

# **2015 19th National Biomedical Engineering Meeting (BIYOMUT 2015)**

**Istanbul, Turkey  
5 – 6 November 2015**



IEEE Catalog Number: CFP1509G-POD  
ISBN: 978-1-4673-8655-5

## TABLE OF CONTENTS

<b>Quadrature Mirror Filter Bank Design Using Differential Evolution Algorithm.....</b>	1
<i>T. Koza, N. Karaboga</i>	
<b>Classification of Hand Movements Related to Grasp by Using EMG Signals.....</b>	5
<i>S. Batuhan</i>	
<b>Development and Validation of a Computational Musculoskeletal Model of the Cat Hind Limb.....</b>	9
<i>D. Karabulut, S. Dogru, Y. Arslan, Y. Lin, M. Pandy, W. Herzog</i>	
<b>Low Phase Noise Phase Locked Loop Frequency Synthesizer Design for Breast Cancer Detection .....</b>	13
<i>M. Keykhali, N. Gencer</i>	
<b>Evoked Potential in Response to Familiar and Unfamiliar Face Stimuli and Their Time-Location Analysis.....</b>	17
<i>A. Ozbezayaz, S. Arica</i>	
<b>Poisson Medical Image Matting with Fuzzy Input .....</b>	21
<i>K. Aktas, B. Dizdaroglu</i>	
<b>A Urine Color Detecting Device Prototype for Home Healthcare Applications .....</b>	25
<i>E. Ertas</i>	
<b>Effect of Finite Element Model Geometry on Biomechanical Parameters of the Cervical Spin .....</b>	28
<i>I. Zafarparandeh, D. Erbulut, A. Ozer</i>	
<b>Designing and Prototyping of a New Uterine Manipulator Which Will Overcome Drawbacks of Conventional Uterine Manipulators and Assist Laparoscopic Hysterectomies.....</b>	32
<i>S. Dikici, H. Eser, B. Aldemir, E. Gezgin, O. Baser, S. Sahin, H. Of laz</i>	
<b>Biomechanical Comparison of Stability of Resorbable Plate-Screw Fixation Systems in Different Configurations After Sagittal Split Ramus Osteotomy.....</b>	37
<i>M. Ulu, S. Kelebek, S. Dikici, H. Akcay, H. Of laz</i>	
<b>Determination of Glucose Concentration By Pulsed Laser Based Photoacoustic Method .....</b>	41
<i>C. Togay, S. Yilmaz, I. Akkaya, A. Isikhan, E. Engin, M. Engin</i>	
<b>Detarmination of Patellar T EMG Response with The Deep Tendon ReflexGrading and Tapping Force .....</b>	45
<i>S. Uslu, T. Nuzket, Y. Albayrak, H. Uysal</i>	
<b>Hand Rehabilitation and Prosthesis Training Interface.....</b>	49
<i>M. Sayilgan, E. Kaplanoglu, A. Atasoy, S. Kuchimov, M. Ozkan</i>	
<b>Hemodynamic Examination of Brain Aneurysm Based on Computational Fluid Dynamics (CFD) Simulations.....</b>	53
<i>B. Suslu, A. Olcay, B. Hakyemez</i>	
<b>Efficient Cartilage Segmentation in High-Field Knee MR Images with Voxel-Classification-Driven Region-Growing Algorithm .....</b>	57
<i>C. Ozturk, S. Albayrak</i>	
<b>Automatic Computer-Aided Detection of Multiple Sclerosis (MS) Lesions on MR Images .....</b>	61
<i>Z. Eksi, M. Ozcan, A. Aralasmak, E. Dandil, M. Cakiroglu</i>	
<b>A Fuzzy Inference System Design for Computer Aided Mass Detection in Digital Mammogram Images.....</b>	65
<i>V. Goreke, E. Uzunhisarcikli, B. Oztoprak</i>	
<b>Wireless Bioacoustic Sensor System for Automatic Detection of Bowel Sounds .....</b>	69
<i>E. Turk, A. Oztas, U. Ulusar, M. Canpolat, S. Kazanir, M. Yaprak, G. Ogunc, V. Dogru, O. Canagir</i>	
<b>Comparison of Low and High Grade Glioma Maps .....</b>	73
<i>Y. Cotur, M. Ozkan, A. Demir, H. Turnaoglu, A. Agildere, O. Alkan, A. Ulug</i>	
<b>Observation Of Stress Distribution On a 3D Wrist Model After Scaphoid Fracture .....</b>	77
<i>E. Pala, H. Of laz</i>	
<b>Development, 3D Printing and Characterization of Calcium Sulfate Based Scaffolds for Bone Tissue Engineering .....</b>	80
<i>B. Aldemir, S. Dikici, O. Karaman, H. Of laz</i>	
<b>Vibrotactile Sensitivity of Freely Behaving Rats and Operant Conditioning by Intracortical Microstimulation .....</b>	84
<i>I. Devecioglu, B. Guclu</i>	
<b>Histological Study of Layer Thickness in Different Cortical Areas in Rat .....</b>	89
<i>S. Yusufogullari, D. Kilinc, B. Vardar, B. Guclu</i>	
<b>Investigation of Temperature Dependent Optical Activity of <math>\alpha</math>-Glucose .....</b>	93
<i>F. Rahimov, S. Gulyyov, Y. Efteli, Y. Ozturk, M. Engin</i>	

