



# ME Seminar



## Research Contribution in Laser Based Manufacturing

Dr. Ramsingh Yadav, COEP Technological University, Pune, India

### ABSTRACT

My presentation will delve into the extensive exploration and in-depth analysis of the laser bending process, with a particular focus on Duplex-2205 stainless steel. The research aims to significantly enhance bend angles achievable through laser bending while investigating the effects of forced cooling on material properties. Through a development of a sophisticated numerical model, and robust experimental setup, the study uncovers crucial insights into mechanisms, process parameters, and optimization opportunities within the laser bending process and the changes in mechanical properties and metallurgical characteristics. Furthermore, the presentation will highlight the potential applications of enhanced laser bending techniques in industries such as microelectronics, aerospace, and marine engineering.

During the seminar, I will provide a detailed overview of this research, including insights into the mechanisms underlying laser bending, experimental methodologies, and optimization strategies. I will also discuss my teaching philosophy and future research directions.

### ABOUT THE SPEAKER

I am Dr. Ramsingh Yadav currently working as an Adjunct Faculty in the Department of Manufacturing Engineering and Industrial Management at COEP Technological University, Pune, Maharashtra, India. I received my bachelor's degree in mechanical engineering from Rajasthan Technical University, Kota (Rajasthan, India). I completed my M. Tech. from Department of Mechanical Engineering at Malaviya National Institute of Technology, Jaipur, India with specialization in "Production Engineering". I worked on the Investigation of mechanical and tribological analysis of injection molded parts during my M. Tech. project. I completed my doctorate from Indian Institute of Technology Ropar, Punjab, India in the field of Laser Based Manufacturing . My Ph.D. thesis was focused on the Investigation on Laser Bending of Duplex -2205 Sheets by Applying Forced Cooling. My research interest is in Laser Based Manufacturing which include Laser forming, Laser, transmission welding, Hybrid Machining and Additive manufacturing. I have contributed 17 research articles in peer-reviewed journals, one book chapter and attended 7 conferences.



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