

## Non-Traditional Machining

Needs for nontraditional machining processes, classification and comparative analysis, Abrasive jet machining: Fundamental principle, application process parameters, MRR models. Water jet machining: Fundamental principle, application process parameters. Chemical machining: Principle of operation, etch ants and mask ants, photochemical process, equipment, applications. Electrochemical machining: Process principle, Analysis of material removal, dynamics of ECM Process, tool design, applications. Ultrasonic machining: Physical principles of USM, Process parameters, Transducers types materials and design, horn design, shaws model of MRP, other applications of Ultrasonic. Electrical discharge machining: Operating principles of EDM, Effects of Dielectric fluids, Electrode materials, power generators, process parameters and their effects, flashing, wire EDM process, applications. Laser Beam Machining: Lasing process, types of lasers (Gas and solid state), lasing mediums, laser material processing-cutting, drilling, surface treatment, special applications.

### Reference Book:

1. Advanced Machining Processes by Hassan Abdel- Gawad E l- Hofy Tata McGraw Hill,
2. V. K. Jain Advanced Machining Processes, Allied Publishers, 2009.
3. Gary F. Benedict, Nontraditional Manufacturing Processes, Taylor & Francis, 1987
4. J. A. Mc Geough, Advanced Methods of Machining, Springer, 1988
5. P K Mishra, Non Conventional Machining, Narosa India publication
6. Hassan El-Hofy, Advanced Machining Processes: Nontraditional and Hybrid Machining Processes, McGraw-Hill Prof Med/Tech, 2005.
7. P. C. Pandey and H. S. Shan, Modern Machining Processes, Tata McGraw-Hill Education, 1980
8. James A. Brown, Modern Manufacturing Processes, Industrial Press, 1991.
9. J. A. Mc Geough, Micromachining of Engineering Materials, Taylor & Francis, 200