

2018 IX International Seminar of Biomedical Engineering (SIB 2018)

**Bogota, Colombia
16-18 May 2018**



**IEEE Catalog Number: CFP18Q69-POD
ISBN: 978-1-5386-7009-5**

**Copyright © 2018 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP18Q69-POD
ISBN (Print-On-Demand):	978-1-5386-7009-5
ISBN (Online):	978-1-5386-7008-8

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

IMPLEMENTATION BY MEANS OF WEB SERVICES OF AN WITH SERVICE ORIENTATION ARCHITECTURE FOR A SYSTEM TELE-OPERATED	1
<i>C. Alexander, C. David, C. Gladys</i>	
NOVEL BIOPOLIMERIC SYSTEM FOR BONE TISSUE ENGINEERING: CROSSLINKED AND PLASTICIZED CHITOSAN / POLY VINYL ALCOHOL / HYDROXIAPATITE SCAFFOLDS	8
<i>S. Castillo, C. Lopez, F. Araujo, A. Bernal-Ballen, H. Segura-Puello, D. Nieto-Mosquera, D. Munoz-Forero, S. Guitarrero-Bustos, A. Villamil-Ballesteros</i>	
OPTIMIZATION OF SILVER NANOPARTICLE BIOSYNTHESIS BY FUSARIUM OXYSPORUM	15
<i>J. Corredor, V. Ardila, V. Hernandez, A. Riveros</i>	
QUANTIFICATION OF HEAD MOTION IN CHILDREN WITH CEREBRAL PALSY WHEN TESTING SEGMENTAL TRUNK CONTROL	20
<i>M. Sanchez, I. Loram, P. Holmes, J. Darby, P. Butler</i>	
DECREASED PLATELET DEPOSITION IN SIS-BASED VASCULAR GRAFTS VIA COVALENT CONJUGATION OF RAFT POLYMERS	24
<i>K. Valencia-Rivero, J. Cruz, J. Briceno, A. D'Amore, S.-H. Ye, W. Wagner, J. Geest</i>	
SEGMENTATION OF MANDIBLES IN COMPUTER TOMOGRAPHY VOLUMES OF PATIENTS WITH FOAM CELLS CARCINOMA	30
<i>S. Gacha, S. Leon</i>	
COMPUTATIONAL SIMULATION OF NETWORKS DYNAMICS IN CANCER CELL ADHESION	37
<i>G. Castillo, B. Vidal, A. Camargo</i>	
MEDICATION ADHERENCE IMPROVEMENT ON RHEUMATOID ARTHRITIS PATIENTS BASED ON PAST MEDICAL RECORDS	41
<i>E. Margffoy-Tuay, C. Garcia-Hernandez, D. Solano-Beltran</i>	
THE GASTRIC MYOELECTRICAL ACTIVITY RESPONSE TO EMOTIONAL STIMULI	47
<i>Z. Valentina, C. Juliane, A. Sami, V. Mario, N. Vincent, L. Morwena</i>	
3D ALGINATE HYDROGELS WITH CONTROLLED MECHANICAL PROPERTIES FOR MAMMALIAN CELL ENCAPSULATION	52
<i>A. Suarez-Arnedo, P. Sarmiento, J. Cruz, C. Munoz-Camargo, F. Salcedo, H. Groot, D. Narvaez</i>	
BUFORIN II BACTERIA AGGLUTINATION ACTIVITY AS PART OF ITS ANTIMICROBIAL ACTION MECHANISM	57
<i>C. Munoz-Camargo, V. Montoya, L. Barrero-Guevara, H. Groot, E. Boix</i>	
ANALYSIS OF ENERGY EXPENDITURE BASED ON THE USE OF SHIMMER SENSORS DURING PHYSICAL ACTIVITY AMONG SECONDARY SCHOOL STUDENTS IN A CALI CITY EDUCATIONAL INSTITUTION	62
<i>W. Agredo, J. Quiceno, L. Quintero</i>	
ASSESSMENT OF THE EFFECTS OF ENERGY DENSITY IN CROSSLINKING OF KERATIN-BASED PHOTO-SENSITIVE RESIN	67
<i>J. Navarro, J. Swayamunathan, M. Santoro, J. Fisher</i>	
USING, CLEANING AND FAILURES INTERACTIVE QUICK GUIDES FOR BIOMEDICAL DEVICES	73
<i>C. Diaz, A. Hernandez, F. Obando, A. Gallego</i>	
APPLICABILITY OF NEUROFEEDBACK FOR ATTENTION CAPACITY IN A SCHOOL ENVIRONMENT	78
<i>C. Meza, M. Manrique, F. Quijano</i>	
MATHEMATICAL MODEL OF THE HUMAN FETAL AND NEONATAL CIRCULATION WITH PULMONARY ATRESIA	84
<i>J. Sanchez-Posada, A. Torres, J. Triana</i>	
FEASIBILITY TEST OF A NOVEL POWER-HARVESTING MECHANISM TO ADJUST ANKLE STIFFNESS IN ANKLE FOOT ORTHOSIS	92
<i>D. Valenzuela, M. Sacristan, J. Son</i>	
FINITE ELEMENT MODELS OF CARBON FIBER REINFORCED RAILS FOR BONE TRANSPORT FIXATORS	96
<i>P. Alexander, C. Fdo, L. Arlex, G. Jaime</i>	
BIOREACTOR DESIGN FOR IN VITRO ENDOTHELIALIZATION OF SMALL DIAMETER VASCULAR GRAFTS MADE OF PORCINE INTESTINAL SUBMUCOSA (SIS)	101
<i>M. Cuellar, P. Puccini, V. Nino, N. Sandoval, C. Munoz-Camargo, J. Triana</i>	

