

Bio profile

Dr. Malobika Karanjai

Present Employment:

Scientist-F, Centre for Nano Materials, International Advanced Research Centre for Powder Metallurgy and New Materials, ARCI- Hyderabad-500005

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Education

Doctoral degree from IIT Bombay (2008)

Graduated in Mechanical Engineering (1990) from National Institute of Technology, Raipur, CG India (GEC, Raipur)

Work Experience

M/s Batliboi & Co. Ltd., Bombay (1990-1994): Project engineer

Worked in turnkey projects of Installation and commissioning of Gas Cleaning plant for Air Pollution Control in Steel Melting Shop, **Bhilai Steel Plant, Govt. of India**. The project involved trapping of sub micron sized iron oxide dust from exhaust flue gases of steel melting shop by mechano-chemical treatment into slurry/sludge form for further disposal as project engineer. Responsibilities included pipe line LAYING Network, integration and commissioning of the testing and instrumentation in the entire layout of the integrated plant-design with proper approvals from BSP, SAIL.

International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad (1994-till date)

1994-1997: Contract Engineer

1997: Scientist B

Department: Powder Metallurgy Division/Centre for nano materials

Present Designation: Scientist-F

Training programs on R& D, sponsored by DST, Govt. of India

Gas Institute, Kiev, Ukraine- 1999

Darmstadt University of technology & Karlsruhe Institute of Technology, Germany-2006

AREA of Expertise:

Powder Metallurgy and alloy applications, Composites for product development Biomaterials/bio-implants, Magnetic Materials Indigenous Equipment and machinery design and development at Pilot levels, design of composite materials.

Technical/R&D experience:

Involved in various R&D or technology-development projects as Principle Investigator

- I. Development and installation and commissioning of Vertical Shaft Reduction Furnace and setting up of PM processing downstream PM equipment at 800 kgs/day for
Carbothermic reduction of beneficiated iron ore powder to obtain PM grade Fe powder– 1 crore project -jointly with Industry Partner - M/s Hitech Blue Metals Pvt. Ltd., and NMDC, Hyderabad
The project was a collaboration of Tschnerimrtt, Moscow and later with Gas Institute, Kiev, Ukraine, with modifications of design suitable for Indian conditions.
- II. **Hydrogen de-carburization annealing of sponge iron fines generated from above for PM and other application oriented grades of Fe powder with Gas Institute- Kiev,**
- III. **Direct hydrogen reduction of fine blue dust to obtain High Purity carbonless (HPCL) iron powder for magnetic applications**
- IV. **R& D on many application-specific iron and iron based alloy powders**
- V. **Established pyrolytic grade iron powders for thermal battery applications-Developed for supplying to Hyderabad Batteries Limited, Hyderabad**
- VI. **Food warming grade powder-Developed for Defence Food Research Laboratory, Mysore**
- VII. **Established fine iron powders (size < 20 μm) used as a cost effective additive for MIM grade iron powders. Developed for Indo US MIM Technologies, Bangalore**
- VIII. **Established iron based alloy powders (Fe-Ni-Mo-Cu) by co-reduction method of respective oxide powders using factorial designed experiments GI, Kiev, Ukraine**
- IX. **Established pilot scale production parameters for Fe-P alloy powder for soft magnetic applications**
X. **Established iron powder for welding electrode applications. Supplied to Dweekam Electrodes Pvt. Ltd., Bombay**
- XI. **Titanium based bio composites for load bearing implants (DBT, New Delhi)**
- XII. **Nano powders by chemical vapor synthesis in collaboration with Damsdadt University, Germany**
- XIII. **Technology developed for Cerametallic Friction Material Composites for clutch facings for Clutch Auto Ltd, Faridabad (CSIR, NMITLI) including Custom built equipment MPHP**
- XIV. **Soft-Magnetic In situ core-shell based Fe-Mn_xZn_yFe₂O₄ composites developed for high-frequency reactor core application of electric vehicles for TSL, Jamshedpur**
- XV. **In-situ reduced iron oxides for iron based composites or intermetallics - Inhouse project and further for scaling up developed Progressive Reactive Hot Press**

