UNIVERSITY OF TEXAS ARLINGTON | OFFICE OF TECHNOLOGY MANAGEMENT

Batteryless Gastric electrical stimulator (BLESS™)

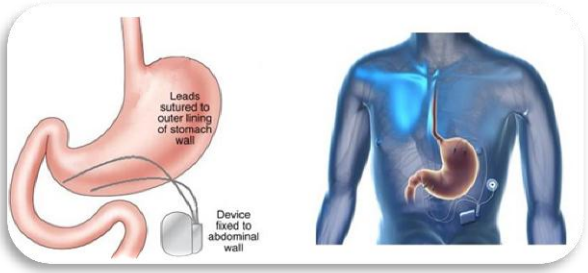
UTA (14-05)

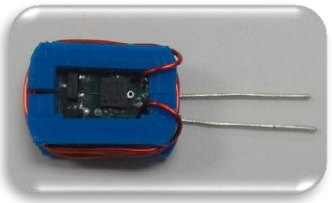
Technology Need:

More than 1.5 million Americans are suffering from severe gastroparesis. Gastric electrical stimulation (GES) helps regain the loss of motility in the stomach tissues and reduce the symptoms. GES has shown great promise in the treatment for gastroparesis – a common disorder that patients with diabetes, cancer and Parkinson's disease suffer from. Currently, conventional GES needs to be surgically implanted and is powered by non-rechargeable batteries. The replacement of battery takes approximately 3 to 5 years, so patients are required to have surgery for the replacement every 3 to 5 years. The repeated surgeries give patients a heavy toll both physically and financially. A batteryless, easy implantable and wirelessly configurable gastric stimulator is needed.

Solution/ Offering:

Researchers at UTA have developed a miniature gastro-stimulator for gastroparesis treatment. The stimulator is an ultra-flat capsule that makes it very easy to implant. Instead of conventional invasive procedure, it can be implanted through endoscopy via mouth and esophagus. Wireless energy can be transferred to this capsule to avoid repetitive surgeries for battery replacement. Hence, setting and configuration of the stimulator can be tailored to clinical needs of individual patients and remotely operated.





Value Proposition:

- ✓ Batteryless and wireless
- ✓ Small in size
- ✓ Lightweight
- ✓ Convenient to implant
- ✓ Higher accuracy
- ✓ Biocompatible packaging
- ✓ Reduce Cost

Industrial application:

- ✓ Gastroparesis Treatment

Patent Status:

- ✓ PCT Application Filed

Current Stage:

- ✓ Prototype

Literature Reference:

- ✓ Batteryless Wireless Gastric Implant

Meet the Inventor

Dr. J.C. Chiao is the Greene endowed professor and Garrett endowed professor of Electrical Engineering at the UT Arlington. He received The 2011 Edith and Peter O'Donnell Award and number of other awards. His research interest is microelectromechanical system (MEMS), Bio-MEMS-photonic, nanomedicine, etc.

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