

BIOGRAPHICAL SKETCH

Avimanyu Das

Department of Metallurgical and Materials Engineering
Montana Technological University, Butte, MT 59701
Phone: 406-496-4794 (W) Email: adas@mtech.edu

Education

University of Kentucky, Lexington, KY, USA	Minerals Processing	Postdoc	2003-2004
University of Utah, Salt Lake City, UT, USA	Metallurgical Engg.	Ph.D.	1994
Indian Institute of Technology, Kanpur, India	Metallurgical Engg.	M.Tech.	1989
Indian Institute of Technology, Kanpur, India	Metallurgical Engg.	B.Tech.	1985

Appointments

Jan 2018 – Present	Montana Tech, Associate Professor Duties: Teaching UG and PG students and research
Feb 2015 – Dec 2017	Montana Tech of The University of Montana, Postdoctoral Researcher Duties: Teaching UG and PG students and research
Dec 2004 – Jan 2015	CSIR-NML, Jamshedpur, India, Scientist/Associate Professor Duties: Teaching PG students and research
Dec 2001 – Feb 2003	National Institute of Technology, Durgapur, India, Assistant Professor Duties: Teaching UG and PG students and research
Nov 1997 – Nov 2001	Indian School of Mines, Dhanbad, India, Lecturer/Assistant Professor Duties: Teaching UG and PG students and research
Dec 1995 – Oct 1997	Tata Res. Dev. & Design Center, Pune, India, Researcher Duties: Research on mineral and metallurgical processing

Professional Affiliations

Indian Institute of Mineral Engineers

Honors and Awards

Indian Institute of Mineral Engineers, Best Paper Published Award	2015
Domain Expert, Project Review Committee, TIFAC, Govt. of India	2014
Member, Project Monitoring Committee, Govt. of India	2010-2013
Indian Institute of Mineral Engineers, Best Paper Published Award	2010
CSIR Leadership Program, Merit Scholar	2009
CSIR-NML, 2 nd Best In-house research project	2009
Indian Institute of Mineral Engineers, Best Paper Published Award	2009
Indian Institute of Mineral Engineers, Best Paper Presented Award	2009
CSIR-NML, Best In-house research project	2008
National Prize (India), Secondary School Leaving Certificate	1979

Funded Research Grants (last 10 years)

- Flotation studies of fine coal sample from West Bokaro, sponsored by Tata Steel Limited, India, Duration 12 months, 2006-07 (as PI).
- Study of particle dynamics in teeter bed separator, CSIR-NML in-house project, Duration 18 months, 2006-07 (as Co-PI).
- Development of process flowsheet for the recovery of heavy minerals from Korean sea sand, sponsored by KIGAM, Korea, Duration 12 months, 2006-07 (as Co-PI).
- Study of particle dynamics and development of control strategy for improved performance in floatex density separator, sponsored by Dept. of S & T, India, Duration 3 years, 2007-2010 (as PI)
- Beneficiation of iron ores of Gua and Bolani Mines for modernization and expansion of beneficiation plant, sponsored by MECON, India, Duration 18 months, 2008-2010 (as Task Leader)
- Recycling of electronic waste, sponsored by Ministry of Environment & Forests, India, Duration 3 years, 2007-2010 (as PI)
- Development of processing technology for recycling and reuse of electronic waste, sponsored by Department of Information Technology, India, Duration 3 years, 2007-2010 (as PI)
- Development of advanced eco-friendly and energy efficient technology for processing lean iron ores, CSIR Networked Project, India, Duration 5 years, 2008-2012 (as Task Leader).
- Improvement in sinter productivity through deep beneficiation and agglomeration technologies for rational utilization of low grade iron ore fines, sponsored by Ministry of Steel, India, Duration 3 years, 2010-2013 (as Task Leader)
- Alternative complimentary route of direct steel making with reference to Indian raw materials, sponsored by Ministry of Steel, India, Duration 3 years, 2010-2013 (as PI)
- Development of technology to produce clean coal from high ash and high sulphur Indian coals, sponsored by Ministry of Steel, India, Duration 3 years, 2010-2013 (as PI)
- Beneficiation and agglomeration of low grade chromite ore from Oman, Sponsored by Bahar Oman LLC, Oman, Duration 5 months, 2012 (as PI)
- Development of beneficiation strategy for low grade copper ore from Zambia, Sponsored by McNally Bharat Engg. Co. Ltd, India, Duration 4 months, 2013 (as PI)
- Development of zero waste technology for processing and utilization of thermal coal, CSIR Networked project, India, Duration 3 years, 2012-2015 (as PI)
- Recovery of Rare Earth Elements with Advanced Processing Technologies, funded by ARL, USA, Duration 2 years, 2015-2017 (as Team Member)
- Processing and utilization of tailings from garnet plant, Garnet USA, USA, Duration 6 months, 2016 (as Co-PI)
- Comparison of Surface and Solution Chemistry of Novel Thiol Collectors to Xanthate in Metal and Sulfide Mineral Flotation, CP Chemicals, USA, Duration 1 year (2016-2017) (as Co-PI)
- Processing of copper slag to recover pig iron and generate feed material for proppant manufacture, Premier Industries, USA, Duration 15 months (2017-18) (as PI).
- Refining of pig iron and glass recovered from copper slag to improve their application potential, FX Solutions, USA, Duration 25 months (2018-20) (as PI).

