



## Title of Invention

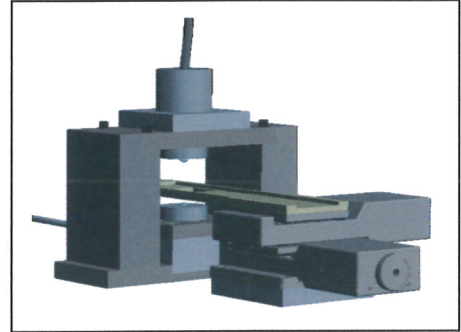
**PI :** Prof. Jang-Ming Lee

Department of Surgery, College of Medicine,  
National Taiwan University

### Experience:

Professor Jang-Ming Lee is currently the professor of dept. of surgery, National Taiwan University, and chief of Division of Thoracic Surgery, National Taiwan University Hospital. He was engaged in the research of esophageal cancer for more than 15 years with over 100 research publications in the field of Thoracic Surgery. His current research interests include the biomarkers, early diagnosis, and targeted therapy for esophageal cancer, photodynamic therapy, and minimally invasive esophagectomy.

<https://www.ntuh.gov.tw/surg/doctor/DR/%E6%9D%8E%E7%AB%A0%E9%8A%98.aspx>



### Market Needs:

The incidence of certain cancer is increasing. Poor prognosis is still a major problem in some cancers, such esophageal cancer. We believe that development of a method for real-time in-situ assessment of treatment response and prognosis to improve the adverse prognosis offers great market potential worldwide.

### Our Technology:

We have developed a novel two dimensional absorption spectrum measurement system (TDAS) for ex-vivo analysis of optical absorption microscopy. Using esophageal cancer tissue as model, we generalized the spectral signatures of the tissues treated with concurrent chemoradiotherapy (CCRT) and establishing the prediction model for CCRT response by using principal component analysis (PCA). Meanwhile, we demonstrated the optical absorption microscopy can be a biomarker to predict the survival and disease recurrence of patients.

### Strength:

Raman microscopy has been demonstrated to be used to predict disease recurrence in solid tumor. To our knowledge, we are the first to demonstrate and generalize the predicting model of optical absorption microscopy in analyzing the treatment response and disease recurrence. The strength of our technology is in using optical spectroscopy for prognostic prediction due to visible light is safe and easy to work with for clinical assessments. We believe the technology has great market potential applying in the *in vivo* clinical analysis to assist in surgical dissection, pathological assessment, and improvement of clinical outcome.

### Competing Products:

Nil

### Intellectual Properties:

There is no related patent application

### Contact (do not need to fill out):

Center for Industry-Academia Cooperation, NTU

Tel: 02-3366-9945, E-mail: [ntuciac@ntu.edu.tw](mailto:ntuciac@ntu.edu.tw)

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