

Barada Kanta Mishra



Present Address:

Indian Institute of Technology Goa
(At Goa College of Engineering Campus)
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Present Position: Director
Indian Institute of Technology Goa

Areas of Specialization: Powder and Particles; Discrete Element Method (DEM); Minerals and Metals Extraction; Environment and Waste Treatment; Appropriate Technology

Academic Record:

Degree	Institute	Year	Remarks
B.Sc. (Engg.) (Metallurgical Engg.)	NIT Rourkela India	1981	1 st Division
M.S. (Metallurgical Engg.)	Wayne State University Michigan, USA	1986	3.76/4.0
Ph.D. (Metallurgical Engg.)	University of Utah Salt Lake City, USA	1991	

Publications:

Refereed Journal (SCI)	International Conference Proceedings	National Conference Proceedings	Patent filed	Patents granted	Book Chapters	Book
226	28	25	10	5	12	1

Professional Experience:

- Director CSIR-IMMT Bhubaneswar Dec 2005 – March 2017
- Chairman, Recruitment & Assessment Board CSIR, New Delhi May 2015 – May 2016
- Professor IIT Kanpur July 2001 – June 2011
- Visiting Professor, University of Utah, USA December 2003 - July 2004
- Associate Professor, IIT Kanpur May 1997 – July 2001
- Visiting Professor, Aston University, UK July 1999 - July 2000
- Assistant Professor, IIT Kanpur July 1993 - May 1997
- Post-doctoral fellow, University of Utah, USA January 1991 - June 1993
- Project Engineer, IMFA, India June 1981 - July 1984

Awards & Honors:

- National Mineral Award 2007
- IIME Mineral Beneficiation Award 2007
- Fellow, Indian National Academy of Engineering, 2009
- VASVIK Award for Industrial research in Materials Science & Technology, 2012
- Member, Editorial Board
 - :: International Journal of Mineral Processing, Elsevier Publications
 - :: Minerals Engineering, Elsevier Publications
 - :: Transactions of the Indian Institute of Metals, Springer Publications
 - :: International Journal of Mining and Mineral Processing, International Science Press
- IIME Best Conference Paper Award 2009
- NCB Best Conference Paper Award 2013
- IIME Best Published Paper Award 2010, 2015
- Participated in the Fulbright program, May-July 2002
- Adjunct Professor, University of Utah, Salt Lake City, USA, since 01 March 2011
- AICTE-INAE Distinguished Visiting Professor, IIT Bhubaneswar
- Chairman, Organizing Committee, International Mineral Processing Congress 2012
www.impc2012.org, New Delhi, 24-28 September, 2012
(The conference was organized for the first time in India)
- Member of Expert Committee formed by Hon'ble Supreme Court
for Macro EIA study in Goa relating to iron ore mining, November 2013-April 2015
- President, Indian Institute of Minerals Engineers (IIME) (2013-present)
- STAR Alumnus Award, NIT Rourkela, 2015
- Think Odisha Leadership Award, 2012
- Utkal Pratibha Samman, 2014

Thesis Supervision:

M. Tech	16 completed;
Ph.D.	11 completed; 2 in progress

Academic Experience (@ IIT Kanpur):

Courses Taught

ESO 214	Structure and Properties of Materials	UG Core
MME 421	Minerals Engineering	UG
MME 466	Particulate Materials	UG
MME 320	Units Processes in Extractive Metallurgy	UG
MME 331	Process Metallurgy Lab I	UG
MME 608	Computer Application in Minerals Engineering	PG
MME 638	Process Metallurgy	PG
MME 632	Analysis of Particulate Systems	PG

Courses Tutored

ESO 214	Structure & Properties of Materials	(MSE)	UG
ESC 101	Elements of Computing	(CSE)	UG
COMS 200	Communication Skills	(HSS)	UG
TA201	Manufacturing Processes	(ME)	UG

Academic Experience (@ CSIR-IMMT):

- 2009-2013 Designed and Introduced a new PG/M.Tech program in Materials Resource Engineering (PGRPE) at CSIR-IMMT
- 2009-2012 Taught a graduate level course on Design and Simulation of Mineral Processing Systems to PGRPE students of AcSIR.
- 2009-2012 Started a new PGDME program in Minerals Engineering
The course is intended for practicing engineers seeking skill enhancement.
- 2011-2013 Chairman of the National CSIR NET-Engineering examination.
Coordinating between various experts for setting question papers.
- 2013-2015 As AICTE-INAE Distinguished Visiting Professor:
Delivered lectures on the Discrete Element Method and its application to particulate systems at IIT Bhubaneswar

