

## FACULTY PROFILE

**Name** : Dr. Siddhaling M. Jigajinni



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**Vidwan Id** : 147333

**Researcher ID (Web of Science)** : AAB-1533-2021

**Google Scholar ID** : <https://scholar.google.com/citations?user=6a5ERZoAAAAJ&hl=en>

**Qualification** : Ph.D

### Professional Experience

Teaching experience : 18

Industry experience : 02 Years 10 months [Served as Senior Research Fellow (SRF) under Department of Science and Technology (DST), Govt. of India Sponsored Project and as a Research Associate (RA) under DRDO, Govt. of India sponsored project]

### Administrative Responsibilities

1. Member, Board of Studies, Dept. of Mech. Engg. From 2020- till date.
2. Mech. Engg. Dept. NBA Co-ordinator, 2022.
3. Mech. Engg. Dept. NBA Co-ordinator, 2019.
4. Academic Council Member of the BEC during the academic year 2017-2018.
5. Co-ordinator of Mechanical Engineering Association (MEA), 2011-2012.

## **Teaching**

### **No. of Projects Guided**

UG : 18

PG : 04

## **Research**

### **Interest Area**

: Materials Science, Manufacturing Technology and Fluid Power Automation

### **No. of Research Scholars**

Pursuing : 2

## **Journals**

- : 1. Anupkumar A Desai, S. Vidyashankar and S. M. Jigajinni, "Understanding Measurement System, Determining and Analysis of the Measurement Variations", International Journal of Research and Analysis in Science and Engineering, Vol. 04(05), 2024, pp 648-659, (ISSN: 2582-8118).
2. Saidabanu Patel, S. J. Sanjay, Shivanand C Yali, S M Jigajinni, "Study of Mechanical Properties of Metal Matrix 212 Microns of Red Mud", International Journal of Engineering Technology and Management Sciences, Vol. 06(05), 2022, pp 210-215, DOI:10.46647/ijetms.2022.v06i05.031 ISSN: 2581-4621.
3. Dipak Nandkumar Bhosale, G. B. Rudrakshi and S. M. Jigajinni, "Behaviour of Al-7075 Reinforced with Fly Ash by using Chill Casting", International Journal of Innovative Research in Science, Engineering and Technology, Vol. 06(06), 2017, pp 11199-11206.
4. Vishnu Pradeep Joshi, G. B. Rudrakshi and S. M. Jigajinni, "Behaviour of Al-7075 Reinforced With Red Mud Using Chill Casting Process", International Journal of Innovative Research in Science, Engineering and Technology, Vol. 06(06), 2017, pp 11031-11035.
5. Vishwanath Banakare, S. M. Jigajinni and G. B. Rudrakshi, "Behaviour of Al 7075 reinforced with SiC using Chill casting", International Journal of Innovative Research in Science, Engineering and Technology, Vol. 06(06), 2017, pp 10217-10224.
6. Raghavendra V. Sugandhi, Akash V. Biradar and S. M. Jigajinni, "Dry Sliding Wear Behaviour of A380/ B4C Composite", International Journal of Innovative Research in Science,

Engineering and Technology, Vol. 05(05), 2016, pp 7821-7826.

7. S. M. Jigajinni, K. Venkateswarlu and S. A. Kori, "Effect of grain refiner cum modifier on mechanical properties of Al-7Si and Al-11Si alloys", *Metals and Materials International.*, Vol. 19 (2), 2013, pp 171-181
8. S. M. Jigajinni, K. Venkateswarlu and S. A. Kori, "Computer aided cooling curve analysis for Al-5Si and Al-11Si alloys", *International Journal of Engineering. Science and Technology.*, Vol. 3 (6), 2011, pp. 257-272.

## Conferences

- : 1. S. M. Jigajinni, K. Venkateswarlu, S. A. Kori, "Influence of Al<sub>3</sub>Ti, AlB<sub>2</sub>, (Al,Ti)B<sub>2</sub> and Al<sub>4</sub>Sr intermetallics on improving the mechanical properties of Al-5Si alloy under normal solidification rates", Fifth International Conference on solidification science and processing, ICSSP-2012, 19-22 November, 2012, IIT Bhubaneswar.
- 2. S. M. Jigajinni, S. A. Kori, "Preparation and characterization of Al-Ti-B-Sr master alloy for the combined effect of grain refinement and modification of 413 alloy", Proce. of 68th World Foundry Congress (WFC) and 56th Indian Foundry Congress (IFC), 12-14 February 2008, Chennai.
- 3. S. M. Jigajinni, S. A. Kori, "A New Combination of Grain Refiner/Modifier for Al-Si Foundry Alloys-A New Approach", Int. Nat. Conf. on Advanced Materials Design and Development (ICAMDD-2005), 14-16 December 2005, Hotel Goa Marriott Resort, Goa (conducted by IIT Kharagpur).
- 4. S. M. Jigajinni, S. A. Kori, "Combined Effect of Grain Refiner cum Modifier on Al-12Si Alloy", Proce. of Inter. Symp. on Advanced Materials and Processing (ISAMP-2007), 29-30 October 2007, Basaveshwar Engineering College, Bagalkot, pp 227-228.
- 5. S. M. Jigajinni, S. A. Kori, K. Venkateswarlu, "Thermal analysis of LM-20 alloy", 62nd Indian Foundry Congress, 7-9 Feb. 2014, Gandhinagar, Gujarat, pp 1-16.
- 6. S. M. Jigajinni, V. S. Jigajinni, "Combined effect of electrical signal and accumulator in hydraulic cylinder", 40th Nat. Conf. on Fluid mechanics and fluid power (FMFP-2013), 12-14 Dec. 2013, National Institute of Technology, Hamirpur, Himachal Pradesh,

