

# Cancer Diagnostics Conference & Expo

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## Fast evaluation of biopsy for prostate cancer diagnosis by Fraunhofer IKTS

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At Fraunhofer IKTS, we developed a device, based on a new approach in cancer diagnostics. Principle of the technology is the time-time correlated autofluorescence and an algorithm, which calculates the fractional dimension of the decreasing function. The device measures the fluorescence of a prostate-biopsy and calculates the fractional dimension of the tissue in less than two minutes. The result, malign or benign, is shown on a display. Different kinds of biomolecules are able to fluoresce energetically excited without any additional modification. After deactivation of the radiation source, the decay behavior of the inherent fluorescence intensity of the cell tissue is detected in a time resolved and spectrally resolved manner. By investigating prostate tissue, the correct classification, like benign and malign, could be stated in 93.4% of the analyzed points. In this case, the different autocorrelation function  $C(t)$  of the intensity decay behavior has been determined. The new approach confirms a high specificity and sensitivity and seems to offer a non-invasive and real-time detection technique. Through different clinical studies, we have shown the feasibility of our device and in recent publications, we also demonstrated the possibility of detecting cancer in other tissues like oral cavity.

### Biography

Andreas Lehmann is a Member of the Research Staff of the Fraunhofer IKTS since August 2014. He has studied Mechanical Engineering at the Technische Universität Dresden. He has worked in the field of Optical Coherence Tomography and Optical Cancer Diagnostic where he worked on a Spin-Off from the Fraunhofer-Gesellschaft to build and sell devices for the optical cancer diagnosis, developed at the Fraunhofer Institute for Ceramic Technologies and Systems IKTS.

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