

Project Title:
**Automatic Dispenser for
Border Molding in
Complete Denture
Prosthesis**

Problem Statement

- One of the important step in denture preparation is border moulding.
- Currently this is done manually by using green stick compound by heating it over the flame and adding it incremental along the borders of the custom trays.
- This process is not just time consuming but also this lead to uneven increments and non uniform heating of green stick compound.
- The uneven heating of green stick compound leads to burns in patient mouth as the users are not able to control the temperature.
- This lead to increase in patient chair side time and also inconvenience for the old patients.

Modelling compound

Bunsen Burner



Introduction

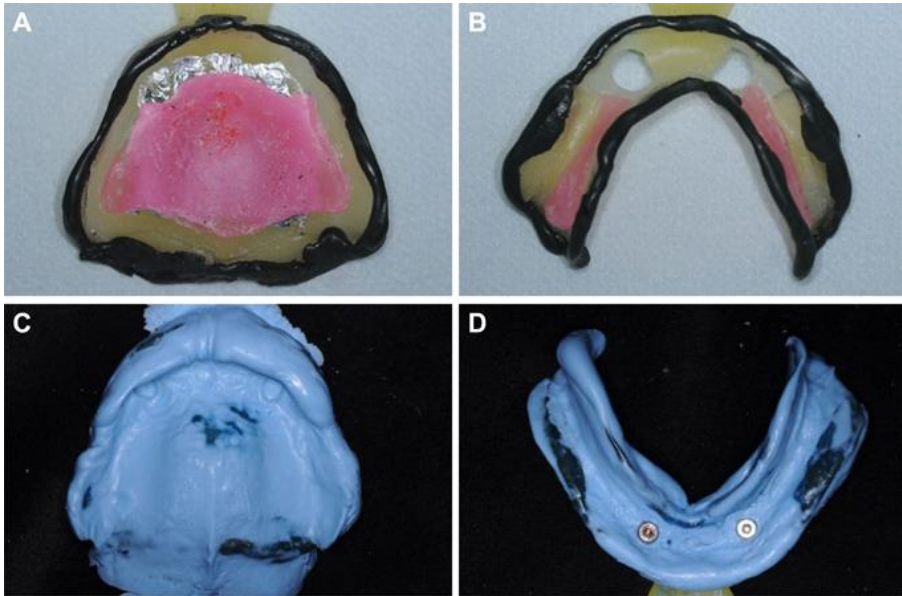
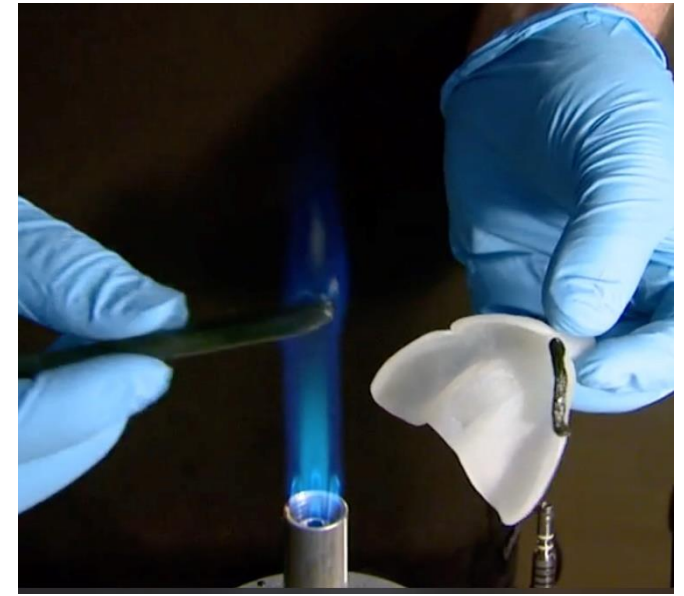
Aim is to Design and Develop the **Automatic Dispenser for Border Molding in Complete Denture Prosthesis** focusing on **ergonomics**, **functionality** and **safety**

Features:

- ♦ Portable Device and shock proof
- ♦ Operating voltage 12VDC 3 A
- ♦ Adjustable temperature range 30⁰ C ~ 150⁰ C
- ♦ Front Panel Temp. Adj. Switch & 7 Seg LED Display