pp1-4.

7. S. M. Jigajinni, K. Venkateswarlu, S. A. Kori, "Development of new combination of grain refiner cum modifier for LM-21 alloy", Proce. of 61st Indian Foundry Congress (IFC), 27-29 January 2013, Kolkata, pp 1-7.
8. S. M. Jigajinni, "Effect of self locking using electrical signal in hydraulics", All India Seminar on Recent Trends in Industrial Hydraulics and Lubrication Practice, 05-06 Oct. 2012, IEL, National Institute of Technology, Rourkela, Orissa.
9. S. M. Jigajinni, K. Venkateswarlu, S. A. Kori, "Development of a new master alloy for LM-21 alloy", 49th National Metallurgist's Day [NMD] and 65th Annual Technical Meeting [ATM], 13-16 Nov., 2011, Hyderabad.
10. S. M. Jigajinni, S. A. Kori, "Influence of B-rich and Sr containing Al-Ti-B-Sr master alloy for the simultaneous grain refinement and modification of Al-7Si alloy", Proce. of Nat. Conf. for Research Scholars (NCRS-2007), 12-13 March 2007, Basaveshwar Engineering College, Bagalkot, pp 111-113.
11. S. M. Jigajinni, S. A. Kori, "Characterization of New Combination of Grain Refiner and Modifier for Al-7Si alloy", Proce. Of Nat. Conf. on Advances in Materials Science (AMS-2007), 27-28 January 2007, Gulburga University, Gulburga, pp79.
12. S. M. Jigajinni, S. A. Kori, "A New Combination of Grain Refiner/Modifier for Al-Si Alloys", Proce. of third Nat. Conf. on Mechanical engineering (NATCON.ME-2006), 26-27 May 2006, SIT-Tumkur, pp 104.
13. S.M. Jigajinni, S. A. Kori, V. Auradi, "Effect of Al-Ti-Sr Master Alloy for the Combined Grain Refinement and Modification of Al-7Si Alloy", Proce. of 54th Indian Foundry Congress (IFC), 20-22 January 2006, Pune, pp 1-4 .
14. S. M. Jigajinni, S. A. Kori, "A New Combination of Grain Refiner/Modifier for Al-Si Foundry Alloys", Proce. of 43rd National Metallurgist's Day (NMD) and 59th Annual Technical Meeting (ATM), 14-16 November 2005, IIT Madras, Chennai, pp104.

## Invited Talks

- : 1. *“Mechanical property Enhancement of Al-Si alloys through Metal Matrix Composites”*, *Workshop on Novel Materials: Advances and Applications in Composite Materials Technologies* at KLS-Gogte Institute of Technology, Belagavi, Karnataka 26.03.2025.
2. *“Hydraulics and Pneumatics”*, at *Visvesvaraya Technology University, Bosch Rexroth Centre of Competence in Automation Technology*, VTU, Mysore, Karnataka from 21.10.2019 to 23.10.2019.
3. *“Hydraulics and Pneumatics”*, at *Visvesvaraya Technology University, Bosch Rexroth Centre of Competence in Automation Technology*, VTU, Mysore, Karnataka from 03.10.2016 to 05.10.2016.
4. *“Introduction to Hydraulics and Pneumatics”*, at *HKES Bosch Rexroth Centre of Competence for Automation Technologies*, PDA College of Engineering, Gulbarga, Karnataka from 01.07.2015 to 02.07.2015.
5. *“Synthesis and Characterization of In-situ Al-TiBSr Metal Matrix Composites”* for VTU-VGST *Faculty Development Programme on “Recent Advances in Composite Materials”* at Basavakalyan Engineering College, Basavakalyan, Karnataka on 12.05.2014.

