



MINIATURE SOLID STATE BATTERIES FOR OBSTRUCTIVE SLEEP APNEA



OBSTRUCTIVE SLEEP APNEA (OSA)

OSA is a sleep disorder characterized by repeated episodes of upper airway blockage, leading to pauses in breathing and reduced oxygen levels. An estimated 1 billion people worldwide experience mild to severe OSA. Whilst snoring is the better known symptom of OSA, the condition can lead to serious health issues like heart disease, stroke and type 2 diabetes.

IMPLANTED DEVICES

OSA can be managed through lifestyle changes but when the condition is more serious Continuous Positive Airway Pressure machines can deliver a continuous stream of air through a mask worn over the nose or mouth. Recently, implanted devices that stimulate nerves and airways have shown great effectiveness to reduce the severity of OSA.

PAIN POINTS FOR DESIGNERS

Placing nerve stimulators near the airways can yield simplicity of design and less serious implantation procedures. This puts pressure onto the design of the device and particularly the size of the battery. A small battery which recharges rapidly could help with improving comfort and patient compliance with regular recharges.







STEREAX SOLID STATE BATTERIES

Stereax M300 is a rechargeable, miniature solid state battery with:

- 300 μ Ah
- 3.5 V
- 3 mA pulse current
- 1000 cycles
- 5.6 x 3.6 x 1.1 mm



PRODUCT DESIGN BENEFITS

-  Millimetre-scale format, enable real miniaturisation
-  Rectangular form factor, fits easily on PCB
-  High power, capable of powering most comms and therapies
-  High cycle life, can be recharged numerous times
-  Can be recharged wirelessly
-  Rapid charging, improves patient compliance to charging at home

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