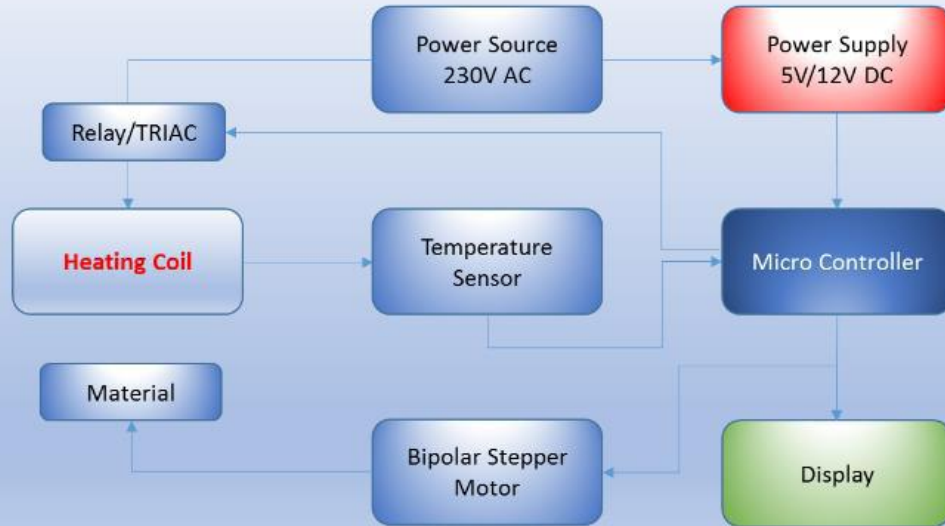
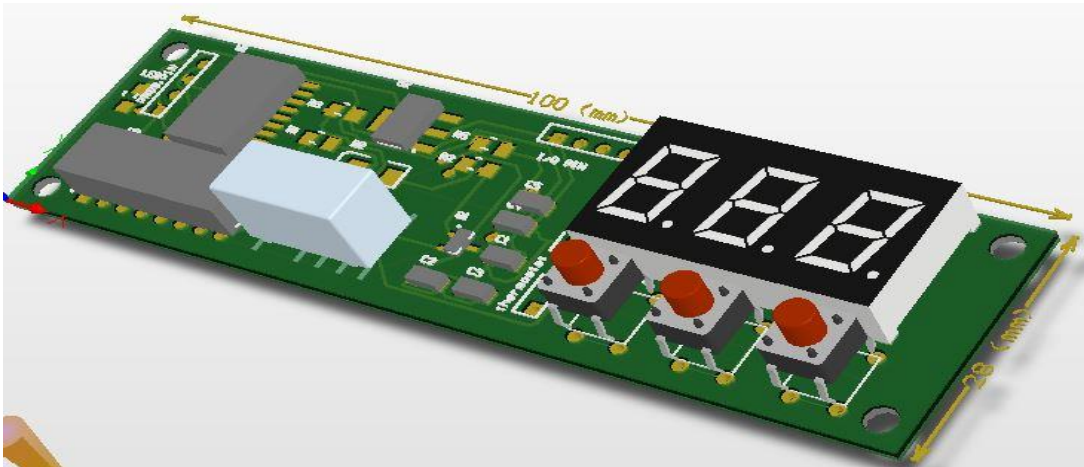