Process Equipment developed in-house at pilot levels:

Multipurpose Hydrogen Hot press (MPHP) - 52 lacs;

Progressive Reactive Hydrogen Hot press(PRHP) -95 lacs

Awards:

Conferred Vista-2022 award of 'Distinguished Researcher in Materials' for contribution and achievement in the discipline of Engineering'

Publications (Peer reviewed journals)*: 22

Presentations*: 67 Plenary and keynote/invited/contributory talks in national/international conferences including motivational talks/lectures

Patents*: 6

Affiliations

- a. Life Member, Powder Metallurgy Association of India (PMAI), BARC, Bombay, India
- b. Life Member, Magnetics Society of India (MSI), DMRL, Hyderabad, India, 500 058
- c. Life member , Indian Women Scientists Association (IWSA)

Coveted positions

- a. Nominated as member of "Consultative Group on e-mobility" constituted by the Office of Principal Scientific Adviser- Govt of India.
- b. Nominated as subject expert of selection committee in the area of composites and magnetic materials-science and technology category for WOMEN Scientists Scheme WOS-A-DST, New Delhi.
- c. Advisor of All India Association of Lady Entrepreneurs (ALEAP)
- d. Research Advisory Board Member of ARKA Medical Devices
- e. Governing Council member of PMAI & Joint Secretary
- f. Editorial Board member/ Guest Editor of
 - a. Materials Today Proceedings
 - b. Journal of Powder Technology
 - c. Transactions of Powder Metallurgy Association of India
- g. Reviewer of International Journals, funding proposals, reviewer of PhD & M. Tech Thesis of IITS, HCU's and Foreign Universities
- h. Chairperson on national and Intl conferences
- i. Co-convener of Intl Conference of PMAI 2021 & 2022
- j. Guided 6 M. Tech projects, 6 B. Tech Projects

Editor of Institute Journal -ARCI "Srujan" in Hindi language

Mentoring

STEM sessions across national and state levels

Mentor of All India Association of Lady Entrepreneurs (ALEAP)-Hyderabad, dealing

Mentor of Sashakt Program of Dr. Reddy's Foundation for women and girl students

AWARENESS PROGRAM conducted on 'Sexual Harassment of Women at

Workplace" in CHESS- RCI, Hyderabad

Administrative responsibilities

- 1) Presiding officer- Internal Complaints Committee (2017-2021)
- 2) External Member of ICC- DMRL, Hyderabad (2017-2022)
- 3) Vice-Chairperson of Official Language Implementation Committee (2017-2021)
- 4) Member of various purchase committees since 2005 till date

List of publications

Patents granted/filed:

1. B.I. Bondarenko, Y. Pokatilov, A. Sviatenko, D. Fedorov, Malobika. K and A. Sivakumar, 'A METHOD AND APPARATUS FOR APPLYING A PROTECTIVE CARBON BLACK COATING ON METALLIC SURFACES' patent application no. 719/MAS/1999, granted on 13/11/2007, patent no. 211922.
2. J. Pandurangam, Malobika. K, 'PROCESS FOR CARBOTHERMIC REDUCTION OF IRON OXIDE IN AN IMMISCIBLE FLOW WITH CONSTANT DESCENT IN VERTICAL RETORT OF SILICON CARBIDE', application No: 546/CHE/2003A, date of filing: 01/07/2003, Publication Date: 29/06/2007, patent no. 205728.
3. Malobika. K, R. Sundaresan, T.R. Rama Mohan, B.P. Kashyap, TITANIUM BASED BIOCOMPOSITE MATERIAL USEFUL FOR ORTHOPAEDIC AND OTHER IMPLANTS AND A PROCESS FOR ITS PREPARATION, patent application no. 2490/DEL/2005, patent no. 228353, granted on 03/02/2009
4. Malobika. K and A. Siva Kumar, 'A PROCESS AND A MULTI PISTON HOT PRESS FOR PRODUCING POWDER METALLURGY COMPONENTS, SUCH AS CERAMETALLIC FRICTION COMPOSITES', application no. 3844/DEL/2011, Patent no.: 379250
5. Malobika Karanjai, A. Siva Kumar and G. Babu, 'A NOVEL EQUIPMENT TO ACCOMPLISH POWDER METALURGY PROCESSING STARTING FROM 'RAW MATERIALS TO FINAL PRODUCT, application no. 201711011552 dated 30th March 2017, published on 5th Oct 2018
6. Malobika Karanjai, Pramod H Borse and A. Siva Kumar, 'PROCESS OF ELECTROLESS NICKEL/NICKEL PHOSPHIDE (EN) DEPOSITION ON GRAPHITE SUBSTRATES, 1st Nov 2018, patent grant no. 408686.

