa, Nguyen Huynh Minh Tam, Huynh Q. Linh, Vo Van Toi</i>	
Removing Electroencephalographic Artifacts by Independent Components Analysis	287
<i>Nguyen Thi Minh Huong, Truong Quang Dang Khoa, Nguyen Thi Kim Cuong, Vo Quang Ha, Nguyen Huu Pho, Le Tu Quoc Tuan, Ngo Thanh Hoan, Huynh Quang Linh, Vo Van Toi</i>	
Lab-On-A- Chip - Applied Micro and Nanotechnology in Life Sciences	
A Trip from a Tube to a Chip Applied Micro and Nanotechnology in Biotechnology, Veterinary and Life Sciences	291
<i>Dang Duong Bang, Raghuram Dhumpa, Cao Cuong, Laouenan Florian, Javier Berganzo, Rafal Walczak, Yuliang Liu, Mingiang Bu, Sun Yi, Jan Dzuiban, Jesus Miguel Rruano, Anders Wolff</i>	
Au Nanoparticles for Applications in Analysis of Cellular and Biomolecular Recognitions	295
<i>Cuong Cao, Anders Wolff, Dang Duong Bang</i>	
A Total Integrated Biochip System for Detection of SNP in Cancer	299
<i>Ivan R. Perch-Nielsen, Monica Brivio, Eva Schaeffer, Klaus S. Drese, Frederica Rampf, Dang Duong Bang, Henrik Bruus, Anders Wolff</i>	
Lab on a Chip Application in Life Sciences	303
<i>N.T. Nguyen, Y. Sun, Y.C. Kwok, H.Y. Tan, W.K. Loke</i>	
A Lab-on-Chip for Separating and Focusing Bioparticles via Dielectrophoresis	308
<i>Ngoc-Duy Dinh, Cheng-Hsien Liu</i>	
Nanotechnology at SHTP LABS in Vietnam	312
<i>Khe Nguyen, Pham Hung Van</i>	
Microparticle Encoding Technologies for High-Throughput Multiplexed Suspension Assays	316
<i>S.W. Birtwell, H. Morgan</i>	
Author Index	321
Keyword Index	325