

## Systems Analysis Group

## ■ 2010 Original Paper

|   | Title                                                                                                               | Researchers                                         | Journal                                                                |
|---|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------|
| 1 | Land Use-Transport Model for Impact Assessment of Urban Policies on Carbon Dioxide Reduction and Sustainability     | Masanobu Kii, Keigo Akimoto                         | Journal of Japan Society of Energy and Resources Vol.31 No.1, pp.16-22 |
| 2 | Introduction of Subsidization in Nascent Climate-friendly Learning Technologies and Evaluation of its Effectiveness | Ullash Kumar Rout, K. Akimoto<br>F. Sano, T. Tomoda | Energy Policy, Vol. 38, Issue 1, January 2010, pp.520-532              |
| 3 | Estimates of GHG Emission Reduction Potential by country, Sector and Cost                                           | K. Akimoto, F. Sano, T. Homma                       | Energy Policy, Vol.38 Issue 7, 2010, pp.3384-3393                      |

## ■ 2010 Other Paper (e.g. Review, Comment)

|   | Title                                                                                                                 | Researchers                  | Forum                                                                                                                                                                                           |
|---|-----------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Response to Global Warming                                                                                            | Keigo Akimoto                | China Research Center, Japan Science and Technology Agency, 'Monthly Science and Technology Newsletter of China' <a href="http://www.spc.jst.go.jp">http://www.spc.jst.go.jp</a> , January 2010 |
| 2 | Global Warming Mitigation and CO2 Reduction Technologies                                                              | Keigo Akimoto                | Monthly Chemical Engineering, January 2010                                                                                                                                                      |
| 3 | Challenges for the Future', the First Step to Establish a New Social System, Seminar -Environment/CSR-, JST Symposium | Keigo Akimoto, et al.        | Monthly Global Environment, February 2010                                                                                                                                                       |
| 4 | Global Warming Measures and Sustainable Development                                                                   | Keigo Akimoto                | ELECTRICAL REVIEW, June 2010                                                                                                                                                                    |
| 5 | Kyoto Protocol and Copenhagen Accord                                                                                  | Fuminori Sano, Keigo Akimoto | ELECTRICAL REVIEW, July 2010                                                                                                                                                                    |
| 6 | Consumption-based Measurement of CO2 Emissions by Country                                                             | Takashi Homma                | ELECTRICAL REVIEW, August 2010                                                                                                                                                                  |
| 7 | Comparable Energy Efficiency for Key Sectors across Countries                                                         | Junichiro Oda                | ELECTRICAL REVIEW, September 2010                                                                                                                                                               |
| 8 | Overview of Global Warming Mitigation and Role of Nuclear Power, Toward Sustainable Measures against Global Warming   | Keigo Akimoto                | ATOMOZ, October 2010, Atomic Energy Society of Japan                                                                                                                                            |
| 9 | Mid- and Long-term Scenarios for Global Warming Mitigation                                                            | Keigo Akimoto                | ELECTRICAL REVIEW, December 2010                                                                                                                                                                |

