

Brief Resume – Malay Kumar Karmakar

- A) Name** : Dr. Malay Kumar Karmakar
- B) Designation / Institute** : Senior Scientist, Thermal Engineering
CSIR-Central Mechanical Engineering Research Institute
(A constituent Establishment of CSIR, New Delhi)
Durgapur – 713 209, West Bengal, India
- C) Date of Birth** : 03-Feb-1968
- D) Gender** : Male
- E) Nationality** : Indian
- F) Communication Address** : MS-II/C-7, CMERI Colony, Durgapur – 713209,
Dist – Burdwan, West Bengal, India
- G) E-mail Address** : malay@cmeri.res.in, malay_karmakar@yahoo.com
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I) Academic Qualification

- Ph.D. (Engg) – 2010, National Institute of Technology Durgapur (NITD), India
- Master of Technology (Operational Research in Industry & Business Management), 2001, University of Burdwan, India
- Bachelor of Engineering (Mechanical), 1991, University of North Bengal, India

J) Research area:

- Combustion & Gasification of Coal and Biomass
- Bubbling, Circulating and Dual fluidized bed system
- Energy from wastes
- Computational Fluid Dynamics using ANSYS Fluent & BARRACUDA

K) Awards:

- Recipient of the prestigious ‘Raman Research Fellowship’ award for the year 2009-10 from Council of Scientific & Industrial Research, Ministry of Science of Technology, Govt of India, New Delhi.
- Recipient of CMERI award in 2005-2006 for Best Project Team for the project “Development of Spouted Bed Dryer for Ground-nut & Assessment of Aflatoxin”

L) Visit to foreign universities:

- University of Pontificia Bolivariana (UPB), Medellin, Colombia during May-August 2010 as a Raman Research Fellow
- Université Catholique de Louvain (UCL), Brussels, Belgium during Oct-Nov 2012 related to the collaborative project on Clean Energy Technologies.
- University of California Davis (UC Davis) to exchange experience in the use of fast internal circulating fluidized bed (FICFB) gasification systems during Jan-Feb, 2013.
- Cranfield University, UK in connection with the collaborative project on Clean Energy Technologies during May 2013

M) Publications:

Publication of book/chapter:

- A book entitled 'Biomass Gasification - Thermo Chemical fluidized bed gasification of biomass', 1st Edition (ISBN 978-3-8433-7557-3), co-authored by M Karmakar, P K Chatterjee & A B Datta, has been published by M/s LAP LAMBERT Publishing GmbH & Co. KG, Germany
- A chapter entitled 'Hydrodynamics of Dual Fluidized beds', co-authored by M Karmakar and P K Chatterjee, in the book 'Hydrodynamics – Theory and Model', 1st Edition (March 2012) ISBN 978-953-51-0130-7, editor Jinhai Zheng, has been published by M/s InTech Janeza Trdine 9, 51000 Rijeka, Croatia

Journal Publication:

- Karmakar M. K., Datta A. B., Hydrodynamics of a dual fluidized bed gasifier, *Advanced Powder Technology*, 21 (2010) pp. 521-528.
- Karmakar M. K., Datta A. B., Generation of hydrogen rich gas through fluidized bed gasification of biomass, *Bioresource Technology*, 102 (2011) pp. 1907-1913.
- Karmakar M. K., Haldar S. and Chatterjee P.K., Fluidization behaviour of binary mixtures using sand and biomass, *International Journal of Emerging Technology and Advanced Engineering* (ISSN 2250–2459), Vol 2, Issue 11, November 2012
- M.K. Karmakar, J. Mandal, S. Haldar, P.K. Chatterjee, Investigation of fuel gas generation in a pilot scale fluidized bed autothermal gasifier using rice husk, *Fuel* (Elsevier Publication), 111 (2013) 584–591
- Rollinson Andrew N. and Karmakar Malay K., On the reactivity of various biomass species with CO₂ using a standardised methodology for fixed-bed gasification, *Chemical Engineering Science* (Elsevier Publication), 128 (2015) 82–91
- Prabhansu, Malay Kr Karmakar, Prakash Chandra, Pradip Kr Chatterjee, A review on the fuel gas cleaning technologies in gasification process, *Journal of Environmental Chemical Engineering* (Elsevier publication), 3 (2015) 689–702