Publications in Peer Reviewed Journals

- **A. Das**, N. Chakraborti, T. S. Sundararajan, Development of a Mathematical Model for Bubbles in a Copper Converter; *Scandinavian Jl. of Metallurgy*, 20(4), pp. 261, 1991.
- **A. Das**, D. J. Kinneberg, N. Chakraborti, J. D. Miller, Fluid Motion in Air-Sparged Hydrocyclone: Single Phase Measurements and Calculations of Tangential Velocity of Swirl Flow in a Vertical Cylinder; *Scandinavian Jl. of Metallurgy*, 22(5), pp. 254, 1993.
- N. Chakraborti, J. Hupka, **A. Das**, M. Hupka, J. D. Miller, A Dimensional Analysis of Dissolution of a Bitumen Concentrate Derived from Utah Tar Sand, *Fuel Science and Technology International*, 13(5), pp.639, 1995.
- **A. Das**, J. D. Miller, Flow Phenomena and Its Impact on Air-Sparged Hydrocyclone Flotation of Quartz, *Minerals and Metallurgical Processing, SME/AIME*, 12(1), pp.51, 1995.
- **A. Das**, J. D. Miller, Swirl Flow Characteristics and Froth Phase Features in Air-Sparged Hydrocyclone as revealed by X-Ray CT Analysis, *Int. Jl. of Mineral Processing*, 47, pp.251-274, 1996.
- P. Sravan Kumar, S. Bhattacharya and **A. Das**, Koyla – A New Simulator for Heavy Media Based Coal Washing Plants, *Journal of Mines, Metals & Fuels*, 51(1-2): 60-66, 2003.
- **A. Das** and R. Q. Honaker, Ultrafine coal cleaning using a centrifugal fluidized bed separator, *Coal Preparation* 24:1-18, 2004
- R. Q. Honaker, **A. Das** and M. Nombe, Improving the separation efficiency of the Knelson Concentrator using air injection, *Coal Preparation*, 25(2): 99-116, 2005.
- M. K. Mohanty, **A. Das** and B. Damron, Conversion of Coal Preparation Plant Fine Waste to a Fuel Feedstock for Mine-mouth Power Plants, *Mining Engineering*, pp. 61-66, September, 2007.
- R. Q. Honaker, **A. Das**, F. Boaten, Slurry viscosity modification effects on classifying cyclone performance, *Canadian Metallurgical Quarterly*, 46(3):341-347, 2007.
- Subrata Roy, **Avimanyu Das** and M. K. Mohanty, Feasibility of Producing Pellet Grade Concentrate by Beneficiation Of Iron Ore Slimes in India, *Separation Science & Technology*, 42 (14): 3271-3287, 2007.
- S. Roy and **A. Das**, Characterisation and Processing of low grade iron ore slime from Jilling area of India, *Mineral Processing and Extractive Metallurgy Review*, 29 (3): 213-231, 2008.
- B. Sarkar, **A. Das**, S. Roy and S. K Rai, In depth analysis of alumina removal from iron ore fines using Teetered Bed Gravity Separator, *Mineral Processing and Extractive Metallurgy (Trans IMM C)*, 117(1): 48-55, 2008.
- B. Sarkar, **A. Das** and S. P. Mehrotra, Study of Separation Features in Floatex Density Separator for Cleaning Fine Coal, *International Journal of Mineral Processing*, 86(1-4): 40-49, 2008.
- **A. Das**, B. Sarkar, A. Vidyadhar, Alok K. Singh and K. K. Bhattacharyya, A Novel Beneficiation Scheme for a Medium Coking Coal Fines from India, *International Journal of Coal Preparation and Utilization*, 28(4):189-200, 2008.
- S. Roy, **A. Das** and A. S. Venkatesh, A Comparative Mineralogical and Geochemical Characterization of Iron Ores from two Indian Precambrian deposits and Krivoy Rog deposit, Ukraine: implications for the upgrading of lean grade ore, *Applied Earth Sciences*, 117(3):125-147, 2008.