## ■ 2010 Oral Presentation (Domestic Conference)

|    | Title                                                                                                                                            | Researchers                                                               | Magazine, Newspaper, etc.                                                  |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------|
| 1  | Analyses of Equitable Emission Reduction Targets with a World Energy Systems Model                                                               | Fuminori Sano, Keigo Akimoto, Takashi Homma, Junichiro Oda                | 26th Conference on Energy, Economy and Environment, January 26, 2010       |
| 2  | Evaluation of Climate Change Mitigation with Cost of Stabilization of Power System for Inducing PV and wind Power Generation                     | Fuminori Sano, Keigo Akimoto                                              | 26th Conference on Energy, Economy and Environment, January 26, 2010       |
| 3  | Land Use-Transport Model for Impact Assessment of Urban Policies on Carbon Dioxide Reduction and the Sustainability                              | Masanobu Kii, Keigo Akimoto                                               | 26th Conference on Energy, Economy and Environment, January 26, 2010       |
| 4  | A Study on Marginal Abatement Cost Curve and Payback Periods                                                                                     | Keigo Akimoto, Fuminori Sano, Junichiro Oda                               | 26th Conference on Energy, Economy and Environment, January 27, 2010       |
| 5  | Analyses on GHG Emissions and Sustainable Development from Statistics Data                                                                       | Kohko Tokushige, Keigo Akimoto, Junichiro Oda                             | 26th Conference on Energy, Economy and Environment, January 27, 2010       |
| 6  | Analysis of Economic Impacts of Mid-term CO2 Emissions Reduction Targets of Annex I Countries Considering International Industrial Relationships | Takashi Homma, Keigo Akimoto                                              | 26th Conference on Energy, Economy and Environment, January 27, 2010       |
| 7  | Impact Assessment Method of Urban Policies on Carbon Dioxide Reduction Using Land Use-Transport Model                                            | Masanobu Kii, Keigo Akimoto                                               | 26th Conference on Energy, Economy and Environment, January 27, 2010       |
| 8  | Energy Efficiency in Iron & Steel Sector by Region and Potentials of CO2 Emission Reductions                                                     | Junichiro Oda, Keigo Akimoto, Fuminori Sano                               | 26th Conference on Energy, Economy and Environment, January 27, 2010       |
| 9  | Estimations of Water Resources and Demand by Country for Assessments of Sustainable Water Use                                                    | Ayami Hayashi, Keigo Akimoto, Takashi Homma, Fuminori Sano, Junichiro Oda | 26th Conference on Energy, Economy and Environment, January 27, 2010       |
| 10 | RITE Model Analyses on the Mid-term Target -Issues and Remarks-                                                                                  | Keigo Akimoto                                                             | Society for Environmental Economics and Policy Studies, September 11, 2010 |
| 11 | Investment for Competitive Power Plants under Uncertainty of Allocation Scheme                                                                   | Junichiro Oda                                                             | The 5th National Conference on Real Options, November 13, 2010             |

## ■ 2010 Oral Presentation (International Conference)

|   | Title                                                                                                  | Researchers     | Magazine, Newspaper, etc.                                                                              |
|---|--------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------|
| 1 | Analyses on GHG Mitigation Cost and Measures and their Implications                                    | Keigo Akimoto   | International Conference on Post-Kyoto Climate Change Mitigation Modeling, Seoul, Korea, June 17, 2010 |
| 2 | Baseline Scenarios and Comparability                                                                   | Kenichi Wada    | The third Asian Modeling Exercise Meeting, September 13–15, 2010                                       |
| 3 | Role and Issues of CCS in Long-term Sustainable Emission Reductions and toward Sustainable Development | Kohko Tokushige | GHGT10, Amsterdam, Netherlands, September 20–23, 2010                                                  |
| 4 | An Analysis of CCS Investment under Uncertainty                                                        | Junichiro Oda   | GHGT10, Amsterdam, Netherlands, September 20–23, 2010                                                  |