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- Prabhansu, Sovan Dey, Malay Kr Karmakar, Prakash Chandra, Pradip Kr Chatterjee, Studies on various drag models in fluidized bed for abatement of environmental pollution, International Journal of Environmental Sciences (Integrated Publishing Association), Vol 5, No. 5, March 2015
- Nandi A, Loha C, Gu S, Sarkar P, Karmakar MK, Chatterjee PK. Present status and overview of chemical looping combustion technology. Renewable and Sustainable Energy Review, Volume 59, June 2016, Pages 597–619

International/National Conference Publications:

- Prabhansu, Malay Karmakar, Prakash Chandra and P.K. Chatterjee, “A study on the effective treatment of toxic emissions in coal gasification”, national conference on Environmental issues and food security in India, 10th August 2014, University of Calcutta, Kolkata, India.
- Loha C, Karmakar M K, and Chatterjee P K, Parametric study and thermodynamic analysis of allothermal biomass gasification in a fluidized bed reactor, 21st National and 10th ISHMT-ASME Heat and mass Transfer Conference, Dec 27-30, 2011, IIT Madras
- M. Karmakar, R. Jaiswal, P. Saurabh and P K Chatterjee, Hydrodynamics of L-valve in a Dual Fluidized Beds system, has been presented in the International Conference on Advances in Energy Research, 9-11 December, 2011, IIT Bombay
- Karmakar M K and Chatterjee P K, Fluidization velocities of sand and biomass mixtures, has been presented in the national conference on Green Productivity for sustainable Energy and Environment, February 2011, National Productivity Council, New Delhi
- Karmakar M K, Loha C, Chatterjee P K and Datta A B, Thermo-chemical gasification of rice husk in a fluidized bed reactor, National Seminar on Recent Trends in renewable Energy Sources and Technologies, March 2008, HNB Garhwal University, Srinagar, Uttarakhand
- Karmakar M K, Chatterjee P K & Datta A B, Production of H₂ rich Syngas through thermo-chemical process in a fluidized bed reactor, International Conference of Advanced Energy Research, December 2007, IIT Bombay
- Kundu K. M., Datta A. B., Chatterjee P K, Karmakar M. K., A paper on ‘Residence time in Spouted Bed’ was published in the proceedings on International Seminar ‘Asia Pacific Drying Conference (ADC – 2005)’ during 13-15 December 2005, organized by CMERI, Durgapur and University of New South Wales, Australia.
- Datta A. B., Chatterjee P K, Karmakar M. K., A paper on ‘Electricity from biomass’ was presented in the National Workshop on ‘Operation and Maintenance of Fluidized bed Boilers’ during 16-17th July 2004, organized jointly by NPTI, Durgapur and University of Halifax, Canada.
- Datta A. B., Chatterjee P K, Karmakar M. K., A paper on ‘Energy aspects in Blast Furnace’ was presented in the National Conference ‘Turn Around In Steel Industry (TASI -2004)’, during 13th February 2004, organized by CMERI, Durgapur
- Kundu K. M., Datta A. B., Chatterjee P K, Karmakar M. K., A paper on ‘Controlling CO₂ Emission in an existing Coal-Fired Power Plant’, was presented in the National Symposium on ‘Towards Self Reliance In Power (SRP 2003)’ during 18-19th April 2003, organized by CMERI, Durgapur.

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Patent filed:

- A patent application on “Flexible Cold Model Set Up For Developing Chemical Looping Combustion System” has been done jointly with CSIR-CMERI Scientists (Pradip Kumar Chatterjee, Malay Kumar Karmakar, Chanchal Loha, Biswajit Chakraborty) and CSIR-CIMFR Scientists (Ashis Mukherjee, Pinaki Sarkar Manish Kumar, Sudipta Datta, Santi Gopal Sahu, Ashis Kumar Adak, Ashwani Kumar Dubey, Sujit Kumar Dutta).

Copyrights:

- A copyright on ‘Lab scale Circulating Fluidized bed Coal Gasifier’, by Pradip Kumar Chatterjee, Malay Kumar Karmakar and Chanchal Loha
- A copyright on ‘Development of granular coal injection system in a lab scale cold blast furnace’, by G P Sinha, P K Chatterjee, A B Datta and M K Karmakar

Technical Reports:

- Report on ‘Generation of Hydrogen from Biomass through Thermo-Chemical Fluidized bed Gasification’ has been submitted to NMITLI, CSIR, New Delhi.
- Report on ‘Distributed power generation through fluidized bed biomass gasifier integrated with gas engine’ has been submitted to CSIR-CMERI, (OLP-082012), Durgapur, India

Reviewer:

- National/International Journals