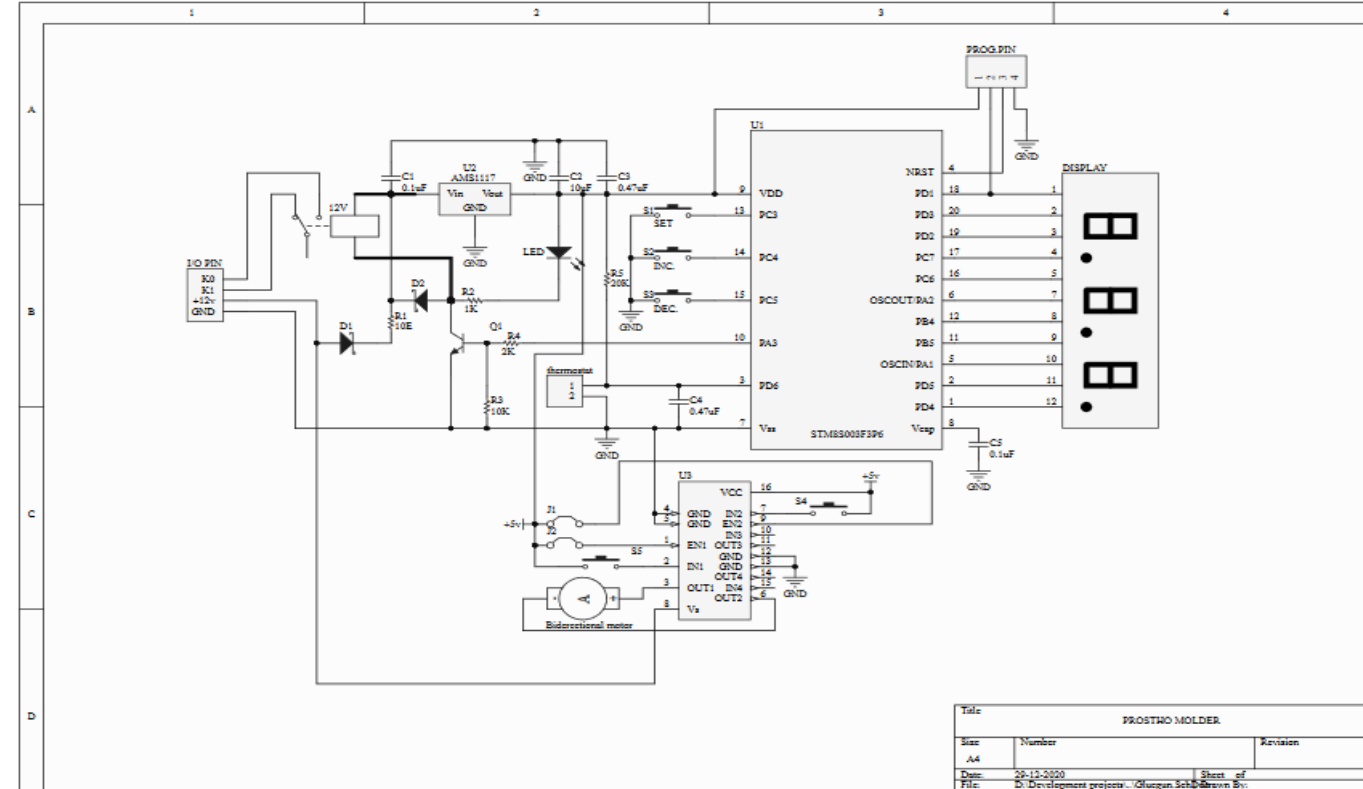