Papers Published

1. D.N. Fedorov, B.I. Bondarenko, Y.P. Pokotylo, O.M. Sviatenko, A. Sivakumar and **M. Karanjai**, Investigation of the influence of annealing parameters on iron powders produced from Indian ore concentrate”, 1999, Eco–Technologies and Energy Savings, Journal of Scientific studies, vol 5, 20-27. (Ekotechnologii IRresursosberezhenil)
2. Bondarenko B.I, Fedorov D.N, A.I. Khovavko, **M. Karanjai**, R. Sundaresan and A. Sivakumar, Study of soft magnetic iron powder production, Workshop on production and applications of soft magnetic materials for electric motors, European Powder Metallurgy Congress in Munich Trade Fair Centre, Germany, October 18-20, 2000, 103-109
4. Fedorov D.N, **M. Karanjai**, A. Sviatenko, A. Sivakumar, Study of the obtaining process of produce low carbon reduced iron powder from hematite by method of frozen furnace,

Poroshkovaya Metallurgia, vol 3/4, March-April, 2002, pp 115-122.

5. Fedorov D.N, **M. Karanjai**, A. Sviatenko, A. Sivakumar, Study of the obtaining process of produce low carbon reduced iron powder from hematite by method of frozen furnace, Powder metallurgy and metal ceramics, vol. 4/4, p 212-218, 2002.
6. **M. Karanjai**, D.N. Fedorov and A. Sivakumar, Iron based alloy powder Fe-P for soft magnetic application by a thermo-chemical process, Transactions of Powder Metallurgy Association of India, vol 28, 2002, pp 22-30.
7. A.I. Khovavko, D.N. Fedorov and **K. Malobika**, Thermodynamic evaluation of reduction of silica in the presence of iron, Transactions of powder metallurgy association of India, vol 28, 2002, pp 64-70
7. A.I. Khovavko, **K. Malobika**, A.M. Sviatenko and D.N. Fedorov, Study of reduction kinetics of blue dust", Powder Metallurgy in Automotive applications-II, Chapter 2, Eds. T.R. Rama Mohan & P. Ramakrishnan, Oxford and IBH Publications Co. Pvt. Ltd., 2002, pp 95-104.
8. DN Fedorov, B.I. Bondarenko, E.P. Pokotilo, A.M Sviatenko, A. Sivakumar & **M. Karanjai**, Study of the Preparation of Reduced Low-Carbon Iron Powder from Haematite Using the 'Frozen Furnace' Experiment, Powder Metallurgy and Metal Ceramics, Vol. 41, Nos. 3-4, 2002 pp 212-218
9. D.N. Fedorov, **M. Karanjai** and A. Sivakumar, Development of technologies to produce iron based powder from Indian Blue Dust, Euro PM 2004 (Conference proceedings) Powder manufacturing and processes, 2004, 105-110 Editors Dr. Herbert Danninger and Dr. Raimund Razi.
10. D.N. Fedorov, **M. Karanjai**, R. Sundaresan and A. Sivakumar, Selection of alloying method to produce iron based powder, Powder Metallurgy and metal ceramics, 44(5/6), pp 211-215, 2005.
11. **D.N. Fedorov**, **M. Karanjai**, R. Sundaresan and A. Sivakumar, Selection of alloying method to produce iron based powder, Poroshkovaya Metallurgia, vol 5/6, p. 8-13, 2005.
12. **M. Karanjai**, R. Sundaresan, G. V.N. Rao, T.R. Rama Mohan, B.P. Kashyap, Development of titanium based biocomposite by powder metallurgy processing with *in situ* forming of Ca-P phases, Mat. Sc. Engg. A, 2007, 447 (1-2), 19-26. Cited 22
13. **M. Karanjai**, B.V. Manoj Kumar, R. Sundaresan, B. Basu, T.R. Rama Mohan and B.P. Kashyap, Fretting wear study on Ti-Ca-P biocomposite in dry and simulated body fluid, Mat. Sc and Engg A, 2008, 475 (1-2), 299-307. Cited 18
14. **M. Karanjai**, R. Sundaresan, T.R. Rama Mohan and B.P. Kashyap, Evaluation of growth of calcium phosphate ceramics on Ti-Ca-P biocomposites, Mat. Sc. Engg. C, 2008, 28, 1401-1407. Cited by 8
15. **M. Karanjai**, A. Jyothirmayee, R. Sundaresan, T.R. Rama Mohan and B.P. Kashyap, Corrosion behaviour of PM processed Ti-Ca-P composites in Hank's Balanced Salt Solution using potentiodynamic studies, International Journal of Applied Ceramic Technology, 7[2], 148-155, 2010. (cited by 11)

