EDITORIAL PREFACE

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This is the second issue of second volume of *International Journal of Biomedical and Clinical Engineering* (IJBCE). IJBCE is a half-yearly peer reviewed academic and research journal published by IGI-Global, USA. IJBCE is a first of kind journal which bridges the gap between the engineering and medical domains by bringing the biomedical engineering experts and clinical experts into one platform. The journal serves as a forum for researchers, clinicians, medical industrialists, healthcare professionals, and academicians to exchange ideas for developing new healthcare standards, products, and so forth. The coverage of the journal includes all theoretical and experimental results in the fields of biomedical engineering, clinical engineering and healthcare information system. The journal encourages all sort of submissions, including review articles, research articles, technical notes and original findings.

This current issue comprise of two original articles, one review article and one research article. The first article is on bone age assessment proposed by Kavya et al. The assessment of bone finds importance in pediatric radiology, forensic applications etc. Clinically, through radiological examination, skeletal development of left-hand wrist is assessed and bone age is determined. Such qualitative procedure is tedious and often time consuming and also requires the manual intervention of the clinical experts. In the proposed work, the authors suggest a simple automated technique to assess the bone age. The metacarpals area is identified and typical features are extracted. An artificial neural network based classification procedure is introduced to recognize the bone patterns of male and female. The pilot study provides the scope of introducing such quantitative procedure for real-time clinical assessment.

The second article proposed by Sravani et al., highlights a novel cost effective subcutaneous portable vein imaging system. Locating veins is an exhaustive procedure for the treatment of varicose veins and other vascular related abnormalities. The identification of exact nerve point is quite a challenging task for the paramedics and in the recent years, several attempts have been made to provide solutions for such problem through the application of infrared imaging technology. The proposed system comprise of an IR Camera connected to a laptop where the camera is fabricated with NIR LED's of 880nm wavelength which ensures better contrast and visibility of veins in the images at 880nm wavelength compared to other IR LED's. A pilot study was carried out with 96 subjects and open CV software was used to process and analyze the acquired real- time vein image. The study revealed that the proposed vein imaging system is capable of identifying the median cubital vein, basilic vein, dorsal venous arch in forearm and juglar vein in neck.

The third article proposes an enhanced review on the applications of optical fibers on medical instrumentation. Two types of optical fibers were reviewed, i.e., the conventional, used on optical communications, and those based on FBGs.

The fourth article proposed by Rodrigues et al., highlights an attempt to develop motion tracking applications using image processing techniques for physical therapy and monitoring of the patients with neurological diseases. A game based approach to monitor the physiotherapy exercises is discussed.

The fifth article proposed by Anjali et al., suggests a research study on importance of magnetic nano particles for medical applications. In the recent years, it is shown through in vitro and in vivo studies, that the magnetic nanoparticles found to be a promising tool for cell separation, MRI procedures, magnetically induced hyperthermia etc., A typical hydrothermal procedure was applied for the synthesis of spherical NZF particles. The characteristic study was performed using PXRD and SEM. Then a vibrating sample magnetometer is used to assess the magnetic properties of the prepared compound. The study revealed that the size of the nanoparticles was found to be less than 10nm and the hysteresis analysis confirms the superparamagnetic property of the nano particles.

IJBCE ensures publication of high quality manuscripts from distinguished scholars on the latest technology in the area of biomedical engineering and primitive techniques being adopted in a typical clinical environment. The journal is making all sorts of attempt to obtain the ISI listing and impact factor. The success of the journal merely depends on the focus area as well as quality articles. In this aspect, I would like to request the readers to submit quality manuscripts. IJBCE also provides authors with high quality, fruitful reviews that helps to assist authors in improving their presentation of the manuscripts.

The editorial board and I very much appreciate your support as we strive to make IJBCE one of the most authenticate journal in the field of clinical and biomedical domains.

N. Sriraam
Editor-in-Chief
IJBCE

N. Sriraam received his B.E. (ECE) from National Engineering College, in 1996 and M. Tech. (Biomedical Engg.) with first class and Distinction from MIT, Manipal, India in 2000. He secured the University First Rank and was awarded the gold medal in M.Tech. He was associated with Ge Medical Systems (X-ray division) Pune for a year. Later joined at Faculty of Information Technology at Multimedia University, Malaysia in the year 2001 as a Lecturer and continued until January 2007. He completed his PhD in the area of biosignal processing under the guidance of Dr C.Eswaran, Professor of IT, Multimedia University (former Professor, Electrical Engg Dept, IIT Chennai) in 2007. His PhD topic was: Neural Network Based Lossless and Quality Controlled Schemes with Error Modeling for the Compression of Electroencephalography (EEG) Signal. Sriraam has guided four M.S Students by research while working at Multimedia University in the area of Bioinformatics and Biomedical Signal Processing. He also received the Malaysian Government Research Grant of USD 120K for carrying out his research on Multimedia data compression for Telemedicine applications and also from Multimedia University as internal funding. He has also involved in INTEL Malaysia project related to optimizing the algorithms for data storage facility. From Feb 2007 to October 2012, he was associated with Biomedical Department of SSN College of Engineering, Chennai as Professor and Head. He received the internal grant of 650K INR for carrying out project on Knowledge based decision support system for detecting fetal pathologies and also received student project funding of 200K INR to carry out the project in the area of point of healthcare system. Recently his team Won the All India Level Sahajanand Laser Technology Sushrutha Innovation Award for the innovation" A Cost Effective Prototype for Long Term Blood Glucose Monitoring Using Non Invasive Adaptable Laser Technique,March 2012 (award was supported by Department of Science and technology of India, Sahajanand laser technology,Gujarat and National Biomedical Society of India) and received cash prize of 90K. He has published 45 International Journals including five papers in IEEE Transactions and 53 International Conferences. He has visited countries like Singapore, Thailand, France, Germany, Malta (Europe), Japan for his international conference presentation. He is the editor-in-chief of two Journals: International Journal of Biomedical and Clinical Engineering (IJBCE) *published by IGI Global Pennsylvania, USA and* International Journal of Biomedical Signal Processing (IJBSP) *and also reviewing panel member for the Journals such as* IEEE Transactions on Signal Processing and Communications, *IEE Electronic letters, Elsevier publications such as* Digital Signal Processing, Computers in Biology and Medicine, Expert Systems, Medical Informatics, Neurocomputing, Journal of Medical Systems. *His research area includes biomedical signal and image processing, data mining, neural networks, bioinformatics. Sriraam is a Senior Member of IEEE and IEEE Engineering in Medicine and Biology society, Signal Processing society, life member of Telemedicine Society of India and member of medical computer society of India. He is serving as the chairman for IEEE EMBS Bangalore (India) chapter and also the staff advisor of IEEE EMBS-MSRIT student Chapter. Currently he is working as Professor and Head, Dept of medical electronics of M.S Ramaiah Institute of Technology (MSRIT), Bangalore, India. He is also serving as Chairman for Center for Medical Electronics and Computing.*