- **A. Das**, B. Sarkar and S. P. Mehrotra, Prediction of Separation Performance of Floatex Density Separator for Processing of Fine Coal Particles, *International Journal of Mineral Processing*, 91(1-2):41-49, 2009.
- **A. Das**, B. Sarkar, P. Biswas and S. Roy, Performance Prediction of Floatex Density Separator in Processing Iron Ore Fines - A Relative Velocity Approach, *Mineral Processing and Extractive Metallurgy*, 118(2):78-84, 2009.
- **A. Das**, A. Vidyadhar and S. P. Mehrotra, A Novel Flowsheet for the Recovery of Metal Values from Waste Printed Circuit Boards, *Resources, Conservation and Recycling*, 53:464-469, 2009.
- S. Roy and **A. Das**, The nature of low grade Indian iron ores and the prospects of their enrichment through gravity separation, *Minerals & Metallurgical Processing*, 26(3): 141-150, 2009.
- **Avimanyu Das** and K. K. Bhattacharyya, An improved process for the beneficiation of fine coking coal from Munidih area, *Steel Tech*, 4(4th July): 29-33, 2010.
- Biswajit Sarkar and **Avimanyu Das**, A comparative study of slip velocity models for the prediction of performance of floatex density separator, *International Journal of Mineral Processing*, 94(1-2):20-27, 2010.
- **Avimanyu Das**, Biswajit Sarkar, Vidyadhar Ari and Subrata Roy, Efficient recovery of combustibles from coking coal fines, *Mineral Processing and Extractive Metallurgy Review*, 31(4):236-249, 2010.
- **Avimanyu Das**, Ratnakar Singh and K. K. Bhattacharyya, Split processing of high ash Indian coking coal fines using Jameson flotation cell, *Mineral Processing and Extractive Metallurgy Review*, 32(1):17-23, 2011.
- Sujit Kumar Dey, Vidyadhar Ari and **Avimanyu Das**, Processing of electronic waste in a counter current teeter bed separator, *Journal of Environmental Management*, 107:45-51, 2012.
- Subrata Roy, Vidyadhar Ari, Jayanta Konar and **Avimanyu Das**, Metal enrichment of finely ground electronic waste using eddy current separation, *Separation Science and Technology*, 47(12):1777-1784, 2012.
- Shobhana Dey, Santosh Pani and **Avimanyu Das**, Scavenging of high value product from high ash medium coking coal: A compulsion of less endowed regions, *International Journal of Coal Preparation and Utilization*, 32(5): 238-251, 2012.
- **Avimanyu Das** and Ratnakar Singh, Judicious utilization of non-renewable mineral resources through physical enrichment, *Science and Culture*, 78(11-12): 490-496, 2012.
- Sujit Kumar Dey, Shobhana Dey and **Avimanyu Das**, Comminution features in an impact hammer mill, *Powder Technology*, 235: 914-920, 2013.
- Vidyadhar Ari, Ganesh Chalavadi and **Avimanyu Das**, Stratification and segregation features of pulverized electronic waste in flowing film concentration, *Journal of Environmental Management*, 118: 49-54, 2013.
- Subrata Roy and **Avimanyu Das**, Recovery of valuables from low grade iron ore slimes and reduction of waste volume by physical processing, *Particulate Science and Technology*, 31(3): 256-263, 2013.
- Ranjeet Kumar Singh and **Avimanyu Das**, Study of the separation features of fine coal beneficiation in a Kelsey Centrifugal Jig, *Fuel Processing Technology*, 115: 71-78, 2013.

