

Table of Contents

Preface

Chapter 1: Metal Corrosion Behaviour and Corrosion Protection

| | |
|--|----|
| Improvement on Corrosion and Wear Resistance of Graphene-Based Coatings: A Review R. Thivagaran, M.R. Aridi, N. binti Salim, K.F. Chong and N.H. Abu Bakar | 3 |
| Corrosion Evaluation and Inhibiting Effect of Chlorpheniramine Drug on Mild Steel in HCl Acid O.A. Odunlami, O. Ogunleye, O.S.I. Fayomi and M. Fajobi | 11 |
| Silicon Nanoparticles Derived from Waste Rice Husk as Potential Siliconizing Material for Mild Steel V.S. Aigbodion, P.A. Ozor and N. Sukdeo | 27 |
| Effects of Surfactants on the Corrosion Behavior of Aluminum Alloy in Graphene Nanofluid A. Borode, N.A. Ahmed and P.A. Olubambi | 35 |
| Emerging Behaviour of Alloy Steel Microstructure in Hydrogen Sulphide Environment - A Review S.L. Lawal, S.A. Afolalu, T.C. Jen and E.T. Akinlabi | 49 |
| Corrosion Control and its Application in Marine Environment - A Review S.L. Lawal, S.A. Afolalu, T.C. Jen and E.T. Akinlabi | 61 |

Chapter 2: Protective Coatings

| | |
|---|-----|
| Microstructure and Tribological Behavior of Plasma Sprayed (Ti,Cr)C-Ni Composite Coatings M. Storozhenko, O. Umanskyi, O. Melnyk, O. Terentyev, T. Chevychelova, V. Varchenko, O. Koval, V. Brazhevsky and O. Chernyshov | 77 |
| The Formation of C-S Coatings by Electrospark Alloying with the Use Special Process Media O. Haponova, V. Tarelnyk, N. Tarelnyk and P. Kurp | 85 |
| The Structure of Boride Diffusion Coatings Produced on Selected Grades of Structural Steels M. Góral, B. Kościelniak, K. Ochał, T. Kubaszek, J. Jopek and M. Drajewicz | 95 |
| Influence of Ni Content on Microstructure and Hardness of Nickel-Graphite Abradable Seal Coatings Produced by Plasma Spraying O. Umanskyi, O. Kushchev, M. Storozhenko, I. Martsenyuk, O. Terentyev, V. Brazhevsky, R. Kostiunik, O. Chernyshov and T. Mosina | 101 |
| Structural and Tribology Properties of Ti-Al-C Coatings Deposited by Vacuum Arc Method V. Podhurska, O. Kuprin, M. Bortnitskaya, O. Ostash, T. Prikhna, R. Chepil, V. Sverdun, I. Kolodiy and V. Belous | 107 |
| The Influence of Plasma Spraying Parameters on Microstructure and Porosity of Bronze-Polyester Coatings for Plain Bearings Applications M. Góral, T. Kubaszek, B. Kościelniak and D. Stawarz | 117 |
| Strength and Crack Resistance Structural Criteria of Composite Coatings Produced by the Method of Multi-Chamber Detonation Spraying V. Korzhik, O.M. Berdnikova, P. Stukhliak, O. Kushnarova, J.J. Zhao and I. Skachkov | 123 |

Chapter 3: Functional Materials

| | |
|---|-----|
| Cobalt Carbide / Reduced Graphene Oxide Hollow Cubes Composites Prepared by Coordination Polymer for High-Performance Supercapacitor E.A.A. Aboelazm, C.S. Khe, M.F.A. Shukur, M.S.M. Saheed, G.A.M. Ali and K.F. Chong | 133 |
|---|-----|

Confinement of the Permittivity Enhancing Fillers in Bacterial Cellulose for Dielectric Elastomer Applications

N.S. Binti Ismail, S.M.A.B.S.M. Hakhiri, S.N.H. Binti Mustapha, A.H.B. Bin A Razak, M.H. Bin Ab. Rahim and S. Bin Zakaria

141