16. J. Nitesh Raj, R. Bollina, V. Uma & **M. Karanjai** *, Consolidation of Composite Iron Powder by Spark Plasma Sintering for Soft Magnetic Applications, Transactions of PMAI Vol. 38, pp21-24 2015
17. Arunagshu Das, Susenjit Sarkar, **Malobika Karanjai***, Experimental investigation of the compressibility and mechanical properties of Cp-Ti powder metallurgy components, Transactions of PMAI, Vol. 42 No. 1, pp 32-38, June 2016.
18. Arunagshu Das, Susenjit Sarkar, **Malobika Karanjai***, Goutam Sutradhar, Application of Box-Behnken Design and Response Surface Methodology for Surface Roughness Prediction Model of CP-Ti Powder Metallurgy Components through WEDM, J. Inst. Eng. India Ser. D, Springer publications, DOI 10.1007/s40033-017-0415-0
19. **A. Das**, S. Sarkar, **Malobika Karanjai** and G. Sutradhar presented a paper on 'RSM based study on the influence of Sintering Temperature on MRR for Titanium powder Metallurgy Products using Box-Behnken Design', Materials Today: Proceedings 5(2018) 6509-6517.
20. **A. Das**, S. Sarkar, **Malobika Karanjai** and G. Sutradhar, Investigation of the Compressibility and Machinability of Sintered Titanium Powder Metallurgy parts vis-à-vis cast Titanium Products, Transactions of 65th Indian Foundry Congress (2017), 162-169.
21. **A. Das**, S. Sarkar, **Malobika Karanjai** and G. Sutradhar, "An experimental investigation into the role of sintering temperature on the metal removal; rate of titanium powder metallurgy products through Taguchi method", Indian Journal of Engineering and Materials Sciences, Vol 25, Oct 2018, 377-382.
22. **Riyaz Uddien Shaik**, **Malobika Karanjai**, Joydip Joardar, Neha Y. Hebalkar and Pramod H. Borse, "Thermally Stable Electro Catalytic Nickel-Phosphide Film Deposition on Graphite for HER Application", Materials Science and Engg B, (115927), doi.org/10.1016/J.smeb.2022.115927 2022

