KODAMA Akio

Position/Department/Division/Institution/Organization

Professor / Institute for Frontier Science Initiative / Kanazawa University
Kakuma-machi, Kanazawa, Ishikawa, 920-1192 Japan

Country

JAPAN

Career history

- R & D Center, Kyushyu-Matsushita Electric Corporation, Fukuoka
  Engineer, 1991-1992
- Department of Applied Chemistry and Biochemistry
  Kumamoto University, Kumamoto, JAPAN
  Assistant Professor, 1995-November 2002
- Graduate School of Natural Science and Technology
  Kanazawa University, Ishikawa, JAPAN
  Associate Professor, December 2002 – March 2008
- Faculty of Mechanical Engineering, Institute of Science and Engineering,
  Kanazawa University, Ishikawa, JAPAN
  Associate Professor, April 2008 – March 2011
  Professor, April 2011 – November 2021
- Institute for Frontier Science Initiative, Kanazawa University, Ishikawa, JAPAN
  Professor, December 2021 – present

Awards/Publications

AWARDS

- 2017 Japan Society of Refrigerating and Air Conditioning Engineers Outstanding Paper Award, “Measurement and Interpretation of Temperature Distribution in an Adsorbent Desiccant Rotor”, May 15, 2017.
- 2013 Japan Society of Refrigerating and Air Conditioning Engineers Outstanding Paper Award, “Optimum Operating/Design Concept for Adsorbent Desiccant Wheel”, May 14, 2013.
- 2009 Technology Award (from The Society of Chemical Engineers, Japan), "Application of a new adsorbent AQSOA-FAM to desiccant cooling systems", March 19, 2010.
- 2002 Technology Award (from The Society of Chemical Engineers, Japan), "Adsorptive desiccant cooling system", March 24, 2003.

- 2001 Young Investigator Researcher Award (from Japan Society of Refrigerating and Air Conditioning Engineers), "Research and development of improved desiccant cooling process", May 15, 2002.
- 2001 Technology Award (from The Society of Separation Process Engineers, Japan), "Desiccant cooling process equipped with a honeycomb rotor adsorber", April 24, 2002.
- 2000 Young Investigator Researcher Award (from The Japan Society on Adsorption), "Experimental study on an adsorptive desiccant cooling process equipped with a honeycomb rotor dehumidifier", October 10, 2000.
- Best Paper Award, "Thermally Activated Honeycomb Dehumidifiers for Adsorption Cooling System", Heating and Cooling, ASME/JSME/JSES International Solar Energy Conference, Maui, Hawaii, March 19-24, 1995.

PUBLICATIONS

- Carbon dioxide recovery from a simulated dry exhaust gas by an internally heated and cooled temperature swing adsorption packed with a typical hydrophobic adsorbent, Masuda, S., Osaka, Y., Tsujiguchi, T., Kodama, A., *Separation and Purification Technology*, **284**,120249 (2022)
- Dehumidification behavior of an aluminophosphate zeolite coated crossflow heat exchanger driven with direct hot water heating and evaporative cooling, Sunhor, S., Adi Saputra, D., Osaka, Y., Tsujiguchi, T., Kodama, A., *Applied Thermal Engineering*, **210**,118355 (2022)
- CO2 Capture from a Simulated Dry Exhaust Gas by Internally Heated and Cooled Temperature Swing Adsorption, Masuda, S., Osaka, Y., Tsujiguchi, T., Kodama, A., *J. Chem. Eng. Japan*, **54**(5), pp.232-238 (2021)
- Experimental investigation of desiccant wheel dehumidification control method for changes in regeneration heat input, Saputra, D. A., Osaka, Y., Tsujiguchi, T., Haruki, M., Kumita, M., Kodama, A., *Energy*, **205**, Page 118109 (2020)
- Separation and enrichment of CH_4 and CO_2 from a dry biogas using a thermally regenerative adsorbent-packed heat exchanger, Zainol, N.I., Osaka, Y., Tsujiguchi, T., Kumita, M., Kodama, A., *Adsorption*, **25**(6), pp. 1159-1167 (2019)
- Adsorption–desorption behavior of water vapor and heat-flow analysis of FAM-Z01-coated heat exchanger, Tsujiguchi, T., Osaka, Y., Kumita, M., Kodama, A., *Int. J. Refrigeration*, **105**, pp. 3-10 (2019)
- Experimental investigation on the adsorption kinetics of silica-gel layer enhanced thermal conductivity, Osaka, Y., Kotani, S., Tsujiguchi, T., Kodama, A., Huang, H., *Appl. Therm. Eng.*, **148**, pp. 324-330 (2019)
- Experimental investigation on the CO_2 separation performance from humid flue gas by TSA

process, Osaka Y., Tsujiguchi T., Kodama A., *Separation and Purification Technology*, **207**, pp.77-82 (2018)

- Dehumidification behavior of cross-flow heat exchanger type adsorber coated with aluminophosphate zeolite for desiccant humidity control system, Kubota, M., Hanaoka, N., Matsuda, H., Kodama, A., *Appl. Therm. Eng.*, **122**, pp.618–625 (2017)
- Influence of Feed Gas Condition and Regeneration Temperature on the Separation Performance of Thermal Swing Continuous CO_2 Adsorber using a Honeycomb Adsorbent Rotor, Shimono, K., Inoue, K., Okano, H., Kodama, A., *KAGAKU KOGAKU RONBUNSHU*, **43**(2), pp.81-87 (2017)
- Influence of contained water vapor on performance of simulated biogas separation by pressure swing adsorption, Tsujiguchi, T., Miyashita, Y., Osaka, Y., Kodama, A., *J. Chem. Eng. Japan*, **49**(3), pp. 251-256 (2016)
- Preparation of a Honeycomb Adsorbent Rotor for a thermal Swing Continuous CO2 Adsorber, Shimono, K., Inoue, K., Okano, H., Matsukuma, Y., Kodama, A., *KAGAKU KOGAKU RONBUNSHU*, **42**(1), pp.15-21 (2016)

and others

Areas of expertise

- Adsorption processes:
- Thermal swing adsorption
  - CO_2 recovery and Direct Air Capture
  - Air separation
  - Solar / low-temperature heat driven desiccant dehumidification / cooling process
  - Drying
- Pressure swing adsorption
  - CO_2 recovery