# Vol.6 table of contents (2013)

## Vol.6 No.1

#### **Round-table Talks** New research method in the age of science, technology, and innovation 1-11 **Research papers** Progress towards realizing distributed power generation with highly efficient SOFC systems - Development and standardization of performance evaluation methods targeting early market entry of SOFC systems ----Y. TANAKA, A. MOMMA, A. NEGISHI, K. KATO, K. TAKANO, K. NOZAKI and T. KATO 12-26 Earthquake prediction research based on observation of groundwater - Earthquake forecasting based on crustal deformation estimated from groundwater level change -27-37 ---N. KOIZUMI Estimation of legible font size for elderly people - Accessible design of characters in signs and displays and its standardization ---- K. SAGAWA and K. KURAKATA 38-49 Development of fiber optic broadband vibration-detection system - Simultaneous measurement of both strain and acoustic emission using a fiber Bragg grating sensor ----H. TSUDA, E. SATO, T. NAKAJIMA and A. SATO 50-59

#### Vol.6 No.2

**Research papers** 

Training technology for auditory orientation by the persons with visual impairment — Toward practical use in rehabilitation facilities —	
Y. Sекі	66-74
Separation of carbon nanotubes (CNTs) by the separation method for biomolecules - Towards large-scale, low-cost separation of metallic and semiconducting CNTs -	75.00
T. TANAKA and H. KATAURA	75-83
Construction of the Ceramic Color Database	
- Database of more than 300,000 glaze test pieces and its application to industrial research	84-93
1. SUGI YAMA	64-95
A brief history of arcade video game display technologies — From CRT displays to real time graphics —	
Y SAMBE	94-104
1. SANDL	J4 104
A scientific challenge to the delineation of Japan's continental shelf — Contribution to validating the Japan's rights over marine areas based on earth science —	
A. NISHIMURA, M. YUASA, K. KISHIMOTO and K. IIZASA	105-121
A. NISHIMUKA, MI. TUASA, K. KISHIMUTO aliu K. HZASA	105-121
Article	
An introduction to the Research Excellence Framework: A new research evaluation framework for universities in the U $-A$ comparison with the status of research evaluation in Japan $-$	K
R. OHTANI, M. KAMO and N. KOBAYASHI	122-128
Report	

Lecture at the 27th Conference of the Japan Society for Science Policy and Research Management Methodology of the introduction of technology to society from the analysis of papers published in Synthesiology 129-131

### Vol.6 No.3

Research papers	
A proposal for setting electric power saving rate to avoid risk of electric power shortage occurrence — Probability evaluation system of electric power shortage occurrence under tight electric power supply — I. ARIZONO and Y. TAKEMOTO 137 - 1-	46
Development of diamond-based power devices - Verification of its superiority as the ultimate power device - S. SHIKATA and H. UMEZAWA 147 - 1	.57
Marine geological mapping project in the Okinawa area — Geoinformation for the development of submarine mineral resources — K. ARAI, G. SHIMODA and K. IKEHARA 158 - 1	.65
Measurement of input resources for standardization activities in basic research and applied and development research, and the difference of the measuring results between the research types - Case studies of universities and technology licensing organizations, and the electric machinery industry - S. TAMURA 166-1	
Article	
Portfolio structuring and social implementation in the development of complex technology - Case study of the development of GERAS and its evolution - T. KOMAI 177 - 1	83

#### Vol.6 No.4

Research papers	
Development of automatic cell culture system for cell therapy and regenerative medicine - <i>Robotized system for high quality cell product preparation</i> - S. WAKITANI, H. TAHARA, K. NAKASHIMA, H. HASUNUMA, S. SHIMODAIRA, M. ONODERA and T. UEMURA	189 - 199
Selection of next-generation low global-warming-potential refrigerants by using a risk trade-off framework - Risk trade-off assessment for R-1234yf	200 - 211
Industrial safety and application of the chemical accidents database — Relational Information System for Chemical Accidents Database and Progress Flow Analysis — Y. WADA	212 221
Capacitor devices for rapid charge/discharge storage $-R\&D$ strategies of electrode materials for high performance capacitor devices $-$	
H. HATORI, O. TANAIKE, Y. SONEDA and M. KODAMA Physical separation technology to support the strategic development of urban mining — Development of unused/hard-to-use resources and a future vision of resources for Japan —	222 - 231
Т. Окі Round-table Talks	232 - 240
System design management and Synthesiology — Methodology to tackle the issues of modern society and to utilize the research results in society —	241 - 249