Presentations

1. K. Malobika*, A. Sivakumar, D.N. Fedorov, A. Sviatenko, Optimization of chemistry of sponge iron powder, presented at POWMAT'99, Hyderabad.
2. K. Malobika*, Reduction-de carburising annealing and its application to iron systems, ARCI, 1999.
3. K. Malobika*, S.B. Chandrasekhar, A. Sivakumar, Sintering studies on iron powders produced from haematite and magnetite, presented at PMAI 2000, Chennai
4. Bondarenko B.I, Fedorov D.N, A.I. Khovavko, M. Karanjai*, R. Sundaresan and A. Sivakumar, Comparative study of iron powders produced through different routes for soft magnetic applications, Workshop on production and applications of soft magnetic materials for electric motors, European Powder Metallurgy Congress, Munich Trade Fair Centre, Germany, October 18-20, 2000.
5. M. Karanjai*, D.N. Fedorov and A. Sivakumar, Iron based alloy powder Fe-P for soft magnetic application by a thermo-chemical process, PM 02, India Habitat Centre, New Delhi, 2002
6. A.I. Khovavko, D.N. Fedorov and K. Malobika*, Thermodynamic evaluation of reduction of silica in the presence of iron, PM 02, India Habitat Centre, New Delhi, 2002.
7. A.I. Khovavko, K. Malobika*, A.M. Sviatenko and D.N. Fedorov, Study of reduction kinetics of blue dust", Powder Metallurgy in Automotive Applications-II, 2002
8. M. Karanjai*, R. Sundaresan, T.R. Rama Mohan and B.P. Kashyap, Titanium-calcium-phosphatic Biocomposites through powder metallurgy, PMAI 03, Kolkata, 22nd -23rd Jan, 2004.

9. M. Karanjai*, R. Sundaresan, T.R. Rama Mohan and B.P. Kashyap, Titanium-calcium-phosphatic Biocomposites through PM Processing-a Study, Indo-Australian Conference on Biomaterials, Implantable devices and Tissues Engineering, *BITE 05*, SCTIMST, Trivandrum, India, 19th-21st Jan. 2005 (**Invited talk**).
10. Malobika Karanjai*, Ranganathan Sundaresan, Tallapragada Raja Rama Mohan, Bhagwati Prasad Kashyap, Processing and properties of *in situ* Ti-Ca-P biocomposite by PM processing for load bearing applications, International conference on Design of Biomaterials (BIND 06), 8-11th December, 2006, IIT Kanpur, India (**Invited talk**)
11. M. Karanjai, A. Jyothirmayee, R. Sundaresan, T.R. Rama Mohan and B.P. Kashyap, EIS studies of PM processed Ti-Ca-P biocomposites in Hanks Balanced salt solution, PM-07, International conference with exhibition, Emerging Solutions through Powder Metallurgy for Automotive and Engineering Industry, PMAI, New Delhi, Feb 9-11, 2007, N. Delhi, India.
12. Malobika Karanjai*, Deepak K. Pattanayak, B. P. Kashyap, B. T. Rao, R. Sundaresan, T. R. Rama Mohan, Studies in synthesis of particulate bioceramic composite materials, Indo-US workshop on composite biomaterials and implants, Indian Institute of Technology, 11-13th Dec 2007, Chennai, India. (**Invited talk**)
13. M. Karanjai*, D. Chakrabarty and V. Mahender, Production of nano-crystalline titania using chemical vapour synthesis process, PM 08, International Conference and exhibition, Cost Effective Technologies for net shape production, Chennai Trade Centre, Chennai, India, 20-21st Feb 2008.
14. M. Karanjai*, Y. Krishnapriya, D. Sen, A. Shiva Kumar and A. Venugopal Reddy, Effect of pressure assisted sintering on Fe-based composite material– a comprehensive evaluation, The Fourth Asian Particle Technology Symposium (APT 2009), New Delhi, India, 14-16th Sept 2009. (**Invited talk**)
15. M. Karanjai*, A. Siva kumar, G. Babu and P.G Reddy, Sintering of cermet composites using a newly designed hot press, International conference and exhibition on PM in processing of particulate materials and products (PM10), Jaipur, India, 28-30th January 2010.
16. M. Karanjai*, Composite Friction Materials, Powder metallurgy Short Course for Practicing Powder Metallurgists in Industries (PMSC), Pune, India, 9-11th October 2011, (**Invited talk**)
17. M. Karanjai*, Y. Krishnapriya, D. Sen and A. Siva Kumar, Interdependence of sintering time-temperature-pressure on thermal behaviour of cermet friction composites, International conference & Exhibition on powder Metallurgy for Automotive and Engineering Industries-PM11, Pune, India, 2nd-4th February 2011.
18. **M. Karanjai**, D. Sen and A. Siva kumar, "Future trends in design of friction materials for improved life and passenger comfort-A case study of 'Multi piston hot press (MPHP) for bonded cerametallic friction pads useful for clutch and brake applications", Invited talk, PM12, 2-4th Feb, Bombay (**Invited talk**).
19. **M. Karanjai***, PM composite friction materials, Powder Metallurgy Short Course, Indian Institute of Technology-PMSC12, Mumbai, India, 15-18th March, 2012 (**Invited talk**)
20. M. Karanjai* and A. Jyothirmayee, Corrosion aspects of cermet friction materials, International conference & Exhibition on powder Metallurgy for Automotive and Engineering Industries-PM13, Pune, India, 2nd-4th February, 2013 (**Plenary session talk**)
21. **M. Karanjai**: PM composites in biomedical applications, PMSC-2012 21st-24 Feb 2013 (**Invited talk**)
22. **M. Karanjai**, Aviral B, Uma V, Neha H, Gopalan R & Chandrasekaran V, Development of PM processed Fe-based soft magnetic material for automotive applications, PM14, Chennai, 23rd Jan 2014 (**Plenary session talk**).
23. **Malobika Karanjai**, "Composite materials and their processing", 18-21st November, 2013, PM short Course, ARCI Hyderabad

