

Packaging Processes for the Implantable Medical Microelectronics

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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

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