

Abstract

Sensory Augmentation Using Subdermal Haptic Feedback [†]

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† Presented at the 3rd International Electronic Conference on Applied Sciences, 1–15 December 2022; Available online: <https://asec2022.sciforum.net/>.

Abstract: The goal of this study is to introduce an implantable haptic feedback device that allows a user to obtain better interactions and feedback from various sensory modules. A thorough analysis of the design of the sensor is provided in this work. 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 to have 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

Supplementary Materials: Conference poster. The material is available at <https://www.mdpi.com/article/10.3390/ASEC2022-13771/s1>.

Author Contributions: Conceptualization, Q.D.M.; methodology, Q.D.M.; software, Q.D.M.; validation, Q.D.M.; formal analysis, Q.D.M.; investigation, Q.D.M.; resources, Q.D.M. and M.H.I.; data curation, Q.D.M.; writing—original draft preparation, Q.D.M.; writing—review and editing, Q.D.M. and M.H.I.; visualization, Q.D.M.; supervision, M.H.I.; project administration, M.H.I. and Q.D.M.; funding acquisition, M.H.I. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by Clarkson University's New Faculty Start-up Grant.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.



Citation: Mooney, Q.D.; Imtiaz, M.H. Sensory Augmentation Using Subdermal Haptic Feedback. *Eng. Proc.* **2023**, *31*, 55. <https://doi.org/10.3390/ASEC2022-13771>

Academic Editor: Carlos Marques

Published: 1 December 2022

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