24. **Malobika Karanjai**, Cerametallic composites, 'International workshop on Ceramics, Carbon and Diamond', 22ND-26th September 2013, Nasik, **(Invited Talk)**.
25. **Malobika Karanjai**, Friction Composite Materials, 'International workshop on Carbon, Composites and Diamond', 31-31st October 2014, **(Invited Talk)**.
26. **Malobika Karanjai**, Development and consolidation of silica coated iron powder for soft magnetic applications, at International Conference on Particulate Materials and Automotives, special focus on magnetic materials applications PM14, 23th-25th Jan 2014, Chennai, **(Invited Talk)**.
27. **Malobika Karanjai**, Friction materials and composites, PMSC14, December 03-05, 2014, Ahmedabad **(Invited Talk)**.
28. **Malobika Karanjai**, PM in bioengineering Materials, PMSC14, December 03-05, 2014, Ahmedabad **(Invited Talk)**.
29. **Malobika Karanjai**, Resin-inorganic coated bonded magnets', International conference of Advancements in Polymeric Materials, IISc Bangalore, 20th -22nd Feb 2015 **(Invited Talk)**.
30. **M. Karanjai**, Structure Property Correlation of Hot Pressed Oxide Coated Powders, 19th -21st Jan 2015, at International conference of PM15, Mumbai **(Invited Talk)**.
31. **M. Karanjai**, PM Friction Materials in Clutches and Brakes", 24th-27th September 2015, Carbon, Composites and Diamond, CCD15, Pune **(Invited Talk)**.
32. **Malobika Karanjai**, Friction Materials and Composites at Powder Metallurgy Short Course PMSC 2016 at Government College of Engineering, PUNE on 26th Nov. 2015 **(Invited Talk)**.
33. **M. Karanjai**, Soft magnetic composites for automobile applications: Promises and challenges, 18-20th Feb 2016, Pune, International Conference on Particulate Materials and Automotives, PM16 **(Invited Talk)**.
34. Malobika Karanjai, **A. Das**, S. Sarkar and G. Sutradahar, Experimental investigation of the compressibility and mechanical properties of Cp-Ti powder metallurgy components, 18-20th Feb 2016, Pune, ATM, International Conference on Particulate Materials and Automotives, PM16.
35. **Malobika Karanjai**, Advances in PM processed composites – promises and challenges, 19-20th Jan, IIT Bombay, 3rd Indo-Austrian symposium on Advances in Materials Engineering-AME2016 **(Invited talk)**.
36. **Malobika Karanjai**, Hot consolidation and Hot isostatic Pressing, 20th -22nd Feb 2017, New Delhi, Special session on business opportunities at Intl. Conf. on Powder Metallurgy and Particulate Materials- GoPM, PM17 **(invited talk)**.
37. **A. Das**, S. Sarkar, Malobika Karanjai and G. Sutradahar, Investigation of the Wire-EDM characteristics on CP-Titanium powder metallurgy components –an RSM approach, 20th -22nd Feb 2017, Delhi, Intl. Conf. on Powder Metallurgy and Particulate Materials and 43rd Annual Technical Meet, PM17.
38. **Dr. Malobika Karanjai** delivered an Invited lecture on "Newer challenges in high density PM Parts" at 'International Conference on Powder Metallurgy and Particulate Materials (PM17)' at New Delhi at during 21st-22nd Feb 2017.
39. **A. Das**, S. Sarkar, Malobika Karanjai and G. Sutradahar, 'RSM based study on the influence of Sintering Temperature on MRR for Titanium powder Metallurgy Products using Box-Behnken Design' at 7th International Conference of Materials Processing and Characterisation (ICMPC 2017), 17-19th March 2017, Gokkaraju Rangaraju Institute of Institute of Engineering and Technology(GRIET), Hyderabad, Telangana **(Invited talk)**.
40. **Mr. Shaik Riyazuddin**, Dr. Malobika Karanjai, Joydip Joardar, Pramod H. Borse, "Comparison of nano-structured Nickel Phosphide film on graphite substrate versus FTO substrates", National Conference on Advances in Materials and Manufacturing Technologies (NCAMMT'17), SRM University, Vadapalani campus, Chennai, 24-25th March 2017.

