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Self-Clearing Glaucoma Drainage Device

A new "Smart" implantable glaucoma drainage device utilizes variable flow resistance and a self-clearing mechanism to enhance reliability and safely manage intraocular pressure, addressing poor operational longevity due to bio-buildup.

Glaucoma is the leading cause of blindness in the world. The eye disorder has no cure, and can only be treated via pharmaceutical or surgical intervention with varying degrees of success. Implantable glaucoma drainage devices have grown in popularity over the past years, but the reliability of these implants is poor; only about 50% of the devices are still operational after five years. The lack of reliability is generally due to accumulation of microorganisms during and after implantation.

Researchers at Purdue University have invented a new glaucoma drainage device that combats the problem of biofouling. Using new advancements in technology, the device is "Smart," and is able to clear itself of harmful bio-buildup. It is also able to functionally manage intraocular pressure (IOP) due to the variable flow resistance of glaucoma drainage device (GDD). These improvements allow for a more reliable, yet safe and comfortable implant for treating glaucoma.

Advantages:

-Self-clearing

-Control of IOP pressures

Potential Applications:

-Glaucoma treatment

TRL: 3

Intellectual Property:

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Category
Materials Science & Nanotechnology/Biomedical & Bioinspired Materials

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