

Organic Neuroprosthetics

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Abstract

My research on organic neuroprosthetics is primarily to improve the treatment of epilepsy by prototyping devices which could provide relief to patients suffering from drug-resistant or surgically untreatable seizures. However, the impact of the minimally-invasive technology with organic electrodes and transistors includes all branches of clinical and non-clinical neuroscience involved in 1) Electrode-based Brain stimulation for the therapeutic treatment of other neurodegenerative diseases, 2) Imaging of large-area neural networks with multiphoton systems seeking combined simultaneous electrophysiology, and finally 3) Drug delivery for the therapeutic treatment of other neurodegenerative diseases (most obviously Parkinson's disease). In this presentation I will detail the use of devices in the treatment of epilepsy, and highlight devices in the other 3 major categories.

Keywords: *organic bioelectronics, epilepsy*

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Biography

Adam Williamson is a Principal Investigator at the Institut de Neurosciences des Systèmes (INS), a part of Inserm at Aix-Marseille Université (AMU), France, since April 2014. He is a recipient of the ERC Starting Grant 2016, using organic electronic based neuroprosthetics in the therapeutic treatment of epilepsy. Generally, his research in neuroengineering is focused on in vivo applications for numerous organic electronic devices in physiological and pathophysiological neuronal networks.