

Comments from Award Recipient

Sensors and Materials (S&M) Young Researcher Paper Award 2023

Title:

Effects of Long-Term *In Vivo* Stimulation on the Electrochemical Properties of a Porous Stimulation Electrode for a Suprachoroidal–Transretinal Stimulation (STS) Retinal Prosthesis

Authors:

S. Nomura^{1–3}, H. Tashiro^{2,3}, Y. Terasawa^{2–4}, Y. Nakano⁴, M. Haruta⁵, K. Sasagawa³, H. Takehara³, T. Morimoto⁶, T. Fujikado⁶, J. Ohta³

¹Teikyo University, ²Kyushu University, ³Nara Institute of Science and Technology,

⁴Nidek Co., Ltd., ⁵Chitose Institute of Science and Technology, ⁶Osaka University

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In this study, we characterized the electrochemical properties of a high-performance porous stimulation electrode for suprachoroidal–transretinal stimulation (STS) retinal prosthesis. To ensure safe and effective retinal stimulation, it is important to understand the changes in electrode properties during long-term stimulation. This study revealed that the complex properties of a stimulation electrode can be understood by dividing it into four elements in a Randles-type equivalent-circuit model. The electrode properties were stable during the stimulation period, and those in the chronic phase were estimated from the results of short-term evaluations. The evaluation techniques used in this study will contribute to the development of safer and more effective neuroprosthetic devices. I will continue to study sensors, related materials, and technologies to further the development of science and technology.

Shuhei Nomura

Faculty of Fukuoka Medical Technology, Teikyo University

E-mail: nomura@fmt.teikyo-u.ac.jp