

ABSTRACT

A sediment core scanner is a device used in geological and environmental research to analyze sediment characteristics non-destructively. However, existing sediment scanners are generally large, expensive, and difficult to operate in remote locations, such as maritime areas or regions with limited infrastructure. Therefore, this study aims to design and develop a portable, functional, and easy-to-use sediment core scanner. The research employs a mixed-methods approach, combining quantitative and qualitative analyses. The study includes a literature review, observations of existing sediment scanners, and design experiments resulting in two prototypes: Protosedim and Sedimtrack. Prototype testing was conducted to evaluate portability, ease of operation, and scanning accuracy. The results indicate that Sedimtrack offers advantages over the previous prototype in terms of a more compact size, lighter weight, and improved adjustability of scanning positions. However, some technical aspects still require refinement, such as the camera support system and sediment holder height adjustment. With a more modular design and lightweight materials, this scanner has the potential to be used in field geological research at a lower cost compared to existing commercial sediment scanners.

Keywords: *Sedimen Scanner, Portable, Functional, Easy to Use.*