

Table of Contents

Preface

Chapter 1: Synthesis, Properties and Applications of Iron Oxide and Ferrites

Annealing Temperature Dependent of the Structural and Magnetic Properties in Hematite Prepared by Sol-Gel Method

A.S.R. Hakim, Utari, Suharno and B. Purnama 3

The Effect of Annealing Temperature on the Structural and Magnetic Properties of Lanthanum Doped Cobalt Ferrite with the Bengawan Solo River Fine Sediment as the Source of Fe³⁺

N.P. Prasetya, Utari, Y. Iriani and B. Purnama 11

Microstructures, Magnetic Properties and Specific Absorption Rate of Polymer-Modified Bismuth Ferrite Nanoparticles

E. Juwita, F.A. Sulistiani, M.Y. Darmawan, D. Oshima, T. Kato and E. Suharyadi 21

The Ability of ZnFe₂O₄ Nanostructure as Electromagnetic Wave Absorber in Frequency Range 2-18 GHz

M.P. Izaak, Y.E. Gunanto, H. Sitompul, Y. Sarwanto and W. Ari Adi 31

The Ability of NiFe₂O₄ Samples to Reduce Electromagnetic Wave Pollution in the Frequency Range of 2-18 Ghz

Y.E. Gunanto, H. Sitompul, M.P. Izaak, Y. Sarwanto and W. Ari Adi 39

Increased Reflection Loss of SrFe_(11.9-x)In_{0.1}Sn_{x/2}Zn_{x/2}O₁₉ (x = 0.0; 0.10; 0.35 and 0.50): A Microwave Absorber Induced by Reduced Coercivity

A. Yaqin, A. Manaf, I. Sugihartono, Y. Taryana and Y. Zainal 47

Photocatalytic Removal of Methylene Blue Dye Using CoZnFe₂O₄/SiO₂ Magnetic Nanoparticles

N.I. Istiqomah, D.A. Larasati, A.N.A. Hanifah, L. Olivia, D. Oshima, T. Kato and E. Suharyadi 55

Exploration of the Antifungal Activity of Zn_{0.2}Fe_{2.8}O₄/ Ag Ferrofluids with Double Surfactants and Sunflower Seed Oil as Dispersion Medium

S. Zuhroh, A. Taufiq, A. Hidayat and Nasikhudin 65

Fe₃O₄ Nanoparticles Prepared by Coprecipitations Method for Hyperthermia Therapy

R.F. Wulandari, D. Paradita, N. Mufti, M.T.H. Abadi, A. Taufiq and Mujamilah 73

Chapter 2: Corrosion and Surface Treatment

Corrosion Behavior of Hastelloy C-276 in Hydrochloric and Sulfuric Acid

S. Hastuty, A. Widiatmoko, T. Sudiro, M. Awwaluddin and P. Puspitasari 83

Formation of Protective and Hardening Coatings on Reinforcing Steels

V.P. Anishchenko, V.A. Skachkov, O.R. Berezhna, R.N. Volyar, V.R. Rumyantsev, S.A. Vodennikov and O.S. Vodennikova 89

The Orientation and High-Quality Effect of Deposit Layer to Surface Roughness on FDM 3D Printed Part

R.D. Bintara, Y.R.A. Pradana, Aminnudin and H. Suryanto 95

Application of Psidium Guajava Leaf Extract as an Organic Inhibitor in Acid Solution and Temperature Variation

A. Pradityana, E. Widiyono, H. Subiyanto, N. Husodo and M.S. Rizal 101

Effect of Stand of Distance (SOD) of Abrasive Water Jet Cutting processes on the Corrosion Properties of Material implant Stainless Steel 316L

T.D. Widodo, R. Raharjo, R. Bintarto, A. Wahyudiono and F.A. Alamsyah 107

Effect of HVOF Air Cap Nozzle Grooves on Cr₃C₂+ 20NiCr Coating Characteristics

E. Martides, H. Ardy, Vincent, B. Prawara, E. Junianto and E. Riyanto 115

Risk-Based Integrity Management System of Oil Tanker Hull Structure due to Corrosion

H. Kurniawan, T. Pitana and N. Siswantoro 121

Chapter 3: Materials and Technologies in Construction

Synthesis of PAN Fibre-Supported Visible Light-Activated Carbon-Doped TiO₂ for Toluene Degradation of Interior Wall Paints	
Q.P. Tian, M. Xu, Z.Y. Tian, R.H. Yuan and Q.X. Liu	139
The Mapping of Road Pavement Structure around the Seismically Active Regions by Using Ground Penetrating Radar	
M. Zainal, R. Raihan, M. Yanis and M. Umar	145
Study on the Mechanical Performance of Soft Sandy Soil Solidified by Epoxy Composites	
S. Liu, G.Z. Wang, M. Fan, S.C. Cui, X.T. Yan and Y.L. Li	153
Analysis of Coal Boiler Ash Content and Palm Shell Boiler Ash as a Cementitious Material in ECC Mortar	
S.M. Siregar, S. Humaidi, N. Bukit and E. Frida	165
Manufacturing and Characterization of Polymer Concrete with Aggregate from Sand, Egg Shell and Sugarcane Waste with Epoxy Resin Binder as Sound Absorber	
Fauzi, L. Hakim and T.R. Simbolon	173
Study on the Technology of Preparing Ceramsite from Coal Gangue	
D.L. Zhang, Y. Liu, J.G. Song, H.B. Wen, R. Huang, Z.K. Li and X.Y. Hu	183