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Abstract

Sensory Augmentation Using Subdermal Haptic Feedback †

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Abstract: The goal of this study is to introduce an implantable haptic feedback device that allows a user better interaction and feedback from various sensory modules. A thorough analysis of the design of the sensor is provided in this paper. The implantable nature increases the user's ability to integrate the vibrations into a more natural sense over time. Conscious training associating the vibrations with their meaning and the natural neuroplastic capacity of the brain will allow a user an intuitive and integrated understanding of the linked device. By using a standardized external battery module, design constraints surrounding internal power storage are avoided and present an opportunity for modular sensor packages. Current applications include blood glucose monitoring, radiation dosimetry, and pseudo-echolocation using an array of implants.

Keywords: haptics; implant; sensor; radiation; diabetes; medical device

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