41. **A. Das**, S. Sarkar, and G. Sutradahar and Malobika Karanjai, 'An Experimental Investigation of the Machining Characteristics of CP-Ti Powder Metallurgy Components by Wire-Cut EDM', 6th International and 27th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2016), College of Engineering Pune, Maharashtra, 16th -18th December 2016.
42. **Malobika Karanjai** delivered an **invited talk** on, "Composites: the Future" at Matrushi Engineering College, Saidabad, Hyderabad
43. **Malobika Karanjai** delivered an **invited talk** on, 'Core-shell' powders of Fe-Mn_xZn_yFe₂O₄ powders for their application as Magnetic Composites/cores: Design & evaluation' at 'International Conference on Powder Metallurgy and Particulate Materials (PM18)' at Navi Mumbai during 21st-22nd Feb 2018.
44. **Malobika Karanjai** delivered an **invited talk** on "World of composites-conventional and niche applications' on 20th March 2018, at GMR Institute of Technology, GMR Nagar, Rajam
45. **Malobika Karanjai** delivered an **invited talk** on "Women in STEM" under a DST residential orientation program for 35 meritorious girl students of 11th std. for motivation on scientific career at IITH on 18th May 2018.
46. **Malobika Karanjai** delivered an **invited talk**, "Composites-conventional & niche applications", on a two-day national workshop of Powder Metallurgy & Advanced Composites, RGUTK, IIT- Basar on 28th September 2018
47. **Malobika Karanjai** delivered an **invited talk**, "Friction materials and Composites", at Powder Metallurgy Short Term Course (PMSC 2018) organised by PMAI from 12th-15th October 2018 at COEP, Pune.
48. **Malobika Karanjai** delivered an **invited talk**, 'Fe powder production from direct reduction of ores" at a 2-day International Conference organized by IIM Bhilai Chapter& SAIL, Bhilai Steel Plant, Bhilai on 26th October 2018.
49. **Malobika Karanjai** delivered an **invited talk**, "Composites: Spread in Present and Future Engineering Applications" in a 2-day National Seminar on "Recent Trends in Materials Research for Science and Engineering Applications (RTMRSEA-2018) organized by M.V.S.R Engineering College, Nadergul, Hyderabad 20th December 2018.
50. **Malobika Karanjai** delivered an **invited talk**, "Composites: Spread in Present and Future Engineering Applications" in an Orientation program for Lecturers, organized by Physics department, Osmania University, Hyderabad 5th January 2019.
51. **Malobika Karanjai** delivered a **keynote lecture**, "Design of a Novel Progressive Reactive Hot Press (PRHP) for PM alloys and composites" in a 3-day **Asian Powder Metallurgy Conference APMA2019**, held at Pune India, dtd. 21st Feb 2019.
52. **Malobika Karanjai** delivered a **motivational talk**, Commercially Viable Technologies from ARCI, GOI" at an 'Awareness program on food processing, life sciences and MSMEs' at Vijayawada on 26th March 2019, organized by **ALEAP**
53. **Malobika Karanjai** delivered **visiting-professor lecture**, PM composites and application" as part of course work for under graduate students at Materials Science and Engineering, IIT Hyderabad on 24th April 2019
54. **Malobika Karanjai** delivered a **keynote lecture** on, "Developing technologies from Laboratory to industry in ARCI", at an 'Building Blocks for sustainable Start-Up Business from 24th-27th June", for MSMEs' at **ALEAP**, Hyderabad, on 24th June 2019.
55. **Malobika Karanjai** delivered an **invited talk**, Friction materials and composites" at 'PM short Course –PMSC 2019' at Pune on 28th Sept 2019, organized by PMAI.