Dentures Border Molding



Electronics Circuits

Block Diagram



Different Views

Front View



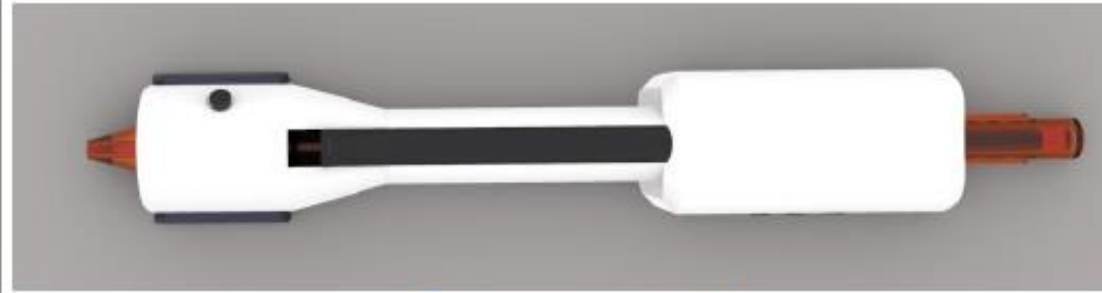
Back View



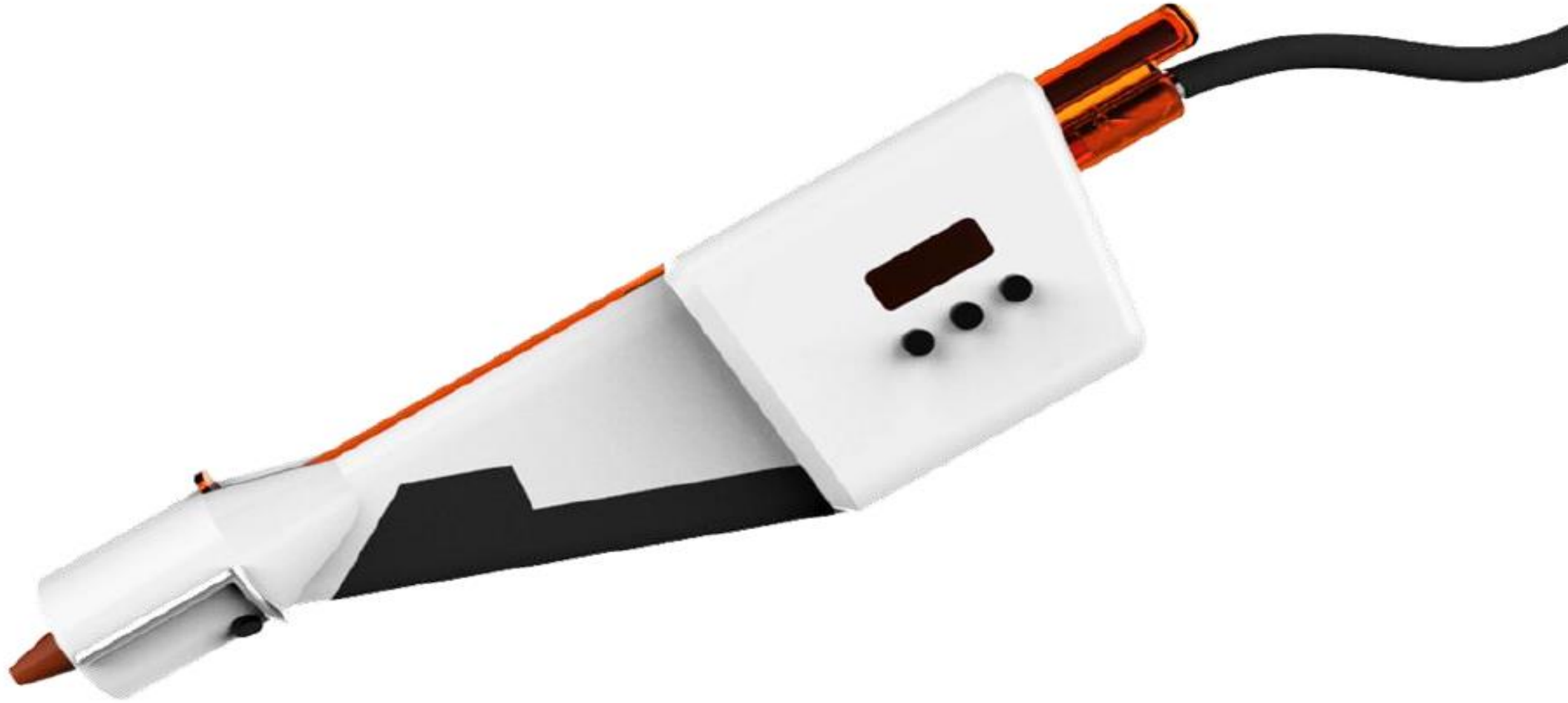
Side View



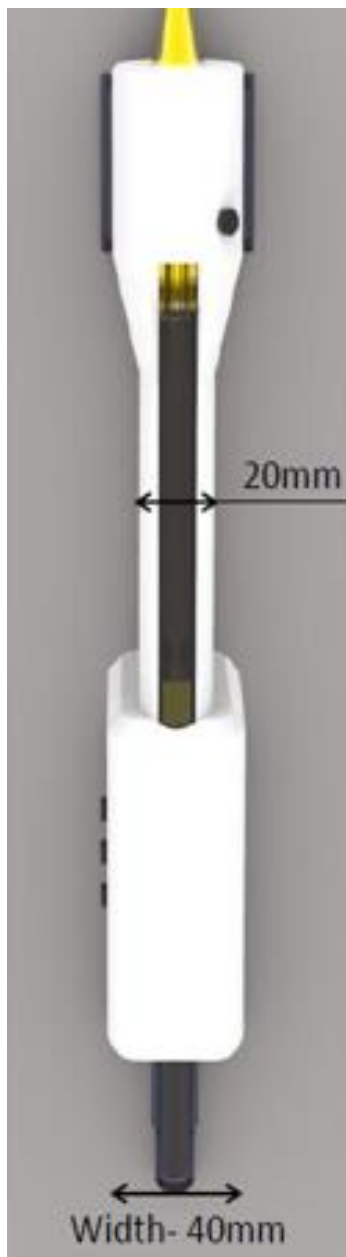
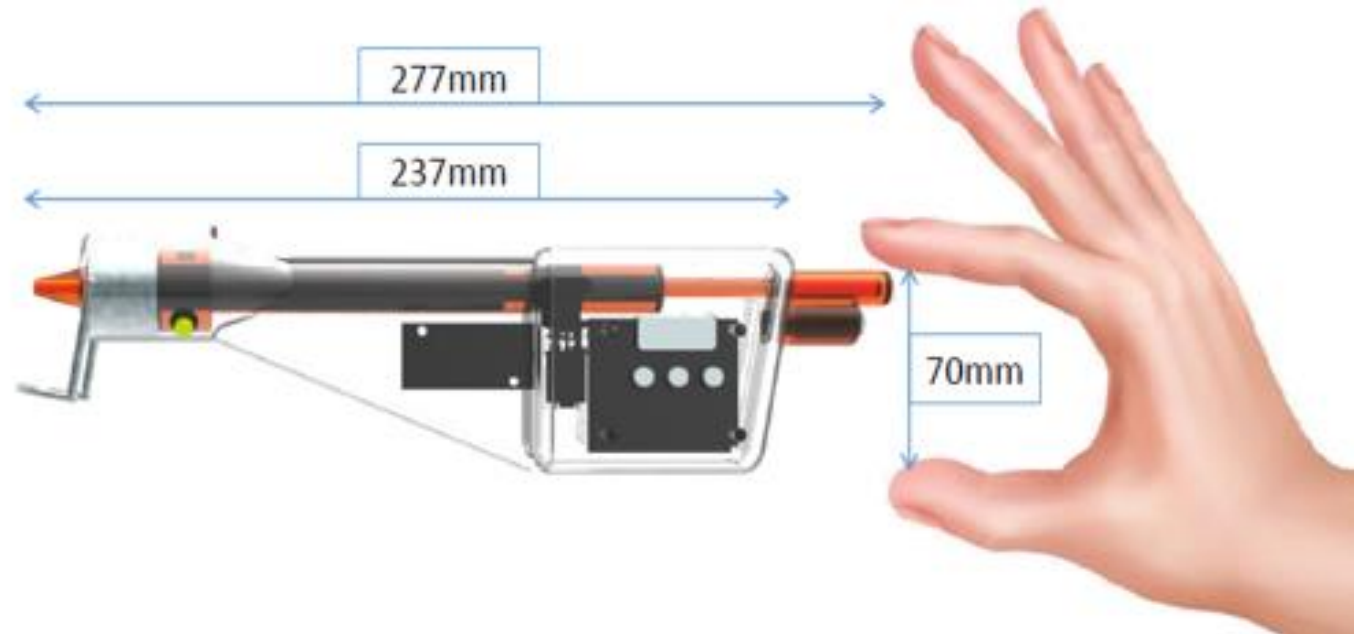
Top View



Final Design



Dimensions



Specifications

Dimension	:	277mm L x 40 mm W x 70 mm H
Input Voltage	:	AC- DC Adopter 240/110V AC, 50/60 Hz to 12VDC
Operating Voltage	:	12V DC max.
Operating Current	:	3 Amps max.
Temperature range	:	30 ⁰ C ~ 150 ⁰ C , Resolution 0.1 ⁰ C
Temp. Sensor Type	:	Thermistor NTC (10K 0.5%)
Output Relay	:	20 Amps
Heater Cartridge	:	12V DC, 40 W, Dimension 6mm x 20 mm
Display	:	7 segment LED
Motor Type	:	Type N20 - 12mm - 12 VDC – 300 rpm, Torque: 0.05 Nm
Micro Controller	:	8 Bit MCU 8051
Max. Stroke Speed	:	110 mm, 12mm/sec

Thank You!!