- Vidyadhar, and **Avimanyu Das**, Enrichment implication of froth flotation kinetics in the separation and recovery of metal values from printed circuit boards, *Separation and Purification Technology*, 118: 305-312, 2013.
- Subrata Roy, Sushil Kumar Mandal and **Avimanyu Das**, Particle segregation in a teeter bed separator as revealed by high speed videography and image processing, *Mineral Processing and Extractive Metallurgy Review*, 35(1): 15-22, 2014.
- Ranjeet Kumar Singh, Shobhana Dey, Manoj Kumar Mohanta and **Avimanyu Das**, Enhancement of utilization potential of a low grade chromite ore through extensive physical separation, *Separation Science and Technology*, 49(12):1937-1945, 2014.
- Pushkar Sathe, Biswajit Sarkar and **Avimanyu Das**, Residence time distribution of solid particles in floatex density separator, *Canadian Metallurgical Quarterly*, 54(1):110-122, 2015.
- Jagannath Pal, Satadal Ghorai and **Avimanyu Das**, Development of carbon composite iron ore micro-pellets for utilization of microfines of iron ore and carbon bearing materials in iron making, *International Journal of Minerals, Metallurgy and Materials*, 22(2):132-140, 2015.
- Ganesh Chalavadi and **Avimanyu Das**, Study of the mechanism of fine coal beneficiation in air table, *Fuel*, 154: 207-216, 2015.
- Ganesh Chalavadi, Ranjeet Kumar Singh, Mamta Sharma and **Avimanyu Das**, Recovery of combustibles from fine coal through controlled air fluidization over inclined deck, *Separation Science and Technology*, 50(13): 2032-2040, 2015.
- Ganesh Chalavadi, Ranjeet Kumar Singh, Mamta Sharma, Ratnakar Singh and **Avimanyu Das**, Development of a generalized strategy for dry beneficiation of fine coal over a vibrating inclined deck, *International Journal of Coal Preparation and Utilization*, 36(1): 10-27, 2016.
- Ganesh Chalavadi, Ranjeet Kumar Singh and **Avimanyu Das**, Processing of coal fines using air fluidization in an air table, *International Journal of Mineral Processing*, 149: 9-17, 2016.
- Rakesh Sah, A. Vidyadhar and **Avimanyu Das**, Study of cut point density and process performance of Floatex Density Separator in fine coal cleaning, *Particulate Science and Technology*, 39(2): 239-246, 2017.
- Prince Sarfo, Gary Wyss, Guojun Ma, **Avimanyu Das** and Courtney Young, Carbothermal reduction of copper smelter slag for recycling into pig iron and glass, *Minerals Engineering*, 117: 8-19, 2017.
- Prince Sarfo, **Avimanyu Das**, Gary Wyss and Courtney Young, Recovery of metal values from smelter slag and reuse of residual secondary slag, *Waste Management*, 70: 272-281, 2017.
- **Avimanyu Das** and Biswajit Sarkar, Advanced gravity concentration of fine particles: A review, *Mineral Processing and Extractive Metallurgy Review*, in press, January 2018.

Books/Monographs/Book Chapters

A. Das and C. Young, Minerals, Properties and Processing, Handbook of Minerals Processing, Chapter 1.1, SME Publications, 2017-18.

Patents

- A process for the recovery of metal values from waste printed circuit board, 01-25-2008, Active.
- An improved process for the production of composite micro-pellets, 09-27-2013, Active.

- A novel multistage, multi-product processing flowsheet for dry beneficiation of -1.0 mm coal fines by gravity separation using air fluidization on an inclined deck, 10-09-2014, In Process.

Publications/Presentations in Conference Proceedings

- **A. Das**, D. Lelinski, J. D. Miller, J. W. Chamblee, Multiphase Flow Characteristics of Gas-Sparged Hydrocyclone Flotation Deinking, proceedings of TAPPI Engineering Conference on Fluid Mechanics of Deinking and Recycling, Orlando, Florida, Book 2, pp.417, 1993.
- **A. Das**, J. D. Miller, Density Profile Measurements in the Three-Phase Flow of Air-Sparged Hydrocyclone Flotation; presented at the International Forum on Particle Technology, AIChE, 17-19 August, 1994, Denver, Colorado, USA.
- R. Gopinath, **A. Das**, S. Sivakumar, P. C. Kapur and Pradip, Strategies for Process Modelling and Advanced Control in Mineral Processing Sector, proceedings of the International Conference on Business and Investment Opportunities in Mining Industry (Technical Papers), 15-18 December, 1996, New Delhi, India, pp.297-314.
- **A. Das**, Relationship of the multiphase flow regimes in the air-sparged hydrocyclone with flotation response, presented at the annual conference of the Indian Institute of Mineral Engineers, 18-19 April, 1996, Puri, India.
- **A. Das**, S. Sivakumar, Pradip and P. C. Kapur, Computer Aided Plant Audit and Design, Simulation and Optimization of Mineral Processing Operations, Presented in the Annual Technical Meeting of the Indian Institute of Metals, 16-17 November, 1996, Delhi, India.
- **A. Das**, Computer aided design and simulation of grinding mills, National Conference on computer application in mineral industries, New Delhi, India, 2000.
- P. Sravan Kumar, **A. Das** & M. M. Konar, A comprehensive simulation package for coal preparation plants, Proceedings of International Conference on Coal and Mineral Beneficiation, pp. 323-329, Dhanbad, India, December 7-9, 2001.
- R. Q. Honaker, **A. Das**, F. Boaten, G. H. Luttrell and R. H. Yoon, Improved Ultrafine Classification Performance, Presented in the SME annual conference, Salt Lake City, Utah, USA, Feb 28 – Mar 02, 2005.
- R. Honaker, **A. Das** and M. Nombe, Fine Coal Cleaning Using a Centrifugal Fluidized Bed Separator, Presented in the SME annual conference, Salt Lake City, Utah, USA, Feb 28 – Mar 02, 2005.
- **A. Das**, Process Optimization and simulation of Knelson's concentrator processing coal fines, proceedings of the *International Conference on Coal & Mineral Processing*, MPT – 05, Dhanbad, India, 6-8 January, 2005.
- **A. Das**, K. K. Bhattacharyya, S. Dey, B. Sarkar and V. Kumar, Optimization of coal flotation using pneumatic co-current flotation cell, proc. Int. Seminar on Mineral Processing Technology, Chennai, India, pp. 641-647, 8-10 March 2006.
- S. Roy and **A. Das**, A comparative study on characterization and processing of iron ore slimes, Proceedings of International Seminar on Mineral Processing Technology, Chennai, India, pp. 476-484, 8-10 March, 2006.
- R. Singh, **A. Das**, V. Kumar, S. Dey, A. Vidyadhar, R. K. Rath and K. K. Bhattacharyya, Beneficiation of Indian coking coal fines – An alternative circuit for improved performance, Proceedings of International Seminar on Mineral Processing Technology, Chennai, India, pp. 615-619, 8-10 March, 2006.

