



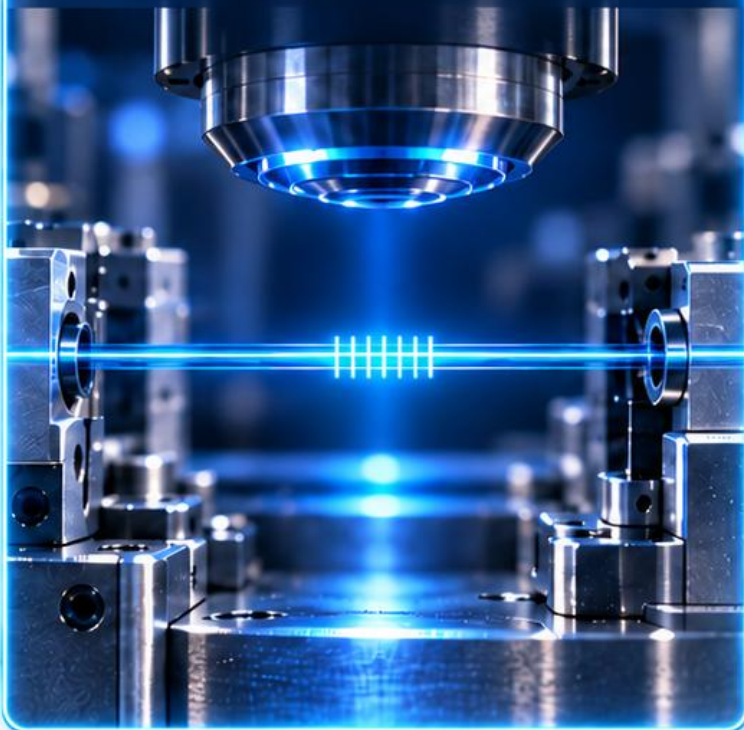
Smart Optical Fibers for Smart Catheters