## Events Organized

- : 1. Co-ordinator, **Three Days Student Workshop on** “Mastering Labview: Applications and Insights” organized at the Basaveshwar Engineering College, Bagalkot from 13-15 Feb. 2025.
2. Co-ordinator for the **short term** (Three days/one week) **and long term** (Two months industrial internship) **training programmes** for Under Graduate and Post Graduate students of Basaveshwar Engineering College, Bagalkot and various other colleges across Karnataka, Telangana and Andhra Pradesh under certification of **BEC-BOSCH Rexroth Regional Centre of Competence for Automation Technologies**, Basaveshwar Engineering College, Bagalkot since 2011.
3. Co-ordinator for **Naval Research Board (NRB), Directorate of Naval R and D (DNRD), Ministry of Defence**, New Delhi sponsored one day workshop on “SPD techniques with emphasis on Repetitive Corrugation and Straightening (RCS)”, organized at

the Basaveshwar Engineering College, Bagalkot on 03.09.2016 for faculty members of various colleges.

4. **Chief-Coordinator** of **TEQIP-II** of World Bank assistance **Faculty Development Programme (FDP)** organized at the Basaveshwar Engineering College, Bagalkot from 23-27 June 2014 on “Advances in Materials Science and its Applications”.
5. Chief-Coordinator of **TEQIP-II** of World Bank assistance **Student Development Programme (SDP)** organized at the Basaveshwar Engineering College, Bagalkot from 04-05 February 2013 on “Fluid Power” for Post Graduate students of BEC, Bagalkot.

**Symposiums/  
Workshops/Training  
Programs Attended**

**: Swayam-NPTEL Courses**

Sl. No.	FDP Title	Institute	Equivalence of NPTEL course with regular FDP	To
1.	NBA-Accreditation and Teaching-Learning in Engineering (NATE)  (Completed a 12-week course with a consolidated score of 88%, <b>placing in the top 2% band</b> )	IISc Bangalore	1½ FDP	Jan.-Apr. 2024
2.	Effective Engineering Teaching in Practice  (Completed a 4-week course with a consolidated score of 84%)	IIT Madras	½ FDP of One week	Jan.-Feb. 2024
3.	Introduction to Professional Scientific Communication  (Completed a 4-week course with a consolidated	IIT Kanpur	½ FDP of One week	Jan.-Feb. 2024

	score of 78%)			
4.	Automation in Manufacturing  (Completed a 12-week course with a consolidated score of 92%, <b>placing in the top 2% band</b> )	IIT Guwahati	1½ FDP	July-Oct. 2023
5.	Outcome Based Pedagogic Principles for Effective Teaching  (Completed a 4-week course with a consolidated score of 93%, <b>placing in the top 1% band</b> )	IIT Kharagpur	½ FDP of One week	Feb.-March 2023
6.	Designing Learner Centric MOOCs  (Completed a 4-week course with a consolidated score of 90%)	IIT Bombay	½ FDP of One week	Jan.-Feb. 2023
7.	Teaching and Learning in Engineering (TALE)  (Completed a 4-week course with a consolidated score of 86%)	IISc Bangalore	½ FDP of One week	Jan.-Feb. 2023
8.	Accreditation and Outcome Based Learning  (Completed an 8-week course with a consolidated score of 91%, <b>placing in the</b>	IIT Kharagpur	Full FDP of one week	Aug.-Oct. 2022

	<b>top 5% band)</b>			
9.	Product Design and Development  (Completed a 4-week course with a consolidated score of 85%)	IIT Roorkee	½ FDP of One week	July-Aug. 2021
10.	Climate Change: A Guide for Teachers of all Technical Disciplines <b>(Swayam, AICTE)</b>  (Completed a 16-week course with a consolidated score of 60.5%)	Indian Institute of Science Education and Research (IISER), Pune	Full FDP of two weeks	01 Sept. 2019-09 Feb. 2020
11.	Principles of Metal Forming Technology  (Completed a 8-week course with a consolidated score of 83%)	IIT Roorkee	Full FDP of one week	July-Sept. 2019

**Other FDP Courses**

<i>Sl. No.</i>	<i>Course Title</i>	<i>Institute</i>	<i>No. of weeks</i>	<i>Duration</i>
1.	Digital Transformation in Teaching Learning Process <b>(TEQIP Online Certification Course)</b>	Indian Institute of Technology, Bombay, Mumbai	Two Weeks	14 Feb.-06 Mar. 2020
2.	NPTEL Workshop (Conducted by IIT Madras, Chennai)	BEC, Bagalkot	01 Day	29 Nov. 2019
3.	Systems Thinking and Applications by <b>Prof. L. S Ganesh, Dept. of Mgt. Studies, IIT Madras, Chennai</b>	BEC, Bagalkot	Six Weeks	12. Oct.-30 Nov. 2018



