

## Curriculum vitae

**Name****SHITANSHU SHEKHAR CHAKRABORTY****Contact Address**

Centre for Advanced Materials Processing  
CSIR-Central Mechanical Engineering Research Institute  
Durgapur - 721309, India

**Phone:** 09474675321

**Email:** [situspeaks@gmail.com](mailto:situspeaks@gmail.com)/[ss.chakraborty@cmeri.res.in](mailto:ss.chakraborty@cmeri.res.in)



*Shitanshu Shekhar Chakraborty*

### **SUMMARY OF QUALIFICATIONS, SKILLS AND EXPERIENCES**

- Working as a Scientist at CSIR-Central Mechanical Engineering Research Institute (CSIR - CMERI) since 31/10/2016; appointed as an Assistant Professor at Academy of Scientific and Innovative Research (An Institute of National Importance by an Act of Parliament) 04/01/2019
- Research interest includes Laser Materials Processing, Modelling of Thermo-mechanical problems and Friction Stir Welding. Have been working on research projects in these areas funded by Science and Engineering Research Board and Council of Scientific and Industrial Research.
- Have co-authored several journal and conference papers and a book chapter on Laser Materials Processing. Presented invited lectures on the same topic on different occasions at venues like IIT Kharagpur and IIT Guwahati.
- Life member of 'Indian Laser Association' and 'The Institution of Engineers (India)' and Reviewer of International Journal of Machine Tools and Manufacture, Journal of Manufacturing Processes, Journal of Laser Applications, International Journal of Materials Research and Sadhana
- Taught 'Primary Manufacturing Processes', 'CAD/CAM', 'Non-traditional Machining Processes' and 'Machine Tools and Machining' to undergraduate (UG) students of Mechanical Engineering prior to join CSIR - CMERI.
- Completed Ph.D. and M.Tech. from Indian Institute of Technology Kharagpur, in 2015 and 2010 respectively, in the field of Manufacturing Science and Engineering.

### **PROJECTS COMPLETED**

Project title: Design and development of a versatile welding fixture for manufacturing of prototypes  
Cost: 6 lakhs INR  
Funding agency: Council of Scientific and Industrial Research  
Role: Project Leader/ Principal Investigator  
Duration: 01/12/2016 to 31/03/2018  
Output: Filed one Indian patent application on the welding fixture developed

### **PROJECTS ONGOING**

Project title: Laser forming of aluminium foam plate to produce curved surfaces  
Cost: 36.17 lakhs INR  
Funding agency: Science and Engineering Research Board (SERB) under Early Career Research Award (ECRA) scheme  
Role: Project Leader/ Principal Investigator  
Duration: 08/10/2018 to 07/10/2021

Project title: Optimization of Friction Stir Welding process parameters for butt joining of 2024 Aluminum alloy plates and butt joining of Aluminum with Steel sheets  
 Cost: 50 lakhs INR  
 Funding agency: Council of Scientific and Industrial Research  
 Role: Co-Project Leader/ Co-Principal Investigator  
 Duration: 01/04/2018 to 31/10/2019

## PUBLICATIONS

### Papers published in SCI journals

1. **Shitanshu Shekhar Chakraborty**, Vikranth Racherla, Ashish Kumar Nath\*, "Thermo-mechanical finite element study on deformation mechanics during radial scan line laser forming of a bowl shaped surface out of a thin sheet", *Journal of Manufacturing Processes*, Vol. 31, pp. 593–604, (2018).
2. **Shitanshu Shekhar Chakraborty**, Harshit More, Ashish Kumar Nath\*, "Laser forming of a bowl shaped surface with a stationary laser beam", *Optics and Lasers in Engineering*, Vol. 76, pp. 126–136, (2016). (No. of citations (Google Scholar): 15)
3. **Shitanshu Shekhar Chakraborty**, Harshit More, Vikranth Racherla, Ashish Kumar Nath\*, "Modification of bent angle of mechanically formed stainless steel sheets by laser forming", *Journal of Materials Processing Technology*, Vol. 222, pp. 128–141, (2015). (No. of citations (Google Scholar): 15)
4. **Shitanshu S. Chakraborty**, Kuntal Maji, Vikranth Racherla, Ashish Kumar Nath\*, "Investigation on laser forming of stainless steel sheets under coupling mechanism", *Optics & Laser Technology*, Vol. 71, pp. 29–44, (2015). (No. of citations (Google Scholar): 17)
5. **Shitanshu Shekhar Chakraborty**, Vikranth Racherla, Ashish Kumar Nath\*, "Parametric study on bending and thickening in laser forming of a bowl shaped surface", *Optics and Lasers in Engineering*, Vol. 50, pp. 1548–1558, (2012). (No. of citations (Google Scholar): 42)
6. Sagar Sarkar, Muvvala Gopinath, **Shitanshu Shekhar Chakraborty**, Badirujjaman Syed, Ashish K. Nath\*, "Analysis of temperature and surface hardening of low carbon thin steel sheets using Yb-fiber laser", *Surface & Coatings Technology*, Vol. 302, pp. 344–358, (2016). (No. of citations (Google Scholar): 10)

