Optical Instrument and Method for Retinal Imaging

This technology involves an optical instrument designed for precise retinal imaging, utilizing broadband light and advanced beam control methods.

What is the Problem?

Retinal diseases are one of the leading causes of vision loss and blindness in the world. Accurate and detailed retinal imaging is crucial for diagnosing and monitoring retinal diseases, such as macular degeneration and diabetic retinopathy. However, traditional imaging methods often lack the resolution and depth required for early detection and comprehensive analysis, leading to delayed treatment and suboptimal patient outcomes.

What is the Solution?

The technology is an optical instrument that generates a broadband light shaped as a line, which is then split into a sample beam and a reference beam. These beams are used for depth interference and imaging, providing high-resolution images of the retina. The technology employs movable or deformable optical elements to control the direction of light, enhancing the precision and flexibility of the imaging process. This method allows for detailed visualization of retinal structures, aiding in early diagnosis and effective monitoring of eye diseases.

What is the Competitive Advantage?

High Resolution: Provides superior, cellular-resolution image quality compared to traditional retinal imaging methods.

Depth Interference: Utilizes advanced techniques to achieve detailed depth imaging, crucial for comprehensive retinal analysis.

Flexibility: Movable or deformable optical elements allow for precise control of light direction, enhancing imaging accuracy.

Non-Invasive Early Detection: Enables non-invasive early diagnosis of retinal conditions, improving patient outcomes through timely intervention.

Patent Information:

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Technology ID
BDP 8009

Category
Device/Ophthalmology
Selection of Available
Technologies

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References

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