Vol.9 table of contents (2016)

Vol.9 No.1

Research papers

Developing a leading practical application for 3D IC chip stacking technology

— How to progress from fundamental technology to application technology —

--- M. AOYAGI, F. IMURA, F. KATO, K. KIKUCHI, N. WATANABE, M. SUZUKI, H. NAKAGAWA, Y. OKADA,

T. YOKOSHIMA, Y. YAMAJI, S. NEMOTO, T. T. BUI and S. MELAMED

1 - 15

Securing a stable supply of critical raw metals

— Efforts and issues for the securement of rare-earth resources —

--- T. TAKAGI

16 - 26

Scenario in synthetic-type research: its role and description

— An investigation from Synthesiology papers —

--- A. ONO, M. AKAMATSU and N. KOBAYASHI 27 - 41

Article

Consortium style study on the development of highly reliable photovoltaic modules and acceleration test methods — Management of the "Consortium Study on Fabrication and Characterization of Solar Cell Modules with Long Life and High Reliability" —

--- A. MASUDA and N. IGAWA 42 - 54

Vol.9 No.2 Special Issue of Geological Surveys

Research papers

Development and utilization of geochemical reference materials

— Reliability improvement in the analysis of geological materials —

--- T. OKAI 60 - 73

Three-dimensional urban geological map

— New style of geoinformation in an urban area —

--- T. NAKAZAWA, S. NONOGAKI and Y. MIYACHI 74 - 86

Constructing a system to explore shallow velocity structures using a miniature microtremor array

Accumulating and utilizing large microtremor datasets

--- I. Cho and S. Senna 87 - 98

Development of rock deformation techniques under high-pressure and high-temperature conditions

— Evaluation of long-term geological processes by a compressed timescale process model —

--- K. Masuda 99 - 111

Vol.9 No.3 Special Issue of Nanomaterials

Research papers

Development of human-friendly polymeric actuators based on nano-carbon electrodes — Toward the practical realization of artificial muscles — --- K. ASAKA 117 - 123 High quality and large-area graphene synthesis with a high growth rate using plasma-enhanced CVD — Toward a high throughput process — --- M. HASEGAWA, K. TSUGAWA, R. KATO, Y. KOGA, M. ISHIHARA, T. YAMADA and Y. OKIGAWA 124 - 138 Radioactive cesium decontamination technology for ash — Utilization and application of nanoparticles as an adsorbent — --- T. KAWAMOTO, H. TANAKA, Y. HAKUTA, A. TAKAHASHI, D. PARAJULI, K. MINAMI, T. YASUTAKA and T. UCHIDA 139 - 154 Development of HASClay® as a high-performance adsorption material Developing adsorbents for energy conservation systems from a kind of clay nanoparticle --- M. SUZUKI, M. MAEDA and K. INUKAI 155 - 166 A super-growth method for single-walled carbon nanotube synthesis — Development of a mass production technique for industrial application — --- K. Hata 167 - 179 **Vol.9 No.4** Research papers Development of a framework for risk tradeoff analysis of chemical substance substitution — An approach to risk assessment using relative comparison ---- M. GAMO and J. TAKESHITA 185 - 196 A first empirical analysis of JIS lifespan — Implications for the review system of de jure standards — --- S. TAMURA 197 - 212

A revolutionary technical development to revitalize Japanese forestry

Development of EUPS for analyzing electronic states of topmost atomic layer

— A proposal for a portable tree felling manipulator to address specific properties of Japanese forestry —

--- Y. Shirai 234 - 251

--- T. TOMIE and T.ISHITSUKA 213 - 233

— Materialization of laser-produced plasma source application and EUPS observed fascinating surface —