## ■ 2010 Non-Journal Publication

|    | Title                                                                                                                                  | Researchers      | Magazine, Newspaper, etc.                                                                                                                                     |
|----|----------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Assessment of Economic Impacts of Japan's Mid-term Target on Industrial Competitiveness                                                | Takashi Homma    | DBJ Research Center, Development Bank of Japan, January 6, 2010                                                                                               |
| 2  | Global Warming Issues: the Latest situation, Technology Trends and Development Perspectives                                            | Keigo Akimoto    | Research Council for Project Vitalization in Kansai Area, Japan Machinery Federation, February 16, 2010                                                       |
| 3  | Global Warming Measures: Low-Carbon Cities and Pursuit of Co-benefit                                                                   | Keigo Akimoto    | Community-based Environment Assembly, 'Low-Carbon City Directions: Sustainable Environment Innovations', March 11, 2010                                       |
| 4  | Challenges for the Future', the First Step to Establish a New Social System, Seminar "Environment/CSR", JST Symposium                  | Keigo Akimoto    | JST (Japan Science and Technology Agency) Symposium, March 13, 2010                                                                                           |
| 5  | Necessity of Integrated Analyses of Materials and Energy, and Policy and Measures                                                      | Keigo Akimoto    | Energy- and Environment-Specific Symposium, The University of Tokyo, June 3, 2010                                                                             |
| 6  | Perspectives on Global Warming Measures: Feasibility of the Mid- and Long-term Target and Assessment of the Mid- and Long-term Roadmap | Keigo Akimoto    | The First Project Meeting, Resource and Environment Committee, Kyushu Economic Federation, June 25, 2010                                                      |
| 7  | RITE Model Analyses and Mid-term Target -Issues and Views                                                                              | Keigo Akimoto    | Society for Environmental Economics Model, Japan Center for Economic Research, July 7, 2010                                                                   |
| 8  | Analyses of Emission Reduction Costs                                                                                                   | Keigo Akimoto    | Task Force Meeting, Political Measures Working Group, Global Environment Subcommittee, Environment Committee, Industrial Structure Council, September 1, 2010 |
| 9  | Analyses of Emission Reduction Costs                                                                                                   | Keigo Akimoto    | Political Measures Working Group, Global Environment Subcommittee, Environment Committee, Industrial Structure Council, September 13, 2010                    |
| 10 | The Mid- and Long-term Climate Policy Scenario                                                                                         | Miyuki Nagashima | The Second Lecture Meeting, Global Environment Technology Forum, Osaka Science & Technology Center, September 13, 2010                                        |
| 11 | Impacts of Carbon Leakage by Climate Policies in Japan                                                                                 | Keigo Akimoto    | British Embassy Tokyo, October 7, 2010                                                                                                                        |

## Molecular Microbiology and Biotechnology Group

## ■ 2010 Original Paper

|   | Title                                                                                                                                                  | Researchers                                               | Journal                                                     |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------|
| 1 | Sugar transporters in efficient utilization of mixed sugar substrates: current knowledge and outlook.                                                  | T. Jojima, C.A. Omumasaba, M. Inui and H. Yukawa.         | Appl. Microbiol. Biotechnol. 85:471–480. 2010.(Mini-Review) |
| 2 | Isolation, evaluation and use of two strong, carbon source-inducible promoters from <i>Corynebacterium glutamicum</i> .                                | N. Okibe, N. Suzuki, M. Inui and H. Yukawa.               | Lett. Appl. Microbiol. 50:173–180. 2010.                    |
| 3 | Xylitol production by recombinant <i>Corynebacterium glutamicum</i> under oxygen deprivation.                                                          | M. Sasaki, T. Jojima, M. Inui and H. Yukawa.              | Appl. Microbiol. Biotechnol. 86:1057–1066. 2010.            |
| 4 | A novel redox-sensing transcriptional regulator CyeR controls expression of an old yellow enzyme family protein in <i>Corynebacterium glutamicum</i> . | S. Ehira, H. Teramoto, M. Inui and H. Yukawa.             | Microbiology 156:1335–1341. 2010.                           |
| 5 | Engineering of sugar metabolism of <i>Corynebacterium glutamicum</i> for production of amino acid L-alanine under oxygen deprivation.                  | T. Jojima, M. Fujii, E. Mori, M. Inui and H. Yukawa.      | Appl. Microbiol. Biotechnol. 87:159–165. 2010.              |
| 6 | Characterization of a 24-kb plasmid pCGR2 newly isolated from <i>Corynebacterium glutamicum</i> .                                                      | Y. Tsuchida, S. Kimura, N. Suzuki, M. Inui and H. Yukawa. | Appl. Microbiol. Biotechnol. 87:1855–1866. 2010.            |
| 7 | Regulation of expression of genes involved in NAD de novo biosynthesis in <i>Corynebacterium glutamicum</i> .                                          | H. Teramoto, M. Suda, M. Inui and H. Yukawa.              | Appl. Environ. Microbiol. 76:5488–5495. 2010.               |
| 8 | Antisense-RNA-mediated plasmid copy number control in pCG1-family plasmids, pCGR2 and pCG1, in <i>Corynebacterium glutamicum</i> .                     | N. Okibe, N. Suzuki, M. Inui and H. Yukawa.               | Microbiology 156:3609–3623. 2010.                           |
| 9 | Regulation of genes involved in sugar uptake, glycolysis and lactate production in <i>Corynebacterium glutamicum</i> .                                 | H. Teramoto, M. Inui and H. Yukawa.                       | Future Microbiol. 5:1475–1481. 2010.                        |

