

Table of Contents

Preface, Committee, Organizers and Sponsors

Chapter 1: Ceramic Industrial Technology

Using Lime Mud Waste from Pulp Mill as an Additive in Brick Clay S. Khunton, S. Nilpairach and S. Sangsuk	3
Valorization of Mill Scale Waste by its Incorporation in Fired Clay Bricks X. Spiliotis, K. Ntampeglitis, D. Kasiteropoulou, S. Lamprakopoulos, K. Lolos, V. Karayannis and G. Papapolymerou	8
Study of Residual Stresses in Traditional Ceramics C. Venturelli and M. Paganelli	14
Effect of Flux Materials on the Melting Characteristics of Ash Glaze J.H. Pee, G.H. Kim, Y.D. Choi, D.S. Jung and G.I. Kang	21
Strength Improvement of Porous Ceramics by the Surface Infiltration of Strengthening Materials G.H. Kim, J.H. Pee, J.H. Kim, W.S. Cho, H.T. Kim and K.J. Kim	26
Improvement of Mechanical Properties of Lightweight Ceramics with the Addition of Alumina Fiber G.H. Kim, J.H. Pee, Y.J. Kim, W.S. Cho and D.W. Kim	31
Construction of a Glaze Database T. Sugiyama	37
Influence of Grog and Cement on Physical and Mechanical Properties of Unfired Clay Bricks S. Mulinta	41
Properties of Dan Kwian, Sukhothai and Ratchaburi Pottery Clays Fired at 700 and 900 °C N. Meethong, W. Pattanasiriwisawa, W. Somphon, W. Tanthanuch and S. Srilomsak	47
Development of Carbon Emission Label for Local Ceramic Product K. Kandananond	62
Preparation of Nanocomposite Particles from <i>Typha angustifolia</i> and Egg Shells A. Eiad-Ua, K. Insuang, S. Changsuwan and N. Viriya-Empikul	68
Foam Glass Development Using Glass Cullet and Fly Ash or Rice Husk Ash as the Raw Materials P. Chakartnarodom and P. Ineure	73
Preparation of Xylem-Imitating Porous Ceramic by Coconut Coir and Pottery Clay S. Phungsripheng, R. Pornprasertsuk and T. Wasanapiarnpong	79
Development of Ceramic Candle Filters by Slip Casting Process M.F. Islam, M.H. Rizvi, T.A. Khan and M. Hasanuzzaman	85
Characteristics of Automotive Glass Waste-Containing Gypsum Bodies Made from Used Plaster Mould K. Tounchuen, W. Buggakupta and W. Panpa	91
Effects of Waste from HDPE Catalyst Process on Melting Behaviour and Thermal Properties of White Opaque Glazes S. Pokaew, W. Buggakupta and T. Wasanapiarnpong	97
Utilization of Rice Husk Ash and Waste Sludge from Cutting Glass Manufacturing with Anghong Pottery Y. Kaewtabut, W. Sirimongkol, A. Thueploy and S. Nilpairach	103
Preparation and Characterization of Fly Ash and Aluminium Waste Geopolymer S. Onutai, S. Jiemsirilers, S. Wada and P. Thavorniti	108
Effect of Firing Temperatures on Physical Properties and Phase Evolutions of Fine Stoneware Bodies L. Punsukumtana, S. Rugthaicharoencheep, W.T. Saengchantara, N. Suphanam, K. Sirinukunwattana and S. Pharaboon	114
Low-Temperature Synthesis of Cordierite Using Magnesite J.H. Pee, G.H. Kim, N.R. Lee, H.T. Kim and L. Punsukumtana	122

Zinc Oxide Nano Walls Synthesized by Chemical Vapor Deposition S. Noothongkaew, S. Pukird, W. Sukkabot and K.S. An	127
Metakaolin-Based Porous Geopolymer with Aluminium Powder P. Keawpapasson, C. Tippayasam, S. Ruangjan, P. Thavorniti, T. Panyathanmaporn, A. Fontaine, C. Leonelli and D. Chaysuwan	132