<b>Use of Entropy, Spectral Parameters and Recurrence Quantification Analysis for the Evaluation of Muscle Fatigue from Surface Electromyography .....</b>	96
<i>O. Sayli, H. Coruk</i>	
<b>Naive Bayes Classification of Neurodegenerative Diseases By Using Discrete Wavelet Transform .....</b>	99
<i>S. Bilgin, A. Guzeler</i>	
<b>EOG Controlled Direction Detect System with Neuro-Fuzzy Approach .....</b>	103
<i>H. Erkaymaz, M. Ozer, C. Kaya</i>	
<b>The Nonconformities of the Consumables in Sterilization Processes and Corrective-Preventive Activities .....</b>	107
<i>M. Sezdi, N. Durmus</i>	
<b>Feature Extraction for EEG Based Emotion Prediction Applications through Chaotic Analysis .....</b>	110
<i>S. Acar, H. Saraoglu, S. Akar</i>	
<b>Image Processing Based Vascular Network Analysis .....</b>	116
<i>S. Erbakani, I. Bakar, E. Engin, K. Seker, I. Akkaya, M. Engin</i>	
<b>Numerical Analysis of Spinal Cord Stimulation with Triple Leads with Guarded Cathode .....</b>	120
<i>C. Durlu, R. Zengin, N. Gencer, F. Kucukdeveci</i>	
<b>Task Related Modulation of Group Independent Components of Alzheimer's Disease and Mild Cognitive Impairment Patients.....</b>	124
<i>D. Sahin, A. Duru, A. Bayram, B. Bilgic, T. Demiralp, A. Ademoglu</i>	
<b>Mechanical Evaluation of Different Fixation Materials Used for Mandibular Condyle Fractures: Finite Element Analysis.....</b>	129
<i>E. Cansiz, S. Dogru, Y. Arslan</i>	
<b>Designing of Reflux and Motility Database in Ege University Faculty of Medicine, Department of Gastroenterology and Making Analysis Based on Data Mining .....</b>	135
<i>Y. Dogan, G. Yildirimaz, S. Cansabuncu, A. Kut, R. Yilmaz, S. Bor, Y. Alev, A. Ergin</i>	
<b>Glucose Measuring by Faraday Approach Based Magneto-Optical Method In-vitro Environment for Medical Diagnosis .....</b>	139
<i>I. Yarici, B. Cetintas, A. Pahnvar, Y. Ozturk, M. Engin</i>	
<b>Author Index</b>	