

# Technological Innovation in Engineering Research Vol. 8

1. [Home](#)

---

---

2. Books

---

---

3. [Technological Innovation in Engineering Research Vol. 8](#)

---

---

4. Chapters

---

---



# The Design of an Automated Etching System

- [J. O. Olowoleni](#)
- [C. O. A. Awosope](#)
- [A.U. Adoghe](#)
- [A. F. Agbetuyi](#)
- [V. Oguntosin](#)
- [C. A. Halin](#)

*Technological Innovation in Engineering Research Vol. 8, 16 September 2022 , Page 104-112*  
<https://doi.org/10.9734/bpi/tier/v8/16023D> **Published:** 2022-09-16

- [View Article](#)
  - [Cite](#)
  - [Share](#)
- 

## Abstract

The aim of this study is the design of an automated etching system, Etching is a subtractive method used for the production of printed circuit boards (PCBs) where acid is used to remove unwanted copper from a prefabricated laminate. The manual method is limited to a small number of boards and is likely to be inefficient. Aside from that, exposure to some types of etchants may be harmful to one's health. On the other hand, the machines available for this purpose are cleaner and faster, and they can etch multiple boards at once, but they are quite expensive. This frequently discourages small-scale Printed Circuit Board (PCB) producers from purchasing them. However, the automated etching system described here seeks to offer a technique to carry out the etching procedure for a PCB board in a simple, clean, safe, and economical manner. The printed circuit board uses conductive lines, pads, and features etched from copper sheets laminated onto a non-conductive substrate to mechanically support and electrically link electronic components.

## Keywords:

- Etching

- PCB
- arduino
- air pump
- temperature
- humidity sensor