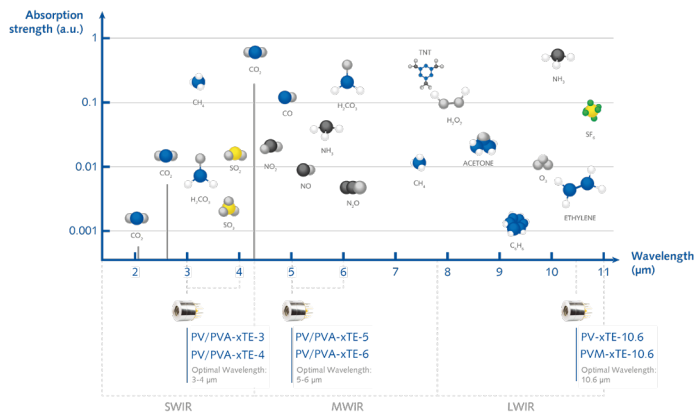


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# MINIATURIZATION OF OPTICAL SPECTROMETERS – FROM COMPONENTS TO SYSTEM INTEGRATION

20. Mai 2021 | 16.00-18.00

This online-workshop is brought to you under the framework of the PHOENIX III project within the Berlin Program for Internationalization.

The need to analysis on the spot and receive instantaneously information about materials and chemical compositions is one key driver to the development of small compact systems. One approach is the spectral analysis of materials and chemicals using optical instruments such as spectrometers. The need to shrink the size with sufficient performance drives major developments in optical instrumentation research. Because shrinking in size also constraints some key performance measures such as resolution, dynamic range and signal efficiency the balance between the chosen optical design and performance of the components is the key for successful system integration. Optical Spectrometers are becoming more and more feasible for the use in daily applications such as agriculture, water and gas analysis and even consumer electronics and need further optimization between optical design, components performance and system assembly strategies. The Webinar will present insights in the use of high performance detectors and its application in spectrometers.

Fraunhofer IPMS:



Fraunhofer IPMS has a long term record in designing and realizing miniaturized optical spectrometers based on dispersive optics. Fraunhofer IPMS shows the shrinkage of a dispersive Cerny Turner Setup from 700cm<sup>3</sup> own to 1cm<sup>3</sup> and give an outlook for further developments based on new available key components such as detectors and lightsources combined with high precision assembly methods.

Presentation given by Dr. Heinrich Grüger (Fraunhofer IPMS)



VIGO System S.A.:

Infrared photon detectors are for many years the major part of the spectroscopy devices. VIGO presents the use case of our infrared detectors for different spectroscopy techniques. We constantly develop our products and our new developments follow the miniaturization requirements. We demonstrate the next advancement of IR detectors and our vision of miniaturized spectrometers for MidIR.

Welcome words - Dr Adam Piotrowski

About Vigo System S.A. - Dr Aneta Michalkiewicz-Kecler

Spectroscopy and VIGO detectors usage - Jędrzej Mijas

MiIR Photonics Integrated Circuits - Prof. Ryszard Piramidowicz | Instytut Mikroelektroniki i Optoelektroniki PW

## REGISTRATION



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