SILICON ROLE ON GENIPIN-MEDIATED CROSSLINKING AND IN VITRO APATITE DEPOSITION OVER COLLAGEN HYDROGELS	106
<i>D. Menezes, G. Gonzalez, K. Noris-Suarez</i>	
ENGINEERING APPLICATION OF AN OPTIMIZATION ALGORITHM BASED MODELING AND SIMULATION THE PROETIN SYNTHESIS PROCESS	113
<i>B. Vidal, G. Castillo, N. Parra, C. Pena, D. Duque</i>	
IN VITRO BIOLOGICAL EVALUATION OF SMALL INTESTINAL SUBMUCOSA - CHITOSAN / HYALURONIC ACID TRIDIMENSIONAL SCAFFOLDS AS DEEP WOUND HEALING DRESSINGS	119
<i>J. Escobar, V. Nino, L. Bonilla, M. Quintero, J. Diaz, C. Camargo, J. Briceno</i>	
EMOTIONAL NEUROPHYSIOLOGICAL RESPONSE IN INTIMATE PARTNER VIOLENCE AGAINST WOMEN. A PILOT STUDY	128
<i>J. Lopez, M. Trivino, A. Rizo-Arevalo, D. Cardenas-Poveda, M. Prado-Rivera, E. Mejia Soto, A. Alvarez, J. Lamprea, J. Velasquez, D. Florez-Duarte, K. Cruz, M. Higuear, J. Molina</i>	
SEIZURE PREDICTION: A VISUAL APPROACH	136
<i>R. Molina, A. Hernandez, M. Valderrama</i>	
CLASSIFICATION OF MUSCULAR STRENGTH DURING PALMAR GRASP EXERCISES USING SURFACE EMG SIGNALS	142
<i>J. Yepes, A. Saldarriaga, V. Montoya-Leal, A. Orozco-Duque, V. Perez, M. Betancur</i>	
DESIGN AND VALIDATION OF A SYSTEM FOR IMPROVING THE EFFECTIVENESS OF BASKETBALL PLAYERS: A BIOMECHANICAL ANALYSIS OF THE FREE THROW	149
<i>M. Gutierrez, P. Castellanos</i>	
DESIGN AND CHARACTERIZATION OF A LOW-COST, OPEN-SOURCE TRANSCRANIAL STIMULATION DEVICE (TES) FOR BRAIN NEUROMODULATION	157
<i>D. Henao, V. Zapata, M. Navarrete, M. Quyen, M. Valderrama</i>	
ACOUSTIC PANEL DESIGN FOR USE IN THE HOSPITAL ENVIRONMENT	161
<i>P. Gomez-Velez, M. Rivera-Vega, B. Galeano-Upegui</i>	
RADIOLOGICAL SURVEILLANCE SYSTEM FOR SURGERY UNITS IN HEALTH INSTITUTIONS	166
<i>J. Tobon, J. Cogollo, M. Zuluaga</i>	
AUTOMATED DIAGNOSIS OF BREAST CANCER BASED ON HISTOLOGICAL IMAGES	171
<i>L. Gongas, A. Moreno, L. Brabo</i>	
Author Index	