

LightPath™ intra-operative molecular imaging system

Lightpoint Medical



The first approved low light imaging and nuclear physics for intra-operative imaging of cancer.

Expertise and domain knowledge

- Medical imaging
- Surgical visualisation
- Women's Health
- Technology development
- Modelling
- Proof-of-Principle
- Short run manufacturing
- Medical product development



Our client asked:

Our client, Lightpoint Medical, needed a technology and product development partner to help it develop the world's first molecular imaging system, designed to detect cancerous tissue in real time during surgery. The initial focus of the project was on breast cancer surgery where up to 40% of patients are faced with additional surgery. As well as reducing the need for reoperation, the goal was to help reduce the likelihood of recurrence, patient anxiety and the enormous cost to health services.

The project story:

Although the science behind the LightPath™ system had been known for many years, this was the first time that it had been used in this way. The system detects Cerenkov Luminescence, a faint light signal produced by Positron Emission Tomography (PET) imaging agents widely used in cancer diagnosis. The system is used intra-operatively to generate optical images of the uptake of PET imaging agents to help differentiate between tissue affected or unaffected by cancer, which may be helpful in assessing surgical margins.

Sagentia Innovation worked as Lightpoint's product and technology development partner, collaborating on all aspects from the core science to system design. The Sagentia Innovation team:

- Identified detector technologies for both Positrons and Cerenkov Luminescence – equivalent to seeing a 3mW LED at 15km
- Modelled the relative performance of approaches
- Performed early Proof-of-Principle demonstration and collaborated with medical research teams
- Proposed commercially viable solutions for the operating theatre and pathology lab
- Undertook full product development of LightPath™ to manufacturing prototypes for clinical studies

Results: deliverables and outcomes

- The world's first intra-operative molecular imaging system to help surgeons ensure they have removed all cancerous tissue in a single operation
- The technology has the potential for imaging of numerous cancer types
- The LightPath™ system obtained CE Mark approval in 2015 and was launched in Europe that year
- The product won 'new product of the year' award at the 2016 BEEAs

Contact us

info@sagentiainnovation.com
+44 1223 875200
sagentiainnovation.com