56. **Malobika Karanjai** delivered an invited **plenary session lecture on**, “Development of Fe -based cerametallic friction materials for clutch and brake applications, at ‘2019 XIV National Conference on Women led Science’ at National Institute of Nutrition, Hyderabad from 11th-13th Dec 2019.
57. **Malobika Karanjai** delivered a **plenary session lecture on**, “Beneficiation of Fe ore dust : Mines to Potential Applications”, at XVIII Conference on Mineral Processing Technology MPT-2019” organized by Indian Institute of Mining Engineers, at Hyderabad from 16th-18th Dec 2019 on 16th Dec 2019.
58. **Malobika Karanjai** delivered a **key note lecture on**, “Soft Magnetic PM components in Electric vehicles & ARCI’s perspectives on coated Fe composites”, at International Conference on Powder Metallurgy and its Applications-PM20 organized by PMAI at Bombay from 18th-21st Feb 2020 on Feb 2020.
60. **Malobika Karanjai** delivered an **invited talk**, ‘Friction materials” at ‘PM short Course –PMSC 20’ at Pune on 29th Sept 2020, organized by PMAI.
61. **Malobika Karanjai** delivered an **invited talk**, ‘Biomaterials” at ‘PM short Course –PMSC 20’ at Pune on 29th Sept 2020, organized by PMAI on virtual e-learning platform.
62. **Malobika Karanjai** delivered a **plenary session talk** on “Development of core-shell Fe-Manganese Zinc Ferrite composite technology for high frequency electromagnetic applications using reduced fine reduced Fe powder”, 17th May 2021 on virtual platform.
64. **Malobika Karanjai** delivered an **invited talk**, ‘Friction materials” at ‘PM short Course –PMSC 21’ at Pune on 28th Sept 2021, organized by PMAI on virtual e-learning platform.
64. **Malobika Karanjai** delivered an **invited talk**, ‘Biomaterials” at ‘PM short Course –PMSC 21’ at Pune on 28th Sept 2021, organized by PMAI on virtual e-learning platform.
65. Malobika Karanjai delivered a **keynote lecture** in Intl PM conference PM22, “A viable Approach Towards Enhanced Densification of Fe/Fe-alloy powders using Hydrogen Hot Compaction, 19th April 2021, on e-platform.
66. Delivered an **invited talk** organized by office of PSA, at IIT-Chennai on 19th Sept 2022, on Motors and magnetic Materials for EVs.
67. **Malobika Karanjai** delivered an **invited talk**, ‘Friction materials” at ‘PM short Course –PMSC 21’ at Pune on 23rd Sept 2022, organized by PMAI on virtual e-learning platform.
68. **Malobika Karanjai** delivered an **invited talk**, ‘Biomaterials” at ‘PM short Course –PMSC 21’ at Pune on 24th Sept 2022, organized by PMAI on virtual e-learning platform.
