

Abstract

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Our research project involves the use of augmented BCI to create a dry biosensor (photonic chip) that is used to detect both EEGs and MGMT presence. The problem we've targeted is tracking glioblastoma after it's been diagnosed. MGMT is a biomarker associated with the presence of glioblastoma where the less frequent it's been detected, chemotherapy for glioblastoma is working. In our augmented BCI technology, we've included a chemosensor to create fluorescence specifically for MGMT and a fluorometer is implemented to create a quantitative value for the fluorescence being detected. This synthetic biology project is cost-effective and efficient to make sure glioblastoma is kept stabilized. Brain tumors are known to be unpredictable, our goal was to create a way for doctors and patients to be aware of their tumor status, particularly glioblastoma which is one of the most common brain tumors.