

Table of Contents

Preface

Chapter 1: Biomaterials

Effect of Aging Time and Sonication Treatment on Hydroxyapatite Structure from Limestone

H. Hartatiuk, M.I. Wuriantika, Y. Yudyanto and A. Taufiq 3

Determination of Effective Atomic Number and Radiation Mass Attenuation Coefficient of the Bolus from Alginate Impression Material

T. Guswantoro, R. Hidayat, F. Haryanto, H. Sutanto and A. Dwi 11

Characterization of Glucomannan and Ca-Oxalate from Porang Flour (*Amorphophallus muelleri* Blume) as Candidates for Hydrogel Materials

I. Rizoputra, S. Wahyudi, N.F. Puspita, D. Darminto and R. Risdiana 17

Stability Test and Storage of PDMS as a Biomaterial for Vitreous Humour Substitution in Vitreoretinal Surgery

D.G. Auliya, N.F. Zahra, S. Setiadji, F. Fitriawati, A.S. Kartasasmita and R. Risdiana 25

Chapter 2: Laser Applications

Review of Recent Laser Technology of Development Multi Qubit Gates Using Ion Trap Method

A.H. Atiya and M. Al-Temimi 33

Laser - Produced Functional Surfaces of Silicon and Quartz

M.J. Mahmoud and B.G. Rasheed 43

Chapter 3: Engineering Design

Selection the Material and Analysis of Knee Joint for Smart Transfemoral Prosthetic

M.Q. Ibraheem, A.A.H. Ali and Z.H. Sahti 53

The Design of a Piston Extruder for the Production of Gelatin Filaments Available for Hydroxyapatite Biocomposite 3D Printing

S. Syauqiyah, D.J.D.H. Santjojo, M. Masruroh and H.A. Dharmawan 61

The Influence of the Board Bending and Recoil Effect on Circus Performance in Korean Teeterboard

M. Cossin, A. Ross and P. Francois 71

Thermo-Structural Response Prediction of UHTCC Control Surface for Hypersonic Cruise Vehicle

A. Ghori, S. Narendar and Y. Dubey 81

Effects of Bolted-Joint Parameters on Axial Tension after Hydraulic Tightening

Y. Tanno 95

Reducing Testing Time by Considering the Rubber Curing Time in Tire Manufacturing Company

R.B.S. Wulung and S.R. Saputri 105