

Table of Contents

Preface

Chapter 1: 3D Technologies in Biomedical Application

3D Printing of PolyLactic Acid (PLA) Scaffold Combined with Injectable Bone Substitute (IBS) for Tuberculosis Drug Delivery D. Hikmawati, A.S. Budiati, A. Aminatun, E. Yuliatin, F. Parastuti and P. Widiyanti	3
3D Printing of Heart Model as Medical Education Tools M.D. Kurniatie, D.I. Andari and T. Asmaria	15

Chapter 2: Modelling and Experimental Research in Biomedical Engineering

Forecasting Approach to Investigate Dynamic Growth of Organoid within 3D Matrix for Distinct Perspective M. Yusro and I. Nurisusilawati	27
Evaluation of the Malalignment Varus - Valgus in Total Knee Arthroplasty Designed for Deep Knee Flexion Using Knee Kinematic Motion Simulator J. Triwardono, F. Rokhmanto, R. Roberto, I. Kartika, A.S. Saragih, Y. Whulanza, S. Shuib and S. Supriadi	39

Chapter 3: Medical Devices and Equipment

Performance Comparison for Heart Rate Signal Detection for Different Location in Fingertip and Wrist Using Sensor MAX30102 R. Gunawan, A. Andang and M. Ridwan	53
The Evaluation of Complementary Metal-Oxide Semiconductor (CMOS) in Smartphone to Test X-Ray Tube Radiation Leakage T.M. Yoshandi, A. Zaky and A. Patrian	67

Chapter 4: Biomedical Image and Signal Processing

An Innovation of Black Tea as a Substitute for the Use of Positive Contrast Media in CT Urography in Hydronephrosis Cases: Case Study R. Wati, A.N. Istiqomah, E. Salsabila and H.S.P. Pratama	79
Kalman Filter for Artifact Reduction in MRI Imaging: A Literature Review D.A. Puspitaningtyas, D.K. Mulyantoro and S. Sudiyono	89
Image Quality Improvement of SENSE Parallel Imaging MRI Post-Acquisition Using Denoising Non-Local Mean Filter Technique S. Angella, R. Indrati and T.M. Yoshandi	99
Determination Image Quality on Thorax COVID-19 and Tuberculosis Using Optical Density Image Analysis A.W. Sari, A.N. Mayani, M.N. Putri, D.A. Puspitaningtyas and A.O. Hidayati	111
Falling Estimation Based on PoseNet Using Camera with Difference Absolute Standard Deviation Value and Average Amplitude Change on Key-Joint M.I. Siddiq, A. Rizal, B. Erfianto and S. Hadiyoso	121
The Influence of X-Ray Tube Current-Time Variations Toward Signal to Noise Ratio (SNR) in Digital Radiography: A Phantom Study A.P. Utami and A.N. Istiqomah	131
Literature Review: Impact of Noise on Cognitive Performance Using Electroencephalography R.D. Astuti, B. Suhardi, P.W. Laksono, N. Susanto and J. Muguro	141

Chapter 5: Health Informatics

A Novel Epitope Dataset: Performance of the MCL-Based Algorithms to Generate Dataset for Graph Learning Model

B. Solihah, A. Musdholifah and A. Azhari

161

A Novel Ensemble of Support Vector Machines for Improving Medical Data Classification

P.H. Huynh and V.H. Nguyen

171