- Sarkar, **A. Das**, S. Rai, U. S. Chatteraj, N. K. Bhattacharya and K. K. Bhattacharyya, Optimization of Teeter Bed Separator for Alumina removal from iron ore fines, Proceedings of workshop on 'Iron ore Beneficiation', Jamshedpur, pp. 76-84, June 18-19, 2006.
- S. Roy, **A. Das** and A. S. Venkatesh, Characterization of Iron Ore Slimes from different deposits : A Comparative Study, Presented and published in the proceedings of National Conference on Frontier Areas in Geological & Technological Aspects of Fossil Fuel & Mineral Resources, Dhanbad, pp.171-179, 2-4 November, 2006.
- S. Roy, B. Sarkar and **A. Das**, Preparation of Pellet Grade Concentrate from Low Grade Iron Ore Slime from Chitradurga, Proceedings of International Conference on Future Technologies in Iron and Steel Making, Bhilai, India, 3-4 November, 2006, pp. 111-119.
- **A. Das**, B. Sarkar, U. S. Chatteraj, V. Kumar, R. Singh and K. K. Bhattacharyya, Analysis And Comparison Of Novel Coal Preparation Techniques For Indian Coking Coal Fines, Proceedings of International Seminar on Mineral Processing Technology, MPT-07, IIT Mumbai, pp. 228-231, 22-24 February, 2007.
- Biswajit Sarkar, S Chnadraseshkar and **Avimanyu Das**, Processing of Difficult-to-wash Indian Fine Coal Using Autogeneous Counter Current Density Separator, Proceedings of International Seminar on Mineral Processing Technology, MPT-07, IIT Mumbai, pp. 180-183, 22-24 February, 2007.
- Subrata Roy and **Avimanyu Das**, Ore Mineralogy and Pellet Grade Concentrate from Slime: A Case Study Of Jilling Langalota Deposit, Proceedings of International Seminar on Mineral Processing Technology, MPT-07, IIT Mumbai, pp. 497-501, 22-24 February, 2007.
- R. Singh, S. C. Maulik, R. K. Rath, S. Dey, **Avimanyu Das**, B. Nayak and K. K. Bhattacharyya, Designing Process for Beneficiation of Low Grade Iron Ore Samples from Orissa, Proceedings of International Seminar on Mineral Processing Technology, MPT-07, IIT Mumbai, pp. 277-280, 22-24 February, 2007.
- **A. Das**, B. Sarkar and S. P. Mehrotra, Characterisation of waste printed circuit boards with a view to beneficiation, presented in the International Conference on e-waste management in India – a sustainable solution, Mumbai, India, 18 May, 2007.
- S. Roy, **A. Das** and S. Venkatesh, Characterisation of Iron Ore from the Jilling Area of Eastern India with a View to Beneficiation, Proceedings of Iron Ore Conference, Perth, WA, 20 -22 August, pp. 179-186, 2007.
- B. Sarkar, S. Chandra Sekhar and **A. Das**, Advanced Gravity Separators: A Review of State of the Art Technology, Presented and published in the proceedings of National Conference on *Advanced Gravity Separation* (AGS-07), Jamshedpur, pp.57-74, August 30-September 1, 2007.
- S. Chandra Sekhar, B. Sarkar, **A. Das**, U. S. Chatteraj, V. Kumar, K. V. Rao and K. K. Bhattacharyya, Analysis of the Washability Characteristics of Low Volatile Indian Coking Coal with Crushing at Different Top Sizes, Presented and published in the proceedings of National Conference on *Advanced Gravity Separation* (AGS-07), Jamshedpur, pp.188-194, August 30-September 1, 2007.
- S. Roy, **A. Das**, B. Sarkar and K. K. Bhattacharyya, Separation Response of Iron Ores during Gravity Concentration, Presented and published in the proceedings of National Conference on *Advanced Gravity Separation* (AGS-07), Jamshedpur, pp.204-214, August 30-September 1, 2007.