Dr Andy Gillooly

EPIC Online Technology Meeting on Fibers for Medical Applications | 21.09.2026

engionic Femto Gratings GmbH

Femtosecond-written FBGs



engionic Fiber Optics GmbH

Lightguides & fibre assemblies

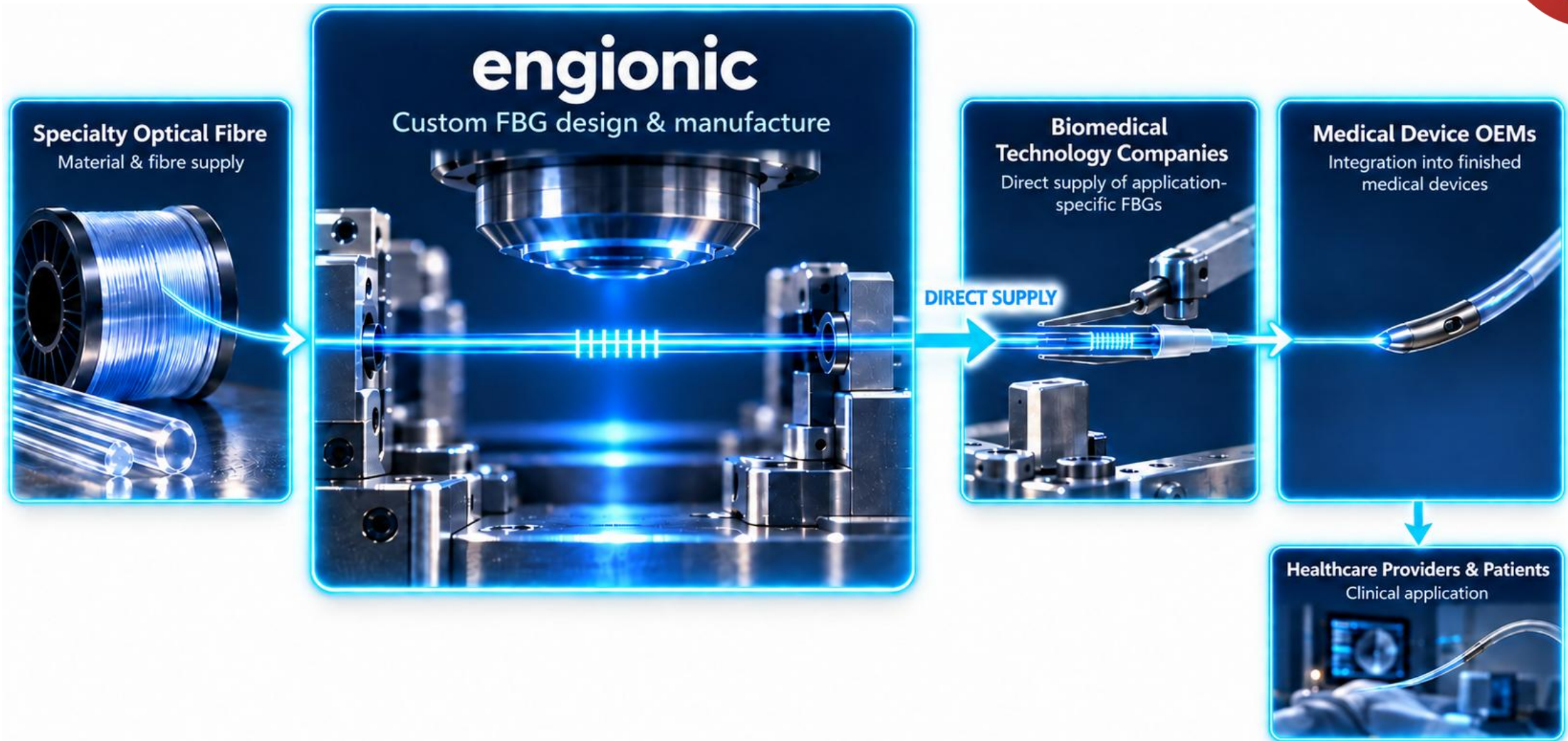


engionic CNC GmbH

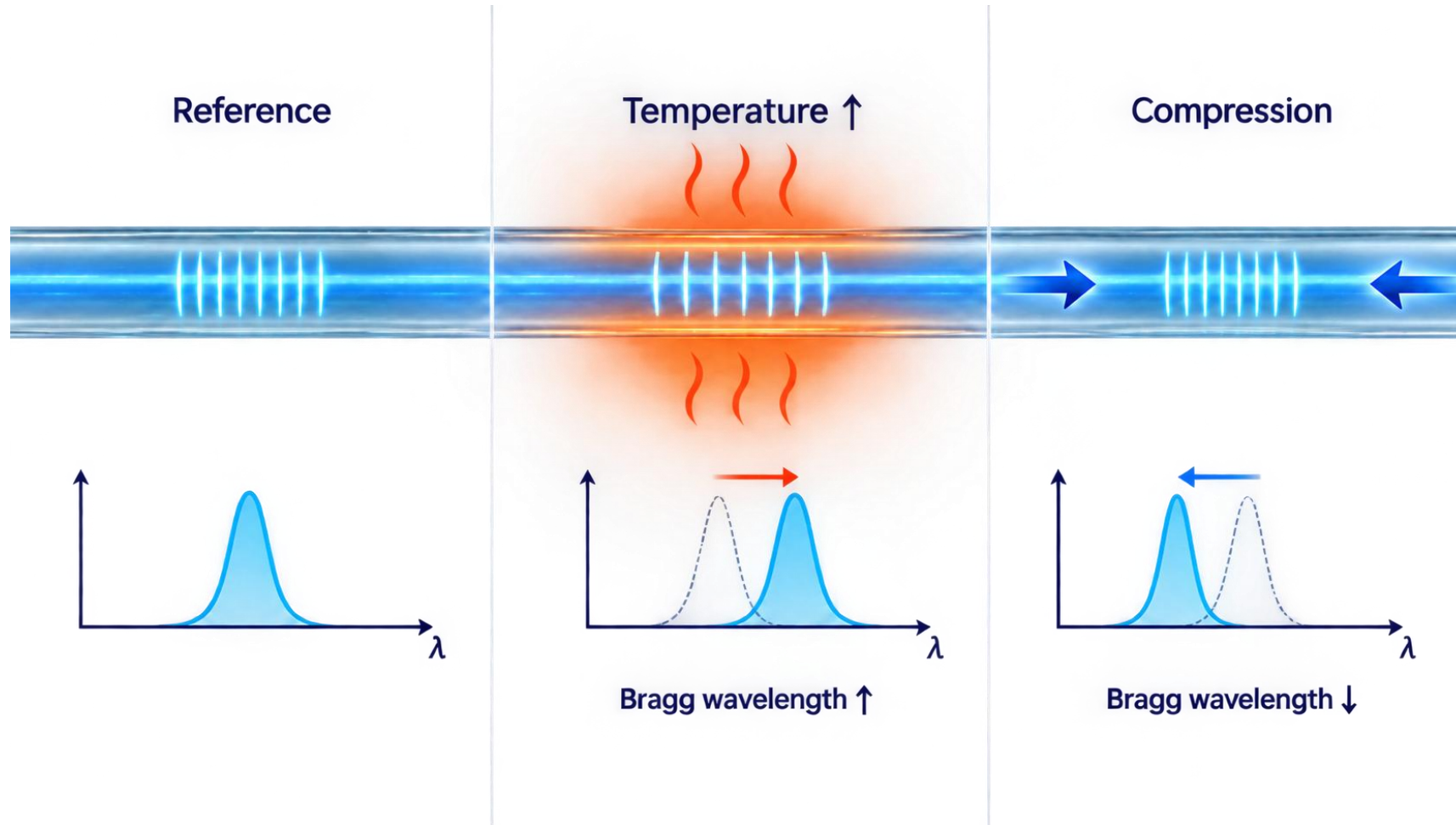
High-precision CNC machining



What We Offer

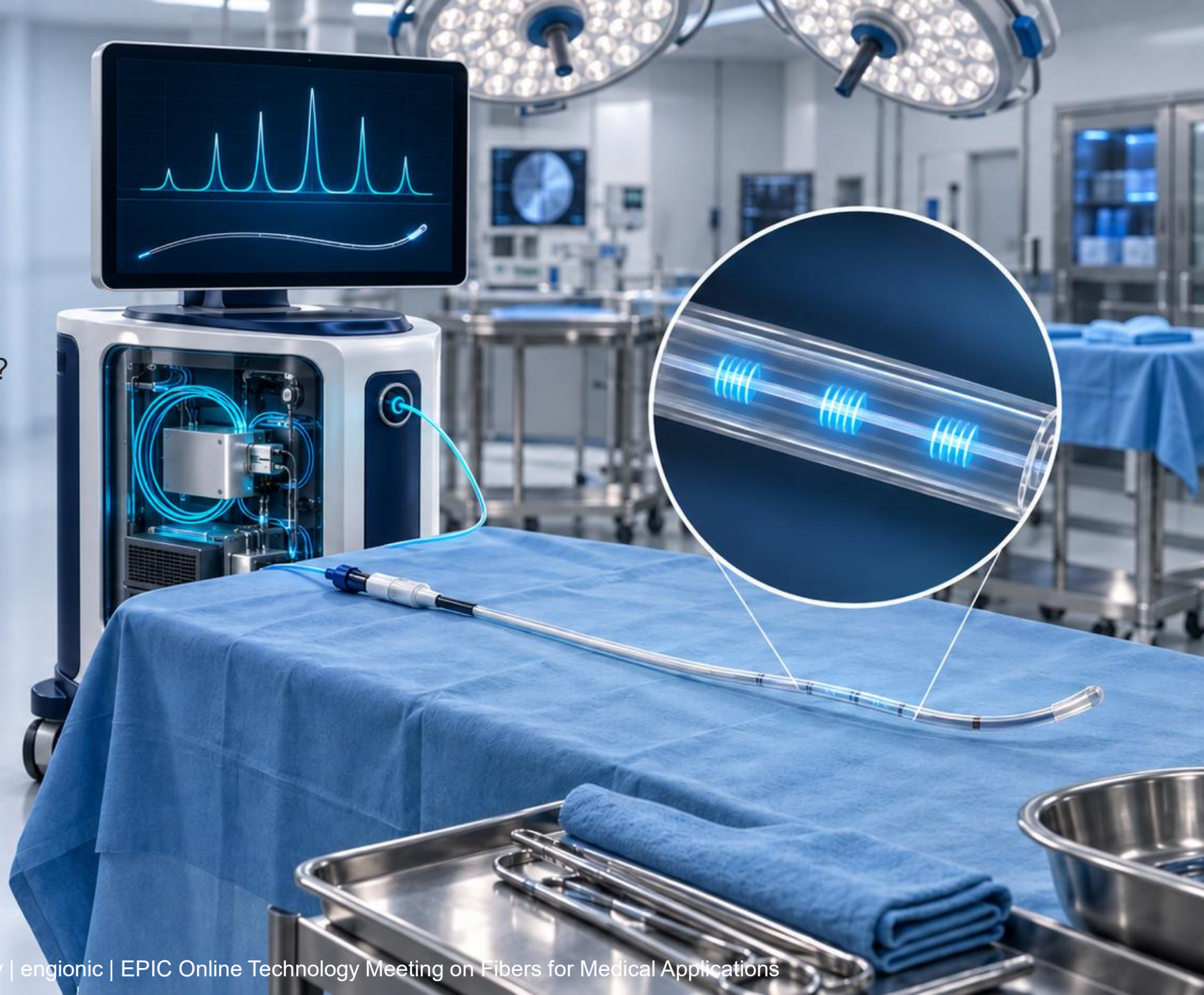


Fiber Bragg Grating (FBG) Sensing