Continuing Education: Conducted the following short-term courses:

- Modeling and Simulation of Mineral Processing Units, IIT Kanpur, April 17-21, 1995.
- Industrial Grinding Practice, TEGA Industries, Kolkata, May 29-31, 2003.
- Processing of Particulate Materials, SAMTEL Ltd., Gazhiabad, July 7-8, 2003.
- Advances in Milling and Classification, Ashanti Gold Mines, Ghana, April 2-3, 2003.
- Modern Trends in Milling Practice, KIOCL Kudremukh, December 13-15, 2004.
- Discrete Element Method for Particulate Systems, IIT Kanpur, 22-24 April, 2005.
- Industrial Milling Practices, NALCO, Damanjodi, December 3-5, 2007.
- Industrial Milling Practices and Allied Issues, HCL, Khetri, February 26-28, 2008.
- Fundamentals of Iron Ore Processing, TATA Steel, Noamundi, March 1-5, 2009.
- Advances in Comminution Circuits, KIGAM, Daejeon, South Korea, May 2-4, 2011.
- Mineral Processing Plant Practice, M/s Tega Industries, Kolkata, 4-5 July, 2013.
- Mineral Processing Plant Design, NALCO, Damanjodi, 30 July – 2 August, 2013.

Selected Invited Talks:

- *Fun with granular materials*, CSIR Foundation Day Lecture at CGCRI Kolkata, 7th December, 2016.
- *Extraction of rare earth elements*, IIT Kharagpur, 6th November 2016.
- *Toward building a resource based sustainability foundation*, Foundation Day Lecture at IIT Dhanbad, 9th December, 2015.
- *Present and future methods of iron ore processing*, International Workshop on Iron and Steel, Department of Materials Engineering, IISc Bangalore, 3-5 December, 2014.
- *Packing of particles*, Invited talk at TU Graz, Austria, 23rd October, 2014.
- *Why some minerals do not float?* Invited talk at University of Utah, Salt Lake City, USA, 31st January, 2012.

Membership in National Committees:

- Member, Public Accounting Committee (PAC) on Materials, Mining, and Minerals of Department of Science & Technology, Govt. of India, New Delhi, 2007-2015.
- Member, PAC on Fly Ash Utilization and Disposal, Department of Science & Technology, Govt. of India, New Delhi, 2008-2013.

- Member Indo-EU evaluation committee for Computational Materials Science, Department of Science & Technology, Govt. of India, New Delhi, 2007.
- Member Empowered Committee, Ministry of Steel, Govt. of India, 2006-present.
- Council Member, Indian Institute of Mineral Engineers (IIME), 2006-present.
- Council Member, Indian Institute of Metals (IIM), 2006-2009.
- Member Board of Governors, IISER Kolkata, 2009-2012.
- Member Academic Council, NISER Bhubaneswar, 2007-2010.
- Member Academic Senate, IIT Bhubaneswar, 2008-2012.
- Chairman, screening committee for grant of recognition and registration to in-house R&D laboratories of India, DSIR, 2012-present.
- Convener, Sectional committee on Mining, Metallurgical and Materials Engineering, (INAE), 2015-present.
- Member of the Expert Committee to suggest a roadmap for promotion of Biju Patnaik National Steel Institute (BPNSI) as an exclusive Iron & Steel Institute of national importance with the status of a university.
- Member of the Expert Committee on Rare Earth, NITI AAYOG.
- Member Board of Governors, IDCOL Govt. of Odisha

Commercial Software Developed:

- **Millsoft:** A discrete element method based simulation software to simulate ball mill, SAG mill, planetary mill, and other discrete particle systems. Extensively used for simulation of comminution circuits.
- **Symyclone:** AGUI based simulation tool for designing industrial hydrocyclone which is exclusively used by M/s Tega Industries Ltd., Kolkata.
- **SimJIG:** A simulation tool that allows tracking of particles during jigging and predicts extent of stratification of particles. The software was developed and delivered for exclusive use of RDCIS, SAIL.

Incubated the first *start-up* company out of the MSE department of IIT Kanpur along with Prof. S. Sangal and Prof. A. Garg

The start-up is about development of state-of-the-art milling device to prepare nano powders of oxides and carbides. Currently the company operates as *EGOMA Technologies Pvt. Ltd.*

<http://www.egomatech.com>