### Book chapter published

Nath, Ashish K., Sagar Sarkar, Gopinath Muvvala, Debapriya Patra Karmakar, **Shitanshu S. Chakraborty**, Suhradip Mullick, and Yuvraj K. Madhukar. "15 Chapter LASER-Based Manufacturing as a Green Manufacturing Process." *Sustainable Material Forming and Joining* (2019): 303, CRC Press.

### Edited book

Dutta, S. and Chakraborty, SS. eds. *Proceedings of National Conference on Advanced Materials, Manufacturing and Metrology*. ISBN: 978-93-87480-56-8, 2018.

## THESIS SUPERVISED

M. Tech. thesis: 02 numbers (ongoing)

## INVITED AS A SPEAKER

- 2nd International Conference on Computational Methods in Manufacturing (ICMM 2019), IIT Guwahati, March 8-9, 2019.
- AICTE-QIP Short Term Course on "Advanced Laser Material Processing & Additive Manufacturing", IIT Kharagpur, December 17-21, 2018.
- Indian Laser Association organized Short Term Course on "Recent Advances in Laser Material Processing", National Laser Symposium 25, KIIT Bhubaneswar, December 18-19, 2016

### SCHOLARSHIPS RECEIVED

Institute Scholarship (provided by Ministry of Human Resource Development) from Indian Institute of Technology Kharagpur during M.Tech. and Ph.D.

### NOTABLE PERFORMANCE IN COMPETITIVE EXAMINATION

Obtained all India rank 388 with a percentile score of 97.86 in 'Mechanical Engineering' paper in Graduate Aptitude Test in Engineering held in 2008.

### EDUCATIONAL QUALIFICATIONS

#### Doctor of Philosophy

Date of completion: 23<sup>rd</sup> November, 2015

Thesis title: "Experimental and numerical analyses of bent angle modification and three dimensional surface generation by laser forming"

Supervisors: Prof. Ashish Kumar Nath and Prof. Vikranth Racherla

Mechanical Engineering Department, Indian Institute of Technology Kharagpur

#### Master of Technology

Year of passing: 2010

Specialization: Manufacturing Science and Engineering

Cumulative grade point average: 9.58 (on a 10-point scale)

Project title: "A study towards making a 3D surface by LASER forming"

Mechanical Engineering Department, Indian Institute of Technology Kharagpur

#### Bachelor of Technology

Year of passing: 2008

Specialization: Mechanical Engineering

Degree grade point average: 8.42 (on a 10-point scale)

Institute: Jalpaiguri Government Engineering College

University: West Bengal University of Technology

#### Higher Secondary (12<sup>th</sup> class)

Year of passing: 2004

Percentage of marks: 85.7

Board / Council: West Bengal Council of Higher Secondary Education

#### Secondary (10<sup>th</sup> Class)

Year of passing: 2002

Percentage of marks: 86

Board: West Bengal Board of Secondary Education

### ORGANIZED CONFERENCE/TRAINING PROGRAMME

1. Played the role of Treasurer of National Conference on Advanced Materials, Manufacturing and Metrology (NCAMMM) - 2018; CSIR-CMERI, Durgapur – 713209 (India); February 16-17, 2018.
2. Played the role of a joint programme coordinator of Workshop–cum–Training Programme on Advanced Materials Processing & Characterization (WAMPC) - 2017; CSIR-CMERI, Durgapur – 713209 (India); September 7-8, 2017.
3. Played the role of a joint coordinator of National Conference on Advanced Functional Materials Processing and Manufacturing (NCAFMPM) – 2017; CSIR-CMERI, Durgapur – 713209 (India); February 2-3, 2017.