- **A. Das** and S. P. Mehrotra, A comprehensive analysis of separation in Floatex Density Separator, Proceedings of XXIV International Mineral Processing Congress, Beijing, China, pp. 754-763, 24-28 September, 2008.
- S. Roy and **A. Das** and R. K. Upadhyay, Exploring the genesis, nature and value addition to blue dust from Jilling Langalota area of India, Proceedings of International Seminar on Mineral Processing Technology, MPT-08, Trivandrum, pp.217-222, 22-24 April, 2008.
- A. Vidyadhar, **A. Das** and K. Hanumantha Rao, Adsorption mechanism of long-chain alkylamines on quartz and albite, Proceedings of International Seminar on Mineral Processing Technology, MPT-08, Trivandrum, pp.306-313, 22-24 April, 2008.
- A. Vidyadhar, **A. Das**, K. K. Bhattacharyya and K. Hanumantha Rao, Adsorption mechanism of mixed long-chain amines and alcohols on silicate minerals, Proceedings of XI International Mineral Processing Symposium, Belek-Antalaya, Turkey, pp., 21-23 October, 2008.
- J. Adhikary, B. D. Mandal, V. S. Vaishanau and **A. Das**, Characterisation and processing of waste printed circuit boards, Presented and published in the Proceedings of National Conference on Environmental Issues on Geotechniques and Mineral Industry, BIT Sindri, Dhanbad, pp.373-380, April 4-5, 2008.
- Nisha Sinha, Rakesh Sah and **Avimanyu Das**, Advanced gravity separation of coal fines: a combined computational and experimental study, Presented and published in the proceedings of All India Seminar on *Emerging Trends of Chemical Engineering in Process Industries (ETCE-2008)*, Institute of Engineers, Jamshedpur, pp.53-60, 17-18 October, 2008.
- S. Roy and **A. Das**, Adverse effects on environment by the iron ore industries – some measures to reduce them, Presented and published in the proceedings of National Seminar on *Environmental Management in Mining and Allied Industries (EMMA-2008)*, IT-BHU, Varanasi, pp., 7-8 November, 2008.
- **A. Das**, B. Sarkar and S. P. Mehrotra, Fine coal beneficiation using floatex density separator – A theoretical and experimental study of the separation efficiency, Presented and published in the proceedings of RAMM & ASMP – 2009, Penang, Malaysia, Paper No. EV-16, 01-03 June, 2009.
- A. Vidyadhar, **A. Das** and S.P. Mehrotra, Recovery of metal values from ground Printed Circuit Boards using physical beneficiation techniques, Proceedings of International conference “The Fourth Asian Particle Technology Symposium (APT 2009)”, APT 2009/89, pp. 418-424, September 14-16, 2009, New Delhi.
- **Avimanyu Das**, Vidyadhar Ari and Sujit Kumar Dey, Modelling of fine coal processing in a teeter bed separator, in proceedings of *International Seminar on Mineral Processing Technology (MPT-09)*, IMMT Bhubaneswar, 28-30 October, 2009.
- A. Vidyadhar, V. S. Vaishanau and **A. Das**, Optimization of operating variables for flowing film concentration of pulverized printed circuit boards, in proceedings of *International Seminar on Mineral Processing Technology (MPT-09)*, IMMT Bhubaneswar, 28-30 October, 2009.
- S. Roy, **A. Das** and S. K. Mandal, Particle dynamics in floatex density separator as revealed by high speed videography and image processing, in proceedings of *International Seminar on Mineral Processing Technology (MPT-09)*, IMMT Bhubaneswar, 28-30 October, 2009.
- Anthony, S. K. Dey, R. Sah and **A. Das**, Segregation behavior and distribution of voidage and suspension density in a liquid fluidization column, in proceedings of *International Seminar on Mineral Processing Technology (MPT-09)*, IMMT Bhubaneswar, 28-30 October, 2009.

