
The Journal of Fuel Cell Technology

Contents

Foreword

- Commemorating 20th Anniversary of Fuel Cell Development Information Center
H. Kataoka—Chairman, Fuel Cell Development Information Center 1

Special Issue Development and Introduction of PEFC Cogeneration

- Outline of Large Scale Stationary Fuel Cell Demonstration Project
T. Omata—New Energy Foundation 6
- Introduction of PEFC Cogeneration Systems for Apartment Houses at Urban Renaissance Agency
M. Tsuji—Urban Renaissance Agency 10
- Field Operation Results and Analysis for Residential PEFC Cogeneration Systems
T. Yoshimoto and H. Ohhashi—Institute for Building Environment and Energy Conservation (IBEC)
R. Suda and K. Aozasa—Japan Environment Systems Co.,Ltd. 14
- Field Test of PEFC Systems in the Apartment House for Participants of Expo 2005
M. Aimi—Toho Gas Co.,Ltd.
K. Kosaka—Urban Renaissance Agency
S. Ogino—Toyota Motor Corp.
K. Kiryu—Aisin Seiki Co.,Ltd. 22
- Introduction and Operation Results of Tokyo Gas Residential Fuel Cell "LIFUEL"
H. Ikeda—Tokyo Gas Co.,Ltd. 26
- Research and Development for Fuel Cell and Hydrogen at Hokkaido Gas
R. Goto—Hokkaido Gas Co.,Ltd. 30
- Current Status of Residential PEFC Cogeneration System Development at Osaka Gas
K. Hirai—Osaka Gas Co., Ltd. 35
- Development and Installation of PEFC System at Nippon Oil Corporation
A. Nanjo—Nippon Oil Corp. 39
- Development and Introduction Situation of PEFC Cogeneration System at Idemitsu Kosan
Y. Horikawa—Idemitsu Kosan Co.,Ltd. 44
- Operating Results of PEFC Cogeneration System for Residential Use
M. Takabatake, T. Matsuda, H. Okajima—Japan Energy Corp. 50
- Operating Results of Residential PEFC Cogeneration System
H. Takahashi—Ishikawajima-Shibaura Machinery Co.,Ltd. 54
- Development of PEFC System at Fuji Electric Advanced Technology Co., Ltd.
T. Kiyota—Fuji Electric Advanced Technology Co.,Ltd. 57
- Deregulation for the Residential PEFC
K. Fukushima—The Japan Electrical Manufacturers' Association 61

Topics

- Development of High Quality Pt-CeO₂ Composite Anode for DMFC Applications
T. Mori and M. Takahashi—National Institute for Materials Science 66
- Sustainable Energy and Photofuel Cell(PFC)
M. Kaneko—Ibaraki University 70
- Plastic Formed Carbon Technology and Application to Compact Fuel Cell's Separator
Y. Suda—Mitsubishi Pencil Co.,Ltd. 75
- Performance of Intermediate Temperature SOFC Using Ceria-based Electrolyte Thin Film
K. Hoshino, T. Kunisaki, K. Takahashi—Mitsui Mining Smelting Co. Ltd. 79
- Development of a Direct Glucose Biofuel Cell with a Novel High-Density Enzyme Electrode
T. Tamaki and Takeo Yamaguchi—The University of Tokyo 83

●The cover is

"5kW Class PEFC Cogeneration System for Business Use"
(Idemitsu Kosan)

Vol.6 No.1 Summer 2006

- **Fuel Cell System —Hydrogen Produced by Water Electrolysis by Clean Electricity Generated by Wind Power is Supplied—**
H. Minamino—Wakkanai Alternative and Renewable Energy Study Group …… 89
- **Development of Hollow Fiber Membrane Type Humidifier for PEFC**
M. Watanabe—Asahi Glass Engineering Co.,Ltd. …… 94
- **Overview of JHFC Well to Wheel Efficiency Study Results**
N. Ogino and S. Tange—Japan Automobile Research Institute …… 96
- **Development of Microarray DMFCs**
M. Kunimatsu and T. Ito—Kanagawa Industrial Technology Center … 103
- **Status of PEFC Stack Development —Efforts to Reduce Stack Cost—**
K. Koseki—Fuel Cell Development Information Center … 106

Latest Topics

- **First Trial Operations for Actual Home Use in Japan of SOFC Residential Cogeneration System**
M. Suzuki—Osaka Gas Co.,Ltd.
T. Shigehisa—Kyocera Corp. … 109
- **High Efficiency Power Generation by Segmented-in-series SOFC Unit at Intermediate Temperature**
K. Ogasawara—Tokyo Gas Co., Ltd.
S. Yamashita—Kyocera Corp.
T. Sobue—Rinnai Corp.
K. Hase—Gastar Co., Ltd. … 111

Basic Lecture

- **Materials Design for Fuel Cells by Integrated Computational Chemistry Method:5. Fundamentals of Electrical and Thermal Conductivity Estimation Methods based on SCF-Tight-Binding Quantum Chemical Molecular Dynamics and Their Applications**
M. Koyama, H. Tsuboi, A. Endou, H. Takaba, M. Kubo, A. Miyamoto—Tohoku University … 114

Special Contribution

- **Reflection on the Time of Foundation of Fuel Cell Development Information Center**
T. Takakura—The Institute of Applied Energy … 119
- **Recollections on Opening of FCDIC New Office**
N. Masunaga—Ozenji Kankyo Co.,Ltd. … 122

Organization

- **Introduction and Activity of Japan Organization for the Promotion of Renewable Energy —Toward the success of Renewable Energy 2006 International Conference and Exhibition—**
M. Ikeda—Japan Organization for the Promotion of Renewable Energy … 127

Report

- **Report on the 13th Fuel cell Symposium**
A. Miyahara—FCDIC … 135
- **4th International ASME Conference on Fuel Cell Science, Engineering & Technology**
K. Onda—Toyohashi University of Technology … 138

Information

S. Nagata—FCDIC … 141

Postscript

M. Yamaguchi—NEDO … 146