



5th International Conference on Nanotechnologies and Biomedical Engineering
Proceedings of ICNBME-2021, vol 87., November 3-5, 2021, Chisinau, Moldova,
Springer, Cham

Low Power Constant Current Driver for Implantable Electrostimulator of the Lower Esophageal Sphincter

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https://doi.org/10.1007/978-3-030-92328-0_17

Abstract

Tone modulation of lower esophageal sphincters (LES) via electrical stimulation is a novel method of gastroesophageal reflux disease (GERD) treatment. Traditionally for output are commonly used constant current drivers, based on different schematic solutions. This allows delivering same stimulation energy even in case of impedance change during patient movements or electrode contact aging or encapsulation. The aim of our work was to design and implement simple constant current driver with digital current control and ultra-low power consumption. This driver was used in a prototype of implantable LES stimulator (WPLES), which effectiveness was confirmed during animal tests.

Keywords: gastroesophageal reflux diseases, current drivers, implantable stimulators

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