## ■ 2010 Oral Presentation

|   | Title                                                                                                                                                                                         | Researchers                                                          | Forum                                                                                                                                                           |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Technology and Innovation for Production of Cellulosic Biofuels                                                                                                                               | Toru Jojima and Hideaki Yukawa.                                      | UNEP–GEC Regional Workshop on Waste Agricultural Biomass, March 4, 2010                                                                                         |
| 2 | Involvement of L-lactate-responsive transcriptional regulator LldR in controlling of expression of the <i>ldhA</i> gene encoding L-lactate dehydrogenase in <i>Corynebacterium glutamicum</i> | Koichi Toyoda, Haruhiko Teramoto, Masayuki Inui, and Hideaki Yukawa. | SIM Annual Meeting, August 2, 2010                                                                                                                              |
| 3 | Identification of a second beta-glucoside phosphoenolpyruvate, carbohydrate phosphotransferase system in <i>Corynebacterium glutamicum</i> R                                                  | Yuya Tanaka, Haruhiko Teramoto, Masayuki Inui, and Hideaki Yukawa.   | SIM Annual Meeting, August 2, 2010                                                                                                                              |
| 4 | Biorefinery: Today and Tomorrow                                                                                                                                                               | Hideaki Yukawa                                                       | 2nd Asian Core Program Joint Seminar on Capacity Building and Development of Microbial Potential and Fermentation Technology towards New Era, November 20, 2010 |

## ■ 2010 Non-Journal Publication

|   | Title                              | Researchers                         | Magazine, Newspaper, etc.                                                                                          |
|---|------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| 1 | L-aspartic acid                    | S. Okino, M. Inui and H. Yukawa.    | Encyclopedia of Industrial Biotechnology: Bioprocess, Bioseparation, and Cell Technology. John Wiley and Sons, Inc |
| 2 | L-isoleucine                       | T. Jojima, M. Inui and H. Yukawa.   | Encyclopedia of Industrial Biotechnology: Bioprocess, Bioseparation, and Cell Technology. John Wiley and Sons, Inc |
| 3 | Advanced fermentation technologies | M. Inui, A.A. Vertès and H. Yukawa. | Biomass to Biofuel: Strategies for Global Industries. John Wiley and Sons, Ltd                                     |

