

The following Research equipment were set up in order to enhance the knowledge and skill set of students.

1. FORMLABS FORM 3B+ 3D PRINTER

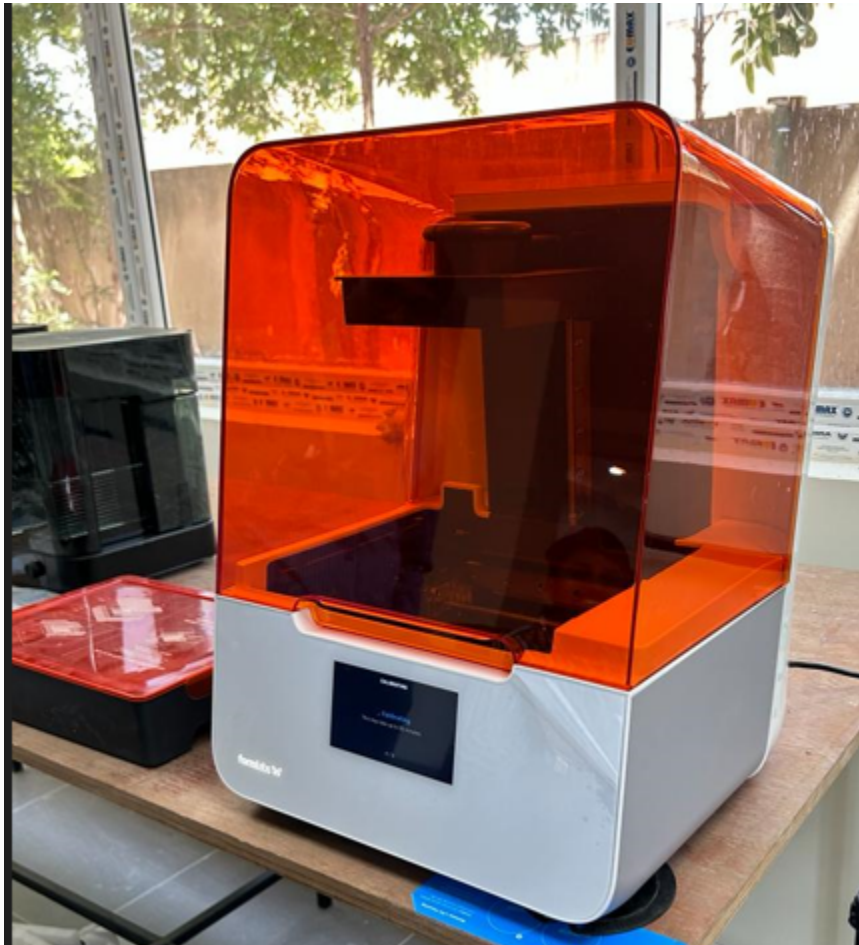


Fig.1 Form 3B+ An Advanced Desktop 3D Printer Designed for Healthcare

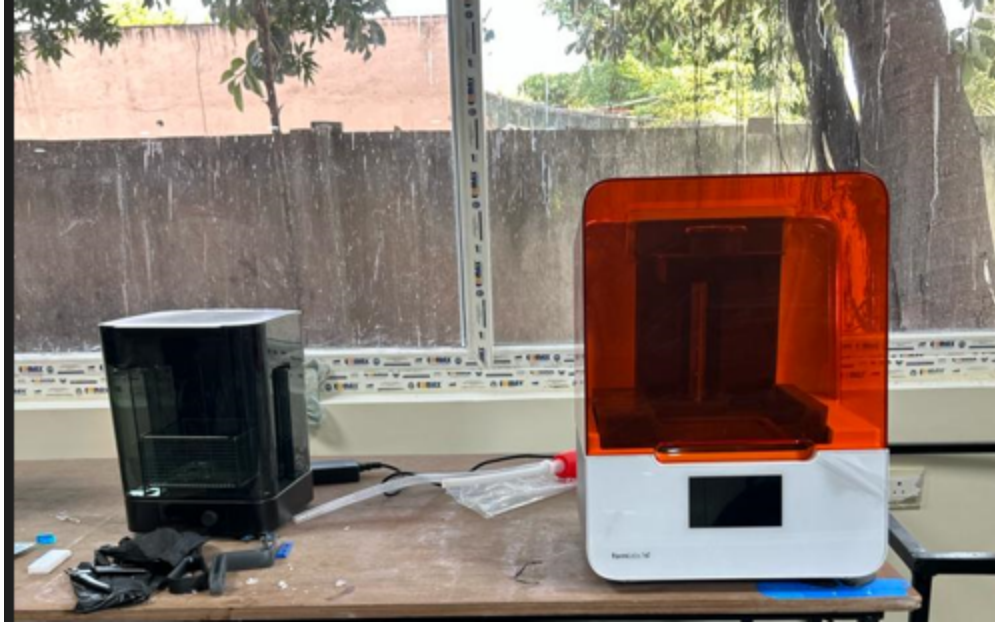


Fig. 2 Form 3B+ An Advanced Desktop 3D Printer Designed for Healthcare

Fig 1 & 2 shows rapidly print patient-specific parts at the point of care and bring innovative R&D and commercial production in-house with the Form 3B+, an advanced 3D printer for healthcare professionals and medical device engineers. The Form 3B+ is compatible with our entire SLA materials library, including biocompatible, sterilizable materials. Seamlessly integrate the Form 3B+ into your existing clinical workflows. With automatic resin dispensing, simple print preparation software, and intuitive accessories like Build Platform 2 with patented Quick Release Technology, the Form 3B+ is designed for efficiency. The Form 3B+ resolves fine details down to the micron level, critical for printing surgical tools and intricate medical devices, while the smooth surface finish and high accuracy of the Form 3B+ ensure medical devices meet production standards. Access a library of 40+ materials compatible with the Form 3B+. Our technology has been validated in multiple FDA-cleared workflows and we develop and manufacture our own biocompatible materials in an ISO 13485 certified, FDA-registered facility. Parts can be sterilized using steam, e-beam, gamma, or EtO. Formlabs Open Platform empowers healthcare professionals to drive groundbreaking advancements. Customizable print settings and the ability to print with any 405nm photopolymer resin on Form 3B+ allow users to unleash unlimited possibilities for medical R&D.

2. Bambu lab X1 3D Printer



Fig. 3 Bambu lab X1- Carbon 3D Printer

Fig 3 shows Bambu Lab printers can use snap-away support material or dissolvable filament to minimize the pain of removing supports. The print never stops with automatic spool changing. With AMS filament backup function, never worry about running out of filament during your sleep or absence, ensuring a seamless and uninterrupted printing process, preventing any filament waste and promoting energy efficiency. Powered by a 32-bit MCU, sensor arrays, actuators, and a smart algorithm, the AMS has reached unprecedented levels of intelligence. It expertly manages filament loading and unloading, along with efficient fault detection and recovery. When the filament at the toolhead encounters resistance, it may be that the filament is tangled or the spool is stuck, AMS can detect it immediately and suspend printing to avoid air printing. Bambu Lab AMS is composed of 4 filament slots, and up to 4 AMS can be installed in parallel and supports up to 16 colors for stunning prints that truly stand out.

Supported Filament in the above printer: PLA, PETG, ABS, ASA, PET, PA, PC, PVA (dry), BVOH (dry), PP, POM, HIPS and Bambu PLA-CF/ PAHT-CF/ PETG-CF