



Dr. Zoltan Takáts, Imperial College, London

### “Scalpel smells cancer”

Dr Takats has obtained his PhD from Eötvös Loránd University, Budapest, Hungary. He has worked as a post-doctoral research associate at Purdue University, Indiana, USA. After returning to Hungary, he served as Director of Cell Screen Research Centre and also as Head of Newborn Screening and Metabolic Diagnostic Laboratory at Semmelweis University, Budapest. Dr Takats was awarded the Starting Grant by the European Research Council in 2008 and he subsequently, became a Junior Research Group Leader at Justus Liebig University, Gießen, Germany. He moved to the United Kingdom in 2012 and currently works as a Reader at Imperial College London.

At the meeting will Takáts present the results of their research; “Interoperative Real Time Ambient Mass Spectrometry”

The reason for this is that in modern surgery uses electrical scalpels as opposed to traditional knives burning tissue open. This closes the blood vessels, and bleeding is reduced. During the operations smoke develop (= volatile compounds). Instead of this “smoke” being passed to fume hoods, Takáts has directed the “smoke” to a mass spectrometer. With respect to the compounds the MS can identify and quantify it has been shown that various cancers provide different profiles and that these profiles is different from profiles in healthy tissue. Reply to which tissues the knife cuts in is available within 0.5-1.0 seconds. The accuracy is as good as the traditional histological examinations, ie 97-98%. In addition, doctors get “real time”

answers to if they cut in cancer or healthy tissue and there is no need to wait for a histological examination while the patient is under general anaesthesia.

(Source: <http://www.imperial.ac.uk/AP/faces/pages/read/Home.jsp?person=z.takats>)