Chapter 14
Transformation and Future Directions of the Integrated Chip (IC) Manufacturing Industry Using Artificial Intelligence Models

G. S. Siva Kumar
Pragati Engineering College, India

Srinivas Akula
Pragati Engineering College, India

Suneetha P.
Pragati Engineering College, India

Vasantha Lakshmi B.
Pragati Engineering College, India

Sailaja V.
Pragati Engineering College, India

Ravi Kumar M.
Pragati Engineering College, India

ABSTRACT

The era of the semi-conductor manufacturing industry is from 1970 to recent times. During these decades, the manufacturing process has achieved its greatest heights. At present, it reached its saturation level in terms of VLSI, ULSI, SOC manufacturing techniques. Recently artificial intelligence models are expanding their domains and applications in all the sectors. In this regard, changes in the hardware modeling also play a crucial role. In this chapter, the authors present artificial intelligence on hardware models, how the IC manufacturing industry is turning its conventional methods to add new features, and future directions at the business level.

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Critic high tech minerals (CHTMs) are unrefined substances that are fundamental for a future clean-energy change and the assembling of very good quality items. Electronic devices, one of the quickest developing electronic items, contain different CHTMs. Starting around 2019, India has outperformed the United States to turn into the second biggest electronic gadget market on the planet. An expanding and disturbing number of unreasonable waste electronic contraptions will be created in India soon. In this review, the powerful material stream investigation approach and the Weibull dissemination are taken on to examine the volumes of collected squander electronic devices and the contained CHTMs in light of the separation among electronic gadgets and component telephones in India. Also, a market supply model is embraced to anticipate the future patterns of CHTMs in squander electronic devices. The outcomes show an overall vertical propensity of waste electronic devices volume in India, which demonstrates that different CHTMs contained in electronic devices waste can be appropriately reused or reused. Future ramifications in light of the investigation results are accommodated proficient electronic devices the executives in India.

INTRODUCTION

Basic cutting-edge minerals (chtms) are ‘’minor” metals on which present day innovation is in total dependent to fill roles. The loads of chtms on earth are restricted, and gaining them from normal virgin metal is troublesome because of specialized and monetary impediments. The accessibility of these chtms is, in this manner, dependent on not just the particular mining creation of their host mineral(s) yet in addition whether the friend minerals are appropriately recuperated instead of disposed of without having been handled Furthermore, requests for materials and metals will increment with innovative turn of events, in light of the fact that the World Bank revealed that ‘’the perfect energy progress will be fundamentally mineral concentrated” Urban mining is a likely option for addressing the difficulties connected with the proceeded with solid interest for chtms and delicate stock of chtms. Metropolitan mining has been effectively used for asset extraction of electrical and electronic items and modern Waste The quick headway of mechanical development has prompted a significant expansion in the interest for chtms The Indian economy has been developing quickly at a yearly pace of 7.1% in the previous ten years, which positions India as an arising world economy In the Indian economy, the electronic business, including creation, inside utilization and product, is one of the quickest developing areas .

India as of late outperformed the United States as the second-biggest electronic gadget market behind China, when it arrived at 158 million shipments in 2019.