- **Avimanyu Das**, Sandip Chatterjee and S. P. Mehrotra, Characterization and processing of electronic waste for the recovery of metal values, Proceedings of XXV International Mineral Processing Congress, Brisbane, Australia, pp. 637-647, 6-10 September, 2010.
- S. K. Dey, A. Vidyadhar and **A. Das**, Study of progeny particle size distribution in an Impact Hammer Mill, in proceedings of *International Seminar on Mineral Processing Technology (MPT-10)*, NML Jamshedpur, India, pp. 107-113, 15-17 December, 2010.
- Pawan Kumar, Rakesh Sah, Vidyadhar Ari and **Avimanyu Das**, Dry beneficiation of coal fines using Air Table, in proceedings of *International Seminar on Mineral Processing Technology (MPT-10)*, NML Jamshedpur, India, pp. 446-451, 15-17 December, 2010.
- A. Vidyadhar, A. K. Singh, A. Srivastava, B. Nayak, K. V. Rao and **Avimanyu Das**, Beneficiation of banded hematite quartzite from Meghataburu Mine, Eastern India, in proceedings of *International Seminar on Mineral Processing Technology (MPT-10)*, NML Jamshedpur, India, pp. 583-589, 15-17 December, 2010
- S. Roy, A. Vidyadhar, S. K. Dey and **A. Das**, Optimization of Eddy Current Separation for the recovery of valuables from waste printed circuit boards, Proc. National Seminar on Electronic Waste (NASEW-10), pp. 109-119, 21-22 January, 2010, Jamshedpur.
- A. Vidyadhar, V. S. Vaishanau and **A. Das**, Application and Optimization of froth flotation for the beneficiation of e-waste, Proc. National Seminar on Electronic Waste (NASEW-10), pp. 161-170, 21-22 January, 2010, Jamshedpur.
- R. Sah, S. K. Dey, A. Vidyadhar and **A. Das**, Investigation on the applicability of advanced gravity separation for cleaning semi-coking coal fines, in proceedings of *International Seminar on Mineral Processing Technology (MPT-10)*, NML Jamshedpur, India, pp. 516-524, 15-17 December, 2010.
- Santosh Pani, Siddharth Singh, Subhajit Paramanik, Shobhana Dey and **Avimanyu Das**, Prospects of utilization of low grade iron ore from Kiriburu, *International Seminar on Mineral Processing Technology (MPT-11)*, HZL Udaipur, India, Paper No. FE13, 15-17 October, 2011.
- Shobhana Dey, Santosh Pani, Mamta Sharma, and **Avimanyu Das**, Advanced coal cleaning technology for challenges in near future, *International Seminar on Mineral Processing Technology (MPT-11)*, HZL Udaipur, India, Paper No. CP3, 15-17 October, 2011.
- A. Vidyadhar, A. Srivastava, R. K. Singh, B. Nayak, K. V. Rao, **A. Das** and K. K. Bhattacharyya, Development of processing technology for lean iron ore fines from Goa, *International Seminar on Mineral Processing Technology (MPT-11)*, HZL Udaipur, India, Paper No. FE4, 15-17 October, 2011.
- Vidyadhar Ari and **Avimanyu Das**, Kinetics and efficacy of froth flotation for the recovery of metal values from Pulverized Printed Circuit Boards, XXVI International Mineral Processing Congress, New Delhi, India, 24-28 September, 2012, pp. 0236-0243.
- Shobhana Dey, Santosh Pani and **Avimanyu Das**, Split flotation of LVMC coal to generate multiple products for complete utilization, XXVI International Mineral Processing Congress, New Delhi, India, 24-28 September, 2012, pp. 1151-1159.
- Ranjeet Kumar Singh and **Avimanyu Das**, Study of the separation features of fine coal cleaning in Kelsey Centrifugal Jig, XXVI International Mineral Processing Congress, New Delhi, India, 24-28 September, 2012, pp. 5047-5056.
- Ganesh Chalavadi, Ranjeet Kumar Singh and **Avimanyu Das**, Development of strategy for dry washing of different coal fines employing air fluidization and vibration, *Proc. International Seminar on Mineral Processing Technology (MPT-13)*, IMMT Bhubaneswar, India, 10-12 December, 2013, Vol. II, pp. 591-597.