Chapter 2: Advanced Ceramics

Influence of N-Doped TiO₂ Nanocomposite Film on Hydrophilic Property of Rubber Dipping Former Surface M. Masae, L. Sikong, K. Kooptarnond, W. Taweepreda, F. Saito and P. Pitsuwan	141
Microwave-Assisted Hydrothermal Synthesis and Photocatalytic Properties of Cr and La-Codoped SrTiO₃ Photocatalyst R. Akita, Q. Dong, S. Yin and T. Sato	147
Microwave Assisted Method on the Morphology of Aluminium Doped ZnO Nanocrystals P. Sooksaen, M. Rapp and K. Potharin	153
Morphology Controlled Flower-Like ZnO Particles Synthesized by Low Cost High Pressure Cooker P. Sooksaen, M. Rapp, T. Sirinakorn, P. Meepanya and P. Leangthammarat	159
Photocatalytic Degradation of Humic Acid Using Fe³⁺ and N-Doped 3SnO₂/TiO₂ Thin Films Coated on Glass Fibers P. Kongsong, L. Sikong, N. Sutham and V. Rachpech	164
Influence of Specimen Dimensions and Temperature on the Debinding Behavior of Alumina Feedstock N. Chomsirigul, O. Khuanthong, P. Sooksaen and N. Chuankrerkkul	170
A Study of Alumina Spray Dried Granules on Packing Density and Sintering Shrinkage of Simple and Complex Shape K. Somton, K. Dateraksa and R.C. McCuiston	175
Effect of Sintering Conditions on Mechanical and Optical Properties of 3Y-TZP Dental Ceramic K. Dateraksa, N. Sukunthakan and R.C. McCuiston	181
Effect of MnCO₃ Doping on Microstructure and Electrical Properties of PSZT Ceramics A. Boonruang, P. Ngerchuklin, S. Daungdaw, N. Yongpradern and C. Eamchotchawalit	187
Enhancement of Dielectric Constants in Strontium Titanate through Mg and Al Doping O. Jongprateep, J. Palomas and T. Khongnakhon	193
Photocatalytic Performance of ZnO Nanoparticles Synthesized by Microwave-Assisted Process Using Zinc-Dust Waste as a Starting Material P. Sujaridworakun and K. Natrchalayuth	200
Effects of Manganese Addition on Phase Formation Behavior and Dielectric Properties of ((K_{0.5}Na_{0.5})_{0.935}Li_{0.065})NbO₃ Ceramics S. Wongsanmai, S. Maensiri and R. Yimnirun	206
Anodic Oxide Film Formed on Ti-6Al-4V at a Low Current Density in Monocalciumphosphate Monohydrate (MCPM) Electrolyte and its Biocompatibility S. Sriprasertsuk, P. Whangdee, S. Jinawath, P. Thunyakitpisal and D.P. Kashima	212
Dewetting Suppression of Polystyrene Thin Film Using Titanium Dioxide Nanoparticles N. Pangpaiboon and N. Traiphol	218
Synthesis of Visible-Light Responsive CdS/ZnO Nanocomposite Photocatalysts via Simple Precipitation Method P. Chaengchawi, K. Serivalsatit and P. Sujaridworakun	224
Role of Tungsten Carbide Reinforcement on Alumina Matrix Composites Fabricated by Powder Injection Moulding N. Chuankrerkkul, W. Buggakupta and J. Surawatthana	230
Fabrication of Silicon Carbide from Rice Husk by Carbothermal-Reduction and <i>In Situ</i> Reaction Bonding Technique C. Makornpan, C. Mongkolkachit, S. Wanakitti and T. Wasanapiarnpong	235
Preparation of Activated Carbon and Zeolite NaA Composites from Rice Husk Charcoal for Water Filtration T. Tepamat, C. Mongkolkachit, S. Wanakitti and T. Wasanapiarnpong	241

Effect of Sintering Parameters and Ta₂O₅ Doping on the Microstructure and Dielectric Properties of BaTiO₃ Based Ceramics M.F. Islam, R. Mahbub and A. Mousharraf	247
Influence of the Laminate Configurations of Transparent Armor on its Ballistic Protection P. Jantharat, R.C. McCuiston, C. Gamonpilas and S. Kochawattana	253
Microstructure and Properties of TCP/HA Composite Materials L. Kreethawate, S. Tong-On, P. Siriarchavatana and S. Larpiattaworn	259
4-xSr_xNi₃O_{10±δ} Ruddlesden - Popper Structure S. Chokkha and S. Kuharuangrong	264
Surface Characteristics and Hydrophilicity of the as-Anodized Films Formed at High Current Density on Ti-6Al-4V in Different Electrolytes P. Whangdee, S. Sriprasertsuk, V. Srimaneepong and D.P. Kashima	274
Preparation of Calcium Phosphate Cement Utilizing Dicalcium Phosphate Dihydrate and Calcium Carbonate N. Kosachan, A. Jaroenworuluck, S. Jiemsirilers, S. Jinawath and R. Stevens	280

Chapter 3: Glass Science and Technology

The Effect of the Si/Al Ratio on the Properties of Water Treatment Residue (WTR)-Based Geopolymers N. Waijarean, S. Asavapisit, K. Sombatsompop and K.J.D. MacKenzie	289
Low Melting Glass Billets for Pot Furnace Glass Processing E. Meechoowas, P. Jampeerung, K. Tapasa, U. Naknikham and T. Jitwatcharakomol	295
Effect of Alumina Source and Soaking Time on Properties of Refractory Mortar Using as Slumping Mold N. Nawaukkaratharnant, B. Wiratphinthu, S. Nilpairach, C. Mongkolkachit and T. Wasanapiarnpong	301
The Simple Method for Increasing Chemical Stability of Glass Bottles U. Naknikham, T. Jitwatcharakomol, K. Tapasa and E. Meechoowas	307
Investigation of Melting Behavior of Low-Enthalpy Glass Batches K. Tapasa, E. Meechoowas, U. Naknikham and T. Jitwatcharakomol	311
Crack Evolution from Ballistic Threats in Laminated Glass C. Chaichuenchob, P. Aungkavattana and S. Kochawattana	316

Chapter 4: Ceramic Art and Design

Development of Engobe Samples for Dan Kwian Ceramic Body C. Luangnaem, A. Sathonsaowaphak, O. Kamon-In and K. Pimraksa	325
Using Natural Fibers in Forming the Body of Ceramic Lamp S. Lawanwadeekul and M. Bunma	331
Underglaze Tissue Printing for Ceramic Artists, a Collaborative Project to Re-Appraise 19th Century Printing Skills S. Hoskins and D. Huson	335
Using the Polka Dot Technique of Color Slip for Ceramic Decorative K. Ruammaitree	341
The Development of Pottery Products from Nong Suea Clay S. Tansripraparsiri	346
3D Printed Ceramics for Tableware, Artists/Designers and Specialist Applications D. Huson and S. Hoskins	351
Effect of Al₂O₃, CaCO₃ and MgCO₃ on Physical Properties of Crawling Shino Glaze in Reduction Atmosphere S. Junta, S. Mulinta, A. Saitan and K. Ruammaitree	358