

Fluorescence-Guided Surgery (FGS) Group & Facilities

Fluorescence-guided surgery is an intraoperative optical imaging method that provides surgeons with real-time guidance for the identification and delineation of tumours or vital structures. This novel approach is being tested by different surgical disciplines within the Erasmus MC.

To focus our activities in this rapidly expanding research field, we have formed the Fluorescence-Guided Surgery Group. The group includes all researchers that are involved in this field, extending over 17 different disciplines. Our vision is that close collaboration will empower us as a group to facilitate more efficient and productive research lines.

By forming trans-disciplinary partnerships, we are focusing on new clinical trials, improved coordination of the use of imaging facilities, coordinated and combined efforts for investments in new imaging devices and of research funding, and communication with secondary partners such as the pharmacy, medical ethical committee (METC), and the technology transfer office (TTO). This initiative flourishes through our close partnership with pioneering researchers at the Leiden University Medical Centre.



Team: The group includes the following disciplines: Surgical Oncology, Otorhinolaryngology Head and Neck Surgery, Radiology & Nuclear Medicine, Cardiothoracic Surgery, Pathology, Plastic Surgery, Gynaecological Surgery, Neurosurgery, Gastroenterology and Hepatology, Cardiology, Molecular Genetics, Radiation Oncology, Urology, Vascular Surgery, Viroscience, Orthopedic Surgery.

Facilities:

- Intraoperative fluorescent camera systems (Spectrum, Quest Medical Imaging, <https://www.quest-mi.com/>, Karl Storz endoscopy system, <https://www.karlstorz.com/us/en/nir-icg-near-infrared-fluorescence.htm>)
- Integrated technologies for robotic-assisted surgery (Da Vinci surgical systems, Intuitive, <https://www.intuitive.com>)
- Ex vivo imaging systems for quantification of fluorescence signal in standardized environment (Pearl Trilogy, Li-cor, <https://www.licor.com/bio/>), available in OR and pathology department
- Expert center on spectroscopic technology, including Optoacoustic imaging; Raman spectroscopy; Multidiameter single-fiber reflectance spectroscopy, and others
- State-of-the-art ex vivo imaging systems, tissue analysis, preclinical imaging facilities, all centered in the Applied Molecular Imaging facility of the Erasmus MC. This core facility offers accessible infrastructure, training center and expert center regarding preclinical and translational imaging techniques. A unique strength of the AMIE is that it harbors a wide plethora of imaging technologies in combination with strong ties to expert users, availability of exclusive disease models and established links between basic, translational and patient-bound research.

Fluorescence-guided Surgery Group Erasmus MC: <https://www.erasmusmc.nl/en/cancer-institute/research/groups/fluorescence-guided-surgery-group>

AMIE Core Facility: <https://www.erasmusmc.nl/en/research/core-facilities/amie>