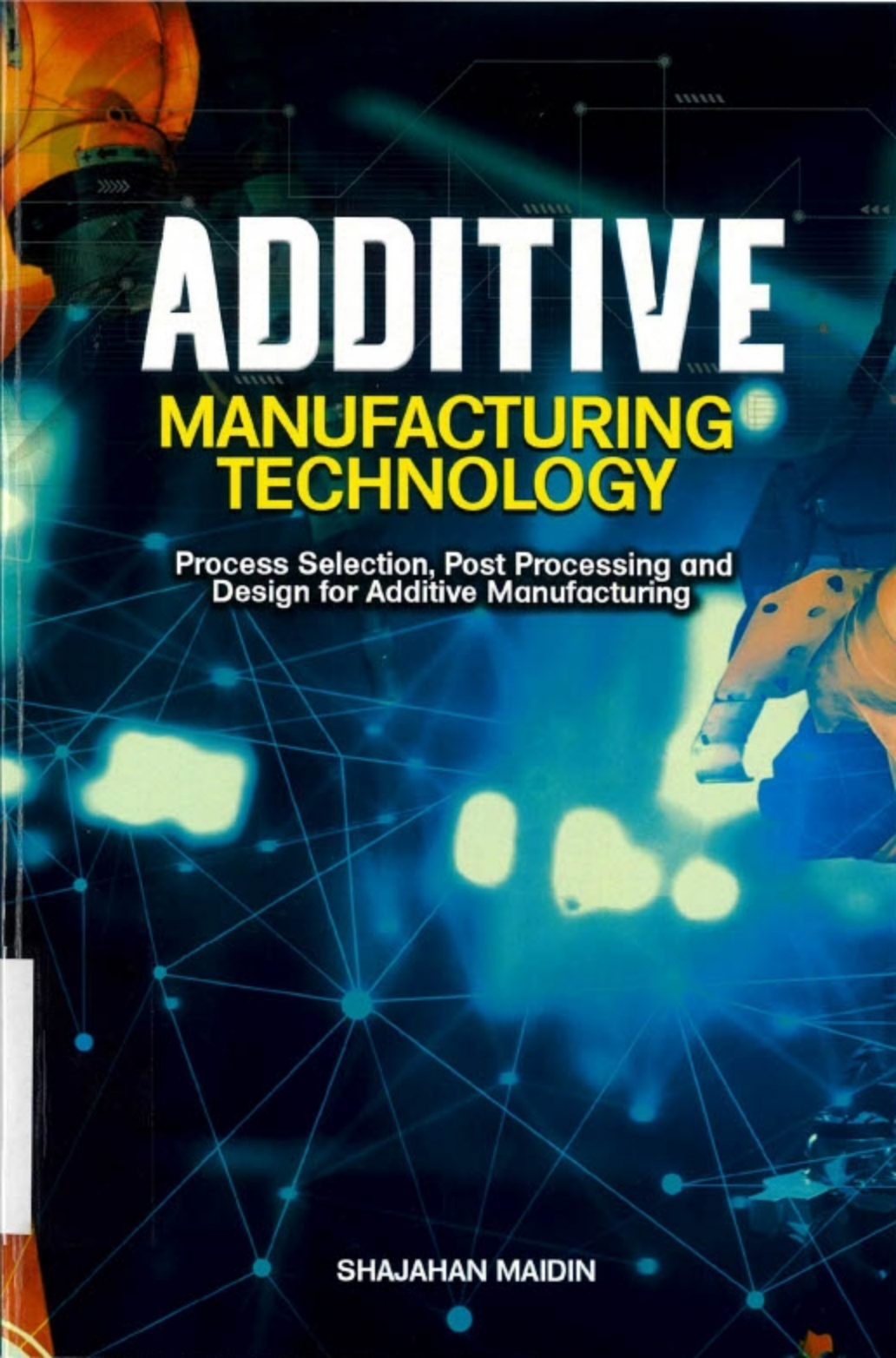




# **ADDITIVE MANUFACTURING TECHNOLOGY**

**Process Selection, Post Processing and  
Design for Additive Manufacturing**

**SHAJAHAN MAIDIN**

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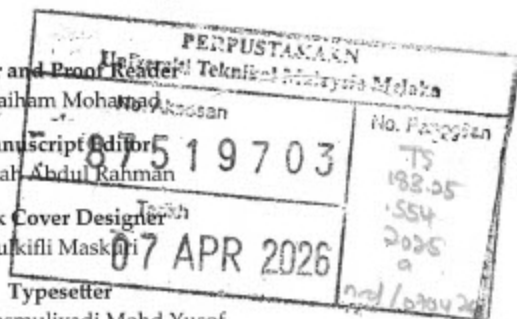
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# ADDITIVE MANUFACTURING TECHNOLOGY

## Process Selection, Post Processing and Design for Additive Manufacturing

Additive manufacturing (AM) has existed for more than 40 years and evolved from rapid prototyping. For more excellent technical capabilities, efficiency, flexibility, and sustainability, AM techniques have been successfully combined with industry 4.0 technology. Over time, the names "rapid prototyping," "rapid manufacturing," and "additive manufacturing" have been used to describe this technique, reflecting its development. "additive manufacturing" refers to a wide range of industries, materials, and methods to turn CAD data into physical things. AM converts a digital model stored in a computer data file into a physical model of an object or product. Over the last two decades, there has been a lot of progress in AM, and numerous scholars have emphasised current advancements. The underlying technology for AM printers has recently become affordable to many people and small businesses. Until recently, however, there has been a limit to what is accessible for novices in a step-by-step fashion that demonstrates the various commercial AM technologies for field application. This book fills up the gaps. Many modern AM technologies are reviewed in Additive Manufacturing Technologies - Processes, Selection, Design, and Post Processing. The entire process chain is illustrated in a practical light, from CAD data generation to printing method, including talks of polymerisation (e.g., stereolithography), sintering and melting (e.g., laser sintering), and layer laminate method (e.g., laminated object manufacturing, LOM), among others. It contains the most up-to-date information on the use of AM to create completed goods, which is becoming increasingly popular directly. The whole manufacturing product cycle includes design for additive manufacturing, different AM techniques, AM process selection, and AM printed component post-processing. The book is written for practitioners and covers the fundamentals of AM for industrial engineers, digital manufacturers, and advanced manufacturers. This book is also an excellent textbook for design, engineering, and technology graduate students, as well as individuals who are intrigued about the potential applications of AM in the near future.



**SHAJAHAN MAIDIN**, is an Associate Professor and who has served 19 years in academics and research at the Faculty of Industrial and Manufacturing Technology and Engineering, Universiti Teknikal Malaysia Melaka (UTeM). He received his BEng (Hons) in Manufacturing System Engineering from the University of Portsmouth, United Kingdom. MSc. in Manufacturing System Engineering from the University of Warwick, United Kingdom. PhD in Manufacturing Engineering from the Loughborough University, United Kingdom. He has published more than 100 technical research papers. He is a certified Chartered Engineer (Institution of Mechanical Engineers, United Kingdom) and a Professional Technologist (Malaysia Board of Technologists) as well as a Professional Engineer (Board of Engineers Malaysia). He is a certified professional for Autodesk AutoCAD. His current research and publication interests include additive manufacturing and sustainable product design and manufacture.



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