## Chemical Research Group

## ■ 2010 Original Paper

|   | Title                                                                                                                                                         | Researchers                                                                               | Journal                                                              |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| 1 | Heats of reaction and vapor-liquid equilibria of novel chemical absorbents for absorption/recovery of pressurized carbon dioxide in IGCC-CCS processes        | Kin-ya Tomizaki, Shinkichi Shimizu, Masami Onoda, Yuichi Fujioka                          | Ind. Eng. Chem. Res. 49, 1214-1221 (2010)                            |
| 2 | <sup>13</sup> C-NMR Studies on the dissolution mechanisms of carbon dioxide in amine-containing aqueous solvents at high pressures toward an IGCC-CCS process | Kin-ya Tomizaki, Shinkichi Shimizu, Masami Onoda, Yuichi Fujioka                          | Ind. Eng. Chem. Res. 49, 1222-1228 (2010)                            |
| 3 | Prediction of the basicity of aqueous amine solutions and the species distribution in amine-H <sub>2</sub> O-CO <sub>2</sub> system using the COSMO-RS method | Hidetaka Yamada, Shinkichi Shimizu, Hiromichi Okabe, Firoz Alam Chowdhury, Yuichi Fujioka | Ind. Eng. Chem. Res. 49, 2449-2455 (2010)                            |
| 4 | Preliminary estimations of energy and cost for CO <sub>2</sub> recovery by a membrane flash process utilizing waste thermal energy                            | Kazuhiro Okabe, Hiroshi Mano, Yuichi Fujioka                                              | International Journal of Greenhouse Gas Control 4(4), 597-602 (2010) |
| 5 | Hydrogen separation membrane encapsulating Pd nanoparticles in a mesoporous silica layer                                                                      | Katsunori Yogo, Manabu Miyamoto, Yuichi Fujioka, Kensuke Nagata (NAIST)                   | Desalination and Water Treatment 17, 233-241 (2010)                  |