Smarter catheters

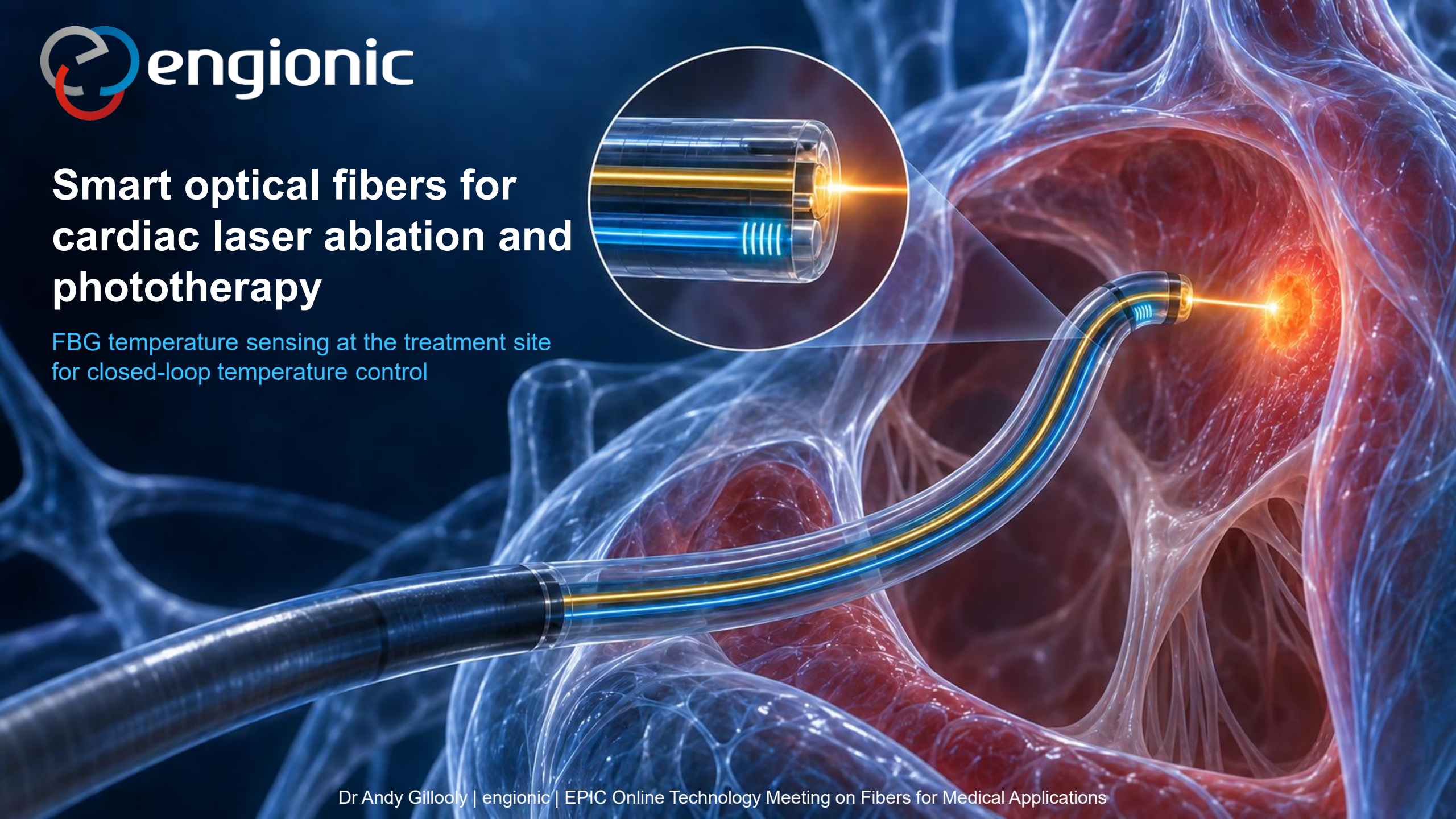
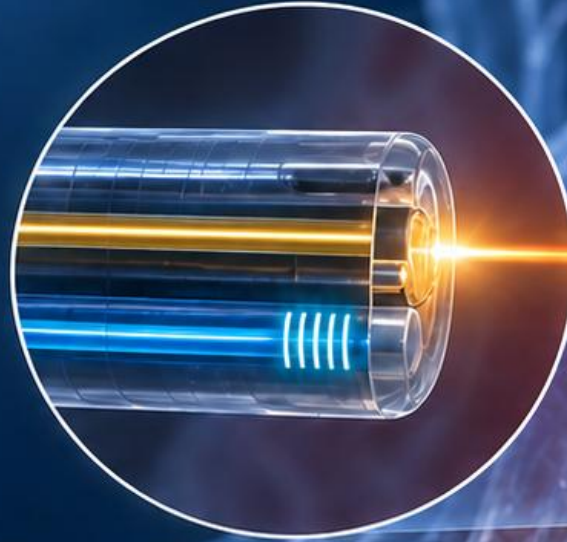
1. What temperature is being reached?
2. Is energy reaching the intended tissue?
3. What shape is the catheter taking?
4. Where is the tip?
5. How much force is being applied?





Smart optical fibers for cardiac laser ablation and phototherapy

FBG temperature sensing at the treatment site for closed-loop temperature control