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- A. Vidyadhar, Neha Kumari, Mamta Sharma, Ratnakar Singh and **Avimanyu Das**, Proc. National Seminar on Coal Preparation Technology: Beneficiation process for the production of low ash clean coal from non-coking coal (CPT-2013), 22-23 February, 2013, Dhanbad.
- Sharath Kumar Bhoja, Srijith Mohanan, C. Raghu Kumar, Ashok Kumar, Shobhana Dey and **Avimanyu Das**, Segregation of minerals in floatex density separator – A study by using synthetic mixture, *Proc. International Seminar on Mineral Processing Technology (MPT-13)*, IMMT Bhubaneswar, India, 10-12 December, 2013, Vol. I, pp. 125-129.
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- W. Nicholus, R. LaDouceur, **A. Das** and C. Young, Adsorption of salicyl hydroxamic acid on the oxides of selected rare earth elements, Proc. SME Annual Conference and Expo, Pre-print No. 16-167, Phoenix, AZ, USA, 21-24 February, 2016.
- **A. Das**, F. Dakubo and C. Young, Simultaneous EW of copper and iron using membrane technology, *Proc. XXVIII International Mineral Processing Congress (IMPC-16)*, Quebec, Canada, 11-15 September, 2016.
- Prince Sarfo, Gary Wyss, Guojun Ma, **Avimanyu Das** and Courtney Young, Carbothermal reduction of copper smelter slag for recycling into pig iron and glass, Proc. Sustainable Minerals 2016, MEI Conference, Cornwall, UK, 23-24 June, 2016.
- Greer Galt, **Avimanyu Das**, Rod James and Courtney Young, Adsorption kinetics of salicyl hydroxamic acid on the oxides of various rare earth elements, Proc. Sustainable Minerals 2016, MEI Conference, Cornwall, UK, 23-24 June, 2016.
- Marc Freddy Sime, **Avimanyu Das**, Gregory Hope and Courtney Young, Studies on the nature of hydroxamate complexation on the surface of neodymium oxide, Presented at SME Annual Conference and Expo, Denver, CO, USA, 19-22 February, 2017.
- S. Timbillah, C. Young, **A. Das**, C. Brown, J. Byers, B. Ramos and D.G. Laney, Investigating the mechanism of depression of disodium carboxy-methyl trithiocarbonate (Orfom® D8) in the chalcopyrite-molybdenite flotation system, SME Annual Conference and Expo, Minneapolis, MN, USA, 25-28 February, 2018.
- S. Timbillah, C. Young and A. Das, A Fundamental Study of Di-Sodium Carboxymethyl Trithiocarbonate (Orfom® D8) in Flotation Separation of Copper-Molybdenum Sulfides, Accepted, *Proceedings of Extraction 2018*, CIM, Ottawa, Ontario, Canada, August 26-29, 2018.

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Courses Taught

Particulate Systems Processing, Particulate Systems Design, Aqueous and Elevated Temperature Processing, M&ME Design I and II, Nonferrous Extractive Metallurgy, Ferrous Metallurgy, Fine Particle Processing, Waste Treatment and Utilization, Modelling and Simulation, Computational Techniques, Transport Phenomena in Metallurgy.

University Committee Membership

M.S. Dissertation Committee, Prince Sarfo	2016 – 2017
M.S. Dissertation Committee, Joel Gadikor	2017 – 2018
Ph.D. Dissertation Committee, Simon Timbillah	2017 – 2019
Ph.D. Dissertation Committee, Prince Sarfo	2017 – 2019
Library Committee	2016 – 2017
CRC Committee	2017 – 2018
Safety Committee	2018 – Present
Faculty Advisor, Club Met	2017 – Present

Mentorships

(i) Thesis advisor and post-graduate mentor

M.S.: Two students at Montana Tech

M. Tech.: Three students at ISM Dhanbad, India

Ph.D.: Three students at CSIR-NML Jamshedpur, India

(ii) Supervisor of Senior Design students

Matthew Bohlken, Lucas McMillan and Justin Hood in 2015-16 at Montana Tech, USA

Brandon Hill, Bridger Hurley and Nathan Eiselein in 2016-17 at Montana Tech, USA

(iii) Supervisor of Undergraduate Research

Eight students at ISM Dhanbad and NIT Durgapur, India during 1997-2003

John Hansen-Carlson at Montana Tech, USA during 2016-17

Service Activities

- Member, M&ME Activities such as Safety, ABET, Equipment Procurement & Maintenance, etc. at Montana Tech.
- Life Member and Executive Council Member of Indian Institute of Mineral Engineers
- Host and organizer of Indian Seminar on Advanced Gravity Separation (AGS-07), 2007.
- Host and organizer of International Seminar on Mineral Processing Technology (MPT-10), 2010.
- Editor - Proceedings of International Seminar on Mineral Processing Technology (MPT-2010).
- Editor - Proceedings of Indian Seminar on Advanced Gravity Separation (AGS-2007).

- Editor - Proceedings of Indian Seminar on Processing of Iron Ores (PIO-2008).
- Review Committee Member, E-waste recycling, funded by the Govt. of India, 2011-2013.
- Member of Project Evaluation Committee, TIFAC, India in 2010-11.
- Organizer of several short courses and workshops for industry personnel over the years.
- Reviewer of scholarly articles for a number of International Peer-reviewed Journals such as Minerals and Metallurgical Processing, Mineral Processing and Extractive Metallurgy Review, International Journal of Mineral Processing, Minerals Engineering, Separation and Purification Technology, International Journal of Coal Preparation and Utilization, Waste Management, Separation Science and Technology, Powder Technology, ACS Sustainable Chemistry and Engineering, African Journal of Environmental Science and Technology, Fuel, IEEE Journal, Minerals, Energy and Fuel, Environmental Science and Technology, Canadian Journal of Chemical Engineering, etc.