4.	Advances in Micromanufacturing	College of Engineering Pune	Two weeks	01-12 June 2015
5.	Advanced Scientific Tools for Materials Science and Technology	S. V. National Institute of Technology, Surat	03 Days	29-31 May 2015
6.	Metal Forming	S. V. National Institute of Technology, Surat	One Week	22-26 Dec. 2014
7.	Advances in Materials Science and its Applications	BEC, Bagalkot	One Week	23-27 June 2014
8.	Integrated Six Sigma-Green Belt and Design for Six Sigma (DFSS)	BEC, Bagalkot	Two weeks	20-30 January 2014
9.	Capacity Building Towards Quality Teaching and Learning	C.C.E., Indian Institute of Science, Bangalore	Two Weeks	25 Nov.-6 Dec. 2013 and 8 Jan.-10 Jan. 2014
10.	Sensors and Robotics	Acharya Institute of Technology, Bangalore	Two weeks	18 July-1 Aug. 2011
11.	The World Today and Tomorrow-The Energy Challenge	Siddaganga Institute of Technology, Tumkur	Two weeks	20 June-2 July 2011
12.	Mission 10X workshop	BEC, Bagalkot	One week	2.-6 Aug. 2010
13.	Industrial Automation Technology	VTU-Bosch Rexroth (BR) Centre of Competence in Automation Technology, Mysore	Four weeks	1-27 March 2010
14.	Hydraulics and Pneumatics	Bosch Rexroth Centre of Competence in Automation Technology, Mysore &	One Week	24-28 Feb. 2009

		National Institute of Technology, Mysore		
15.	Materials Development, Manufacturing and Characterization	BEC, Bagalkot	One Week	16-21 Apr. 2007
16.	Tribology Past, Present and Future	BEC, Bagalkot	One Week	02-07 Apr. 2007

## Awards and Honors

1. **Certificate of Appreciation** for being recognized as NPTEL ENTHUSIAST, **July-Dec. 2024** (Completed 09 NPTEL courses over the last 4 semesters and topping 4 of these courses).
2. **Letter of Acknowledgement** from **IIT Gandhinagar** for the support in coordinating the research study on the "Effectiveness of the Augmented Educational Podcast" Project, through a one-day workshop on **05 Sept. 2024**. A total of 14 students from BEC, Bagalkot, have received certificates from IIT Gandhinagar. This includes 7 students from Mechanical Engineering, 5 from Electronics and Communication, and 1 each from Computer Science and Civil Engineering.
3. **Certificate of Appreciation** for being a Session Chair at an International Conference on “Sustainable Solutions in Engineering and Technology” at Basaveshwar Engineering College, Bagalkot, **30 Aug. 2024**.
4. **Certificate of Appreciation** for being recognized as NPTEL MOTIVATED LEARNER, **Jan-April 2024** (Completed 09 NPTEL courses over the last 4 semesters and topping 4 of these courses).
5. **Letter of Appreciation** from **IIT Bombay** for being Discussion Forum Moderator of the course "Designing Learner Centric MOOCs (LCM)" from **January-March 2024**.
6. Achieved **top 2%** position in the 12-week NPTEL course on “NBA-Accreditation and Teaching-Learning in Engineering (NATE)”, with a consolidated score of 88%, **Jan-April 2024**.
7. Achieved **top 2%** status in the 12-week NPTEL course on “Automation in Manufacturing”, with a consolidated score of 92%, **July-Oct. 2023**.

8. Achieved **top 1%** status in the 4-week NPTEL course on “Outcome Based Pedagogic Principles for Effective Teaching” with a consolidated score of 93%, **Feb.-March 2023**.
9. Certificate of Appreciation for being recognized as NPTEL BELIEVER, **Jan-April 2023** (completed 4 courses in 1 semester with an average score of 81%).
10. Achieved **top 5%** status in the 8-week NPTEL course on “Accreditation and Outcome Based Learning” with a consolidated score of 91%, **Aug.-Oct. 2022**.
11. Supervised a BE final year project titled “Design and Fabrication of a Plastic Crushing Unit”, sponsored by the Karnataka State Council for Science and Technology (**KSCST**), IISc Campus, Bangalore during the **2022-23** academic year.
12. Supervised a BE final year project titled “Study of Repetitive Corrugation and Straightening on hypoeutectic Al-2Si and Al-7Si Alloys and its Characterization”, sponsored by Visvesvaraya technological University (**VTU**), Belagavi, during the **2021-22** academic year.
13. Supervised a BE final year project titled “Study on Effect of Support Structure on Metal Additive Manufacture Part Quality”, sponsored by the Karnataka State Council for Science and Technology (**KSCST**), IISc Campus, Bangalore during the **2020-21** academic year.
14. Supervised a BE final year project titled “Design and Fabrication of Hydro-Pneumatic Lift”, sponsored by the Karnataka State Council for Science and Technology (**KSCST**), IISc Campus, Bangalore during the **2014-15** academic year.