## ■ 2010 Oral Presentation

|    | Title                                                                                                                             | Researchers                                                                                                                                                             | Forum                                                                                                                            |
|----|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 1  | Development of novel Poly(amidoamine) dendrimer membranes and their CO <sub>2</sub> Separation Properties                         | Teruhiko Kai, Shuhong Duan, Firoz Alam Chowdhury, Shingo Kazama, Tomoyuki Kato(NAIST)                                                                                   | NAMS/ICIM2010 (Washington D.C., USA The Mandarin Oriental Hotel) 19 July 2010                                                    |
| 2  | Synthesis and selection of hindered new amine absorbents for CO <sub>2</sub> capture                                              | Firoz Alam Chowdhury, Hiromichi Okabe, Hidetaka Yamada, Masami Onoda, Yuichi Fujioka                                                                                    | 10th International Conference on Greenhouse Gas Control Technologies(GHGT-10) (RAI Amsterdam, The Netherlands) 20 September 2010 |
| 3  | Quantum chemical analysis of carbon dioxide absorption into aqueous solutions of moderately hindered amines                       | Hidetaka Yamada, Hiromichi Okabe, Shinkichi Shimizu, Yuichi Fujioka, Yoichi Matsuzaki(Nippon Steel Corporation)                                                         | 10th International Conference on Greenhouse Gas Control Technologies(GHGT-10) (RAI Amsterdam, The Netherlands) 21 September 2010 |
| 4  | High efficiency CO <sub>2</sub> capture with amine solution from high pressure gas                                                | Hiroshi Machida, Shin Yamamoto, Satoshi Kodama, Kazuya Goto, Shinkichi Shimizu, Hiromichi Okabe, Yuichi Fujioka                                                         | 10th International Conference on Greenhouse Gas Control Technologies(GHGT-10) (RAI Amsterdam, The Netherlands) 21 September 2010 |
| 5  | Development of an energy-saving CO <sub>2</sub> -PSA process using hydrophobic adsorbents                                         | Katsunori Yogo, Tsuyoshi Watabe, Yuichi Fujioka, Yosuke matsukuma, Masaki Minemoto (Kyusyu Univ.)                                                                       | 10th International Conference on Greenhouse Gas Control Technologies(GHGT-10) (RAI Amsterdam, The Netherlands) 21 September 2010 |
| 6  | Development of Molecular Gate Membrane Module for CO <sub>2</sub> Capture from Pressurized Gas Stream                             | Shingo Kazama, Takashi Yamaguchi, Shin-ichi Minegishi, Takuji Shintani, Toshihiro Terauchi, Yoshiki Nobuto, Kazunari Tanaka, Mikihiro Hayashi(Nippon Steel Corporation) | 10th International Conference on Greenhouse Gas Control Technologies(GHGT-10) (RAI Amsterdam, The Netherlands) 21 September 2010 |
| 7  | Effects of membrane properties on CO <sub>2</sub> recovery performance in a gas absorption membrane contactor                     | Hiroshi Mano, Yuichi Fujioka, Nobuhide Takahashi, Yusuke Furuta, Hiroshi Fukunaga, Toru Takatsuka(Shinshu Univ.)                                                        | 10th International Conference on Greenhouse Gas Control Technologies(GHGT-10) (RAI Amsterdam, The Netherlands) 21 September 2010 |
| 8  | Development of a Low Cost CO <sub>2</sub> Capture System with a Novel Absorbent under the COCS Project                            | Kazuya Goto, Firoz Alam Chowdhury, Hiromichi Okabe, Shinkichi Shimizu, Yuichi Fujioka                                                                                   | 10th International Conference on Greenhouse Gas Control Technologies(GHGT-10) (RAI Amsterdam, The Netherlands) 23 September 2010 |
| 9  | Development of Poly(amidoamine) Dendrimer/ Poly(vinyl alcohol) Membrane for CO <sub>2</sub> Capture                               | Shuhong Duan, Ikuo Taniguchi, Teruhiko Kai, Shingo Kazama                                                                                                               | AMS-6(Sydney, Australia) 24 November 2010                                                                                        |
| 10 | Gas permeation properties of amine loaded mesoporous silica membranes for CO <sub>2</sub> separation                              | Katsunori Yogo, Manabu Miyamoto, Ayato Takayama, Shigeyuki Uemiyu (Gifu Univ.)                                                                                          | AMS-6(Sydney, Australia) 24 November 2010                                                                                        |
| 11 | CO <sub>2</sub> absorption characteristics of 2-isopropylaminoethanol(IPAE) aqueous solution                                      | Kazuya Goto, Firoz Alam Chowdhury, Satoshi Kodama, Hiromichi Okabe, Yuichi Fujioka                                                                                      | pacificchem 2010(Honolulu, Hawaii) 16 December 2010                                                                              |
| 12 | Absorption rate and plant performance of novel amine solvents for CO <sub>2</sub> capture                                         | Kazuya Goto, Satoshi Kodama, Hiromichi Okabe, Yuichi Fujioka                                                                                                            | pacificchem 2010(Honolulu, Hawaii) 16 December 2010                                                                              |
| 13 | Novel amine solution development for high pressure CO <sub>2</sub> capture and application examination to IGCC gas                | Shin Yamamoto, Hiroshi Machida, Hiromichi Okabe, Yuichi Fujioka                                                                                                         | pacificchem 2010(Honolulu, Hawaii) 16 December 2010                                                                              |
| 14 | Polymeric membranes containing poly(amidoamine) (PAMAM) dendrimer for preferential CO <sub>2</sub> separation over H <sub>2</sub> | Ikuo Taniguchi, Ryosuke Shimizu, Shuhong Duan, Teruhiko Kai, Shingo Kazama                                                                                              | pacificchem 2010(Honolulu, Hawaii) 18 December 2010                                                                              |

CO<sub>2</sub> Storage Research Group■ 2010 Original Paper [R & D project of CO<sub>2</sub> Storage Technology]

