

PREFACE

The Reason for Writing this Book

In the world that is currently being exposed to the increasing amount of pollution and loss of available resources for energy generation and utilization sustainable manufacturing (Sustainable Manufacturing) is a concept that can be very helpful to improve the quality of environment and lives of people.

Sustainable Manufacturing involves the use of renewable resources for energy that put less pressure on the environment and in long term may prove to be very cost effective and healthy for the consumers. In this book, I have tried to lay emphasis on the subject of Sustainable Manufacturing and how it can prove to be a milestone in the existence of the human race.

The Subjects Explored by this Book

The book opens up to the readers by introducing the topic of Sustainable Manufacturing to them. The readers are informed about the value that Sustainable Manufacturing can create for them. The opening chapter of the book also focuses on the various processes of manufacturing and the equipment that can be used to bring sustainability to the process. The corresponding passage also talks about the innovative ways to conserve energy.

The book further moves on to upload the various principles and practices that govern Sustainable Manufacturing. The readers are informed about the various models and methods that have been researched upon so as to achieve the goal of Sustainable Manufacturing. The book talks about the state of art facilities and a global analysis of them and the role that they play in the concerned field.

There is a big importance of Nanotechnology in the development of Sustainable Manufacturing, and thus the book discusses about it in the following sections. It introduces the concept of Nanotechnology to the readers and talks about its importance in the future of Electronics.

It also talks about the importance of Nanotechnology in food processing packaging and distribution the ways in which nanotechnology affects the Aerospace materials are also discussed in following sections. There is also consideration of the use of the nanotechnology in construction sector and

medicinal uses. The book further goes on to discuss the challenges that Sustainable Manufacturing can face in the use of Nanotechnology.

The book goes on to dwell upon the challenges and opportunities that the Sustainable Manufacturing faces in different fields like construction medicine electronics et cetera. Moving on there is a discussion about the solution of the challenges mentioned above and the ways in which the processes of Sustainable Manufacturing can be implemented.

The readers are informed about the value that Sustainable Manufacturing can create for them. The consumers the concept of value and sustainable engineering are introduced to the readers.

There is a proper assessment of value creation and the role sustainability play in it also the various patterns that have existed in Sustainable Manufacturing and the share of market they have been able to make has been discussed thoroughly. The various strategies that can come handy in creating value through Sustainable Manufacturing are also discussed with the readers.

There is a very important role that innovation plays in all the major manufacturing processes. In this book, the advances in technology that help Sustainable Manufacturing and promote it are discussed in a proper way.

The use of technology for the development of green manufacturing like use of solar power, laser technology, and other renewable or non-polluting technologies has been focused upon in the concerned sections the areas for development that need priority have also been dwelt upon deeply. The readers are also informed about the impacts that green technology has on their surroundings.

Lastly and most importantly, the future aspects of sustainable development (SD) and manufacturing as discussed in an elaborated manner. It has been envisioned how the world will look in 2050 if it turns itself to Sustainable Manufacturing processes.

The demand of Blue Water by 2050 will increase by many folds and Sustainable Manufacturing can play a vital role in fulfilling this demand. There has also been focus on the greenhouse emissions that can increase to intolerable levels by 2050, and thus the processes of Sustainable Manufacturing prove vital in themselves.