

Table of Contents

Preface

Part One: Fundamentals of Materials and Manufacturing	1
--	----------

Chapter 1: Introduction

Chapter 1 Introduction Z. Huda	5
--	----------

Chapter 2: Engineering Materials

Chapter 2 Engineering Materials Z. Huda	15
---	-----------

Chapter 3: Deformation and Annealing of Metals

Chapter 3 Deformation and Annealing of Metals Z. Huda	33
---	-----------

Chapter 4: Basic and Allied Manufacturing Processes

Chapter 4 Basic and Allied Manufacturing Processes Z. Huda	45
Part Two: Conventional Manufacturing Processes	57

Chapter 5: Metal Casting Processes

Chapter 5 Metal Casting Processes Z. Huda	61
---	-----------

Chapter 6: Plastic Molding Processes

Chapter 6 Plastic Molding Processes Z. Huda	83
---	-----------

Chapter 7: Metal Forming Processes

Chapter 7 Metal Forming Processes Z. Huda	99
---	-----------

Chapter 8: Machining Processes

Chapter 8 Machining Processes Z. Huda	131
---	------------

Chapter 9: Welding and Joining Processes

Chapter 9 Welding and Joining Processes Z. Huda	159
---	------------

Chapter 10: Heat Treatment of Metals and Alloys

Chapter 10 Heat Treatment of Metals and Alloys
Z. Huda

179

Chapter 11: Surface Treatment Processes

Chapter 11 Surface Treatment
Z. Huda

201

Chapter 12: Powder Metallurgy

Chapter 12 Powder Metallurgy
M.Y. Anwar

223

Chapter 13: Glass Processing Technology

Chapter 13 Ceramic Processing Technology
Z. Huda

255

Chapter 14: Composite Processing Technology

Chapter 14 Composite Processing Technology
Z. Huda

279

Part Three: Advanced Manufacturing

298

Chapter 15: Advanced/Nontraditional Machining Processes

Chapter 15 Advanced/Nontraditional Manufacturing Processes
Z. Huda

301

Chapter 16: Computer Integrated Manufacturing (CIM)

Chapter 16 Computer Integrated Manufacturing
M. Fahad and Z. Huda

325

Chapter 17: 3D Printing or Additive Manufacturing (AM)

Chapter 17 Additive Manufacturing
M. Fahad

355

Part Four: Economy and Quality in Manufacturing

377

Chapter 18: Economics of Manufacturing

Chapter 18 Economics of Manufacturing
S. Majeed and Z. Huda

381

Chapter 19: Quality Assurance in Manufacturing