|   | Title                                                                                                                                                                                 | Researchers                                                                                          | Journal                                                                                       |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| 1 | Experimental study on CO <sub>2</sub> monitoring and quantification of stored CO <sub>2</sub> in saline formations using resistivity measurements                                     | Yoshihiro Nakatsuka, Ziqiu Xue, Henry Garcia, Toshifumi Matsuoka                                     | International Journal of Greenhouse Gas Control, Volume 4, Issue 2, March 2010, Pages 209–216 |
| 2 | Supercritical CO <sub>2</sub> core flooding and imbibition in Tako sandstone – Influence of sub-core scale heterogeneity                                                              | Shi Ji-Quan, Xue Ziqiu, Durucan Sevket                                                               | International Journal of Greenhouse Gas Control, in press, 2010                               |
| 3 | Reservoir Simulation Verification of CO <sub>2</sub> injection into an Onshore Aquifer, Nagaoka, Japan                                                                                | Henry Garcia, Ziqiu Xue, Zhejun Pan, Toshifumi Matsuoka                                              | International Journal of Greenhouse Gas Control, submitted                                    |
| 4 | Monitoring and simulation studies for assessing macro- and meso-scale migration of CO <sub>2</sub> sequestered in an onshore aquifer: Experiences from the Nagaoka pilot site, Japan. | Kozo Sato, Saeko Mito, Tadashi Horie, Hiroshi Ohkuma, Hideki Saito, Jiro Watanabe, Tsukasa Yoshimura | International Journal of Greenhouse Gas Control, in press, 2010                               |
| 5 | Saline aquifer CO <sub>2</sub> sequestration in Japan methodology of storage capacity assessment                                                                                      | Toyokazu Ogawa, Shigetaka Nakanishi, Takumi Shidahara, Tadahiko Okumura, Eiji Hayashi                | International Journal of Greenhouse Gas Control, in press, available online 28 Oct. 2010      |
| 6 | Seismic monitoring of residual super critical CO <sub>2</sub> in a water-saturated porous sandstone                                                                                   | Keigo Kitamura, Ziqiu Xue                                                                            | Journal of the Mining and Materials Processing Institute of Japan, submitted                  |

■ 2010 Oral Presentation [R & D project of CO<sub>2</sub> Storage Technology]

|    | Title                                                                                                                      | Researchers                                                                                                           | Forum                                                                                                            |
|----|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| 1  | Comparative assessment of CCS with other technologies mitigating climate change                                            | Toshihiko Miyagawa, Ryuji Matsuhashi, Shigeo Murai, Motoshi Muraoka                                                   | 10th International conference of Greenhouse Gas Control Technologies, September 2010, Amsterdam, The Netherlands |
| 2  | Scenario analysis on hypothetical site condition for geological CO <sub>2</sub> sequestration in Japan                     | Koichi Takizawa, Hironobu Komaki, Eiji Hayashi, Shigeo Murai, Shinzo Ueta, Kohei Yamaguchi, Makoto Tsuchiya           | 10th International conference of Greenhouse Gas Control Technologies, September 2010, Amsterdam, The Netherlands |
| 3  | Life Cycle Assessment Performed on a CCS Model Case in Japan and Evaluation of Improvement Facilitated by Heat Integration | Satoshi Nagashima, Toshihiko Miyagawa, Masaki Matsumoto, Satoshi Suzuki, Hironobu Komaki, Masato Takagi, Shigeo Murai | 10th International conference of Greenhouse Gas Control Technologies, September 2010, Amsterdam, The Netherlands |
| 4  | The Data base of investigation result of saline aquifers for CO <sub>2</sub> storage in Japan.                             | Masao Ohoka, Shinichi Hiramatsu, Kazuo Koide, Nakanishi Shigetaka, Akasaka Chitoshi, Eiji Hayashi, Hideaki Miida      | 10th International conference of Greenhouse Gas Control Technologies, September 2010, Amsterdam, The Netherlands |
| 5  | CO <sub>2</sub> sequestration monitoring in a low formation water salinity reservoir                                       | Doug Murray, Tadash Horie, Tukasa Yoshimura, Saeko Mito                                                               | IOGCEC (International Oil & Gas Conference and Exhibition in China), SPE                                         |
| 6  | Ultrasonic velocity monitoring of CO <sub>2</sub> migration and formation of residual trapping in porous sandstones        | Keigo Kitamura, Ziqiu Xue, Tatsuya Yamada, Toshifumi Matsuoka                                                         | SEG development and Production Forum 2010, Boston                                                                |
| 7  | Review of evaluation methodology for storage capacity using heterogeneity geological model                                 | Ikuo Okamoto, Hiroshi Okuma, Yukiko Obuchi, Akihiko Sato, Kameichiro Nakagawa                                         | Spring meeting of the Mining and Materials Processing Institute of Japan, 2010                                   |
| 8  | Development of reservoir structure evaluation technology of micro array survey                                             | Kameichiro Nakagawa, Yukihiro Mizuochi, Ikuo Okamoto, Tetsuya Kogure, Hisao Hayashi, Tatsuro Matsuoka                 | Spring meeting of the Mining and Materials Processing Institute of Japan, 2010                                   |
| 9  | The Role of rock mechanics for CO <sub>2</sub> geological storage                                                          | Ziqiu Xue                                                                                                             | Fall meeting of the Mining and Materials Processing Institute of Japan, 2010                                     |
| 10 | Simultaneous measurement of Vp and Vs of Tako sandstone                                                                    | Keigo Kitamura, Ziqiu Xue, Osamu Nishizawa                                                                            | Society of Exploration Geophysicists of Japan Conference 2010                                                    |
| 11 | Repeated multi-electrode resistivity measurements of a small-scale carbon dioxide gas injection experiment                 | Takakura, Shinichi; Toshi, Toshiyuki                                                                                  | Japan Geoscience Union meeting 2010                                                                              |
| 12 | Research and Development Activity of Marine Environment Assessment Technology for CCS in RITE (invited)                    | Michimasa Magi                                                                                                        | IEAGHG CO <sub>2</sub> Natural Release, Germany, 2010                                                            |

