

This study focuses on the design and development of an intraoperative brain tumor delineation probe based on Electrical Impedance Tomography (EIT). The objective of the product is to improve the accuracy and efficiency of tumor boundary identification during surgical procedures. The proposed probe utilizes EIT technology to measure the impedance of brain tissues and distinguish between tumor and healthy tissue based on their electrical properties. The design process involves the integration of the EIT probe with a microcontroller-based system, allowing real-time data acquisition and analysis. The development phase includes prototype fabrication, testing, and validation through ex vivo experiments. The expected outcome of this research is an intraoperative hand-held probe that can aid surgeons in achieving precise tumor resection and improve patient outcomes.