Shape-sensing steerable catheters and guidewires

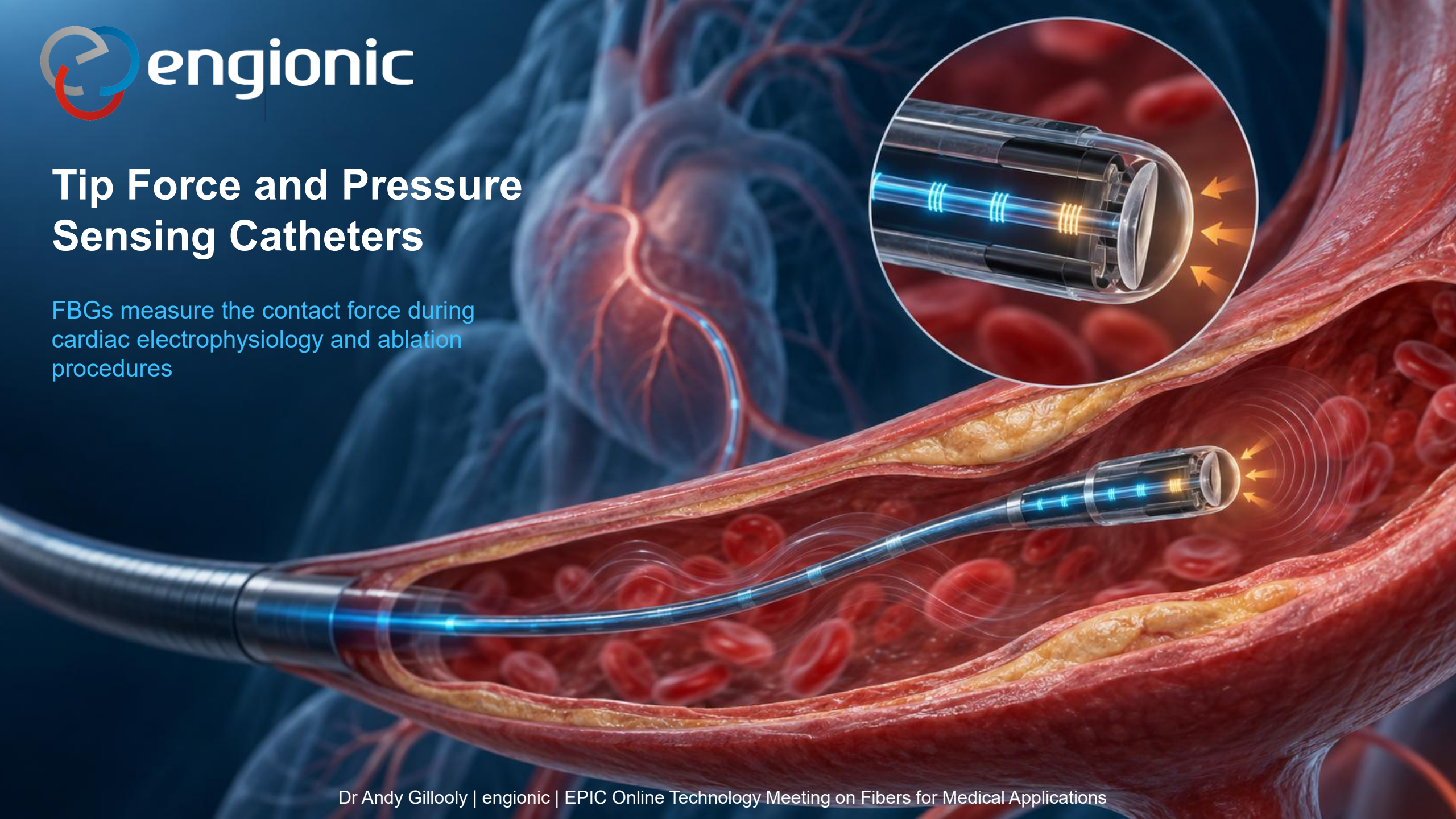
FBG based shape reconstruction allows improved visualization, safer navigation and reduced radiation exposure





Tip Force and Pressure Sensing Catheters

FBGs measure the contact force during cardiac electrophysiology and ablation procedures



What We Look For

Customers:

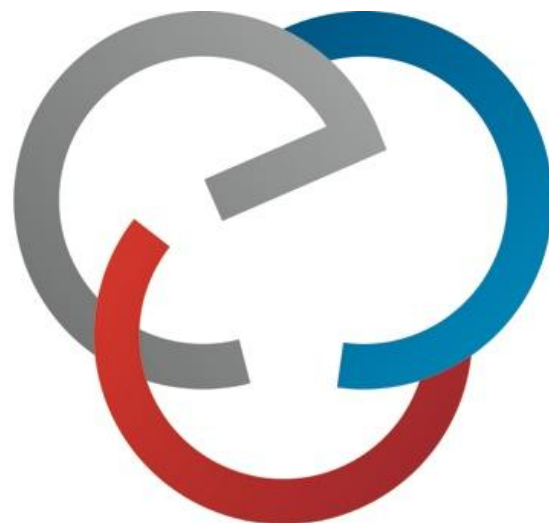
- Medical customers for: FBGs, light guides and CNC parts

Partners:

- Research partners for funded biomedical projects

Suppliers:

- Next generation optical fibers
- Cost reduced polyimide coated fibers
- Improved coating performance



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group

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