Esther Kho, Netherlands Cancer Institute, Netherlands

Bio:
Esther Kho received her M.Sc. degree in Biomedical Engineering from the University of Groningen, The Netherlands, in 2014. She performed internships at the Medical University Hospital in Groningen and Utrecht, The Netherlands, and her graduation project at the Robarts Research Institute in Canada. Since 2015, she has been working towards the Ph.D. degree in the Department of Surgery at the Netherlands Cancer Institute/Antoni van Leeuwenhoek Hospital, Amsterdam, The Netherlands. Her research concerns the development, testing and clinical evaluation of a hyper/multispectral imaging system, that can be used to visualize tumor tissue, for image guided surgery.

Presentation Title:
Hyperspectral imaging for intraoperative margin assessment during breast cancer surgery

Abstract:
Worldwide, up to 40% of the breast conserving surgeries result in additional operations due to positive resection margins. We propose to reduce this percentage by using hyperspectral imaging for resection margin assessment during surgery.

With hyperspectral imaging, we measure the diffuse reflected light after it has undergone multiple scattering and absorption events within the tissue. This 'optical fingerprint' can be used to discriminate tumorous tissue from surrounding healthy tissue. Spectral hypercubes were collected on freshly excised breast specimen with a pushbroom camera (900-1700 nm). We developed and tested several classification methods. The results will be shown in the presentation.