Docket #: S25-403

Integrated Laser Intensity Stabilization through Optical Nonlinearity

Stanford researchers have found a way to make laser output more stable and less noisy using a compact passive device. Many laser-based systems lose performance because of fluctuations in laser power, and current solutions often rely on active electronic controls that can be complicated, harder to scale, and limited in speed. This technology is designed to reduce that noise more simply while fitting within compact optical systems. It may be useful for products in communications, sensing, imaging, and precision measurement.

Applications

- Laser systems for communications, sensing, imaging, and precision measurement
- Add-on modules that improve laser stability
- Integrated photonic components for optical hardware platforms

Advantages

- Reduces laser noise without needing complex active electronic feedback
- Designed to work in a compact format that can fit into integrated optical systems
- Can support a wide range of optical system types and formats
- May offer a simpler and lower-complexity alternative to existing approaches

Innovators

- Amir Safavi-Naeini
- Jon Simon
- Martin Fejer
- Devin Dean
- Ziyu Wang
- Geun Ho Ahn

Licensing Contact

David Mallin

Licensing Manager, Physical Sciences

Email