■ 2010 Others [R & D project of CO<sub>2</sub> Storage Technology]

|   | Title                                                                                                                                                             | Researchers                     | Forum                                                                                                            |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------|
| 1 | Development of prediction methods of CO <sub>2</sub> influence to marine environment, plankton and benthos around seabed                                          | Michimasa Magi, Yukihiro Yazaki | 10th International conference of Greenhouse Gas Control Technologies, September 2010, Amsterdam, The Netherlands |
| 2 | Outcome of the Ocean Sequestration Project, and Technical Evaluation of CCS as Mitigation Measure of Increase Atmospheric CO <sub>2</sub> and Ocean Acidification | Michimasa Magi, Shigeo Murai    | 10th International conference of Greenhouse Gas Control Technologies, September 2010, Amsterdam, The Netherlands |

■ 2010 Oral Presentation [R & D project of CO<sub>2</sub> Long Term Predictions]

|   | Title                                                                                                                  | Researchers           | Forum                                                                                                            |
|---|------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------|
| 1 | Post injection monitoring of stored CO <sub>2</sub> at the Nagaoka pilot site: 5 years time-lapse well logging results | Saeko Mito, Ziqiu Xue | 10th International conference of Greenhouse Gas Control Technologies, September 2010, Amsterdam, The Netherlands |
| 2 | Post-injection monitoring at the Nagaoka site                                                                          | Saeko Mito, Ziqiu Xue | IEA GHG 6th monitoring network meeting, 2010                                                                     |
| 3 | The activities of RITE and Japan in the field of geological storage of CO <sub>2</sub> and collaboration with the EU   | Saeko Mito, Ziqiu Xue | CO <sub>2</sub> GeoNet Open Forum, Venice, Italy, May 2010                                                       |
| 4 | Trapping mechanisms in CO <sub>2</sub> geological sequestration –case study at the Nagaoka site–                       | Saeko Mito            | Japan German Research and Innovation Forum 2010                                                                  |
| 5 | Integrated well-based monitoring of injected CO <sub>2</sub> at the Nagaoka pilot site (invited)                       | Ziqiu Xue             | 16th Formation Evaluation Symposium of Japan, 2010                                                               |

## ■ 2010 Oral Presentation [Japan China CCS-EOR]

|   | Title                                              | Researchers  | Forum                                                           |
|---|----------------------------------------------------|--------------|-----------------------------------------------------------------|
| 1 | Development of CCS technologies in Japan (invited) | Shigeo Murai | Fifth Japan-China Energy Conservation Forum, Tokyo, Japan, 2010 |