

## Packaging Processes for the Implantable Medical Microelectronics

**Authors :** Chung-Yu Wu, Chia-Chi Chang, Wei-Ming Chen, Pu-Wei Wu, Shih-Fan Chen, Po-Chun Chen

**Abstract :** Electrostimulation medical devices for neural diseases require electroactive and biocompatible materials to transmit signals from electrodes to targeting tissues. Protection of surrounding tissues has become a great challenge for long-term implants. In this study, we designed back-end processes with compatible, efficient, and reliable advantages over the current state-of-the-art. We explored a hermetic packaging process with high quality of adhesion and uniformity as the biocompatible devices for long-term implantation. This approach is able to provide both excellent biocompatibility and protection to the biomedical electronic devices by performing conformal coating of biocompatible materials. We successfully developed a packaging process that is capable of exposing the stimulating electrode and cover all other faces of chip with high quality of protection to prevent leakage of devices and body fluid.

**Keywords :** biocompatible package, medical microelectronics, surface coating, long-term implantation

**Conference Title :** ICBAE 2016 : International Conference on Biotechnology and Agricultural Engineering

**Conference Location :** Tokyo, Japan

**Conference Dates :** May 26-27, 2016