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Bio:

Jürgen Popp studied chemistry at the universities of Erlangen and Würzburg. After his PhD in Chemistry he joined Yale University for postdoctoral work. He subsequently returned to Würzburg University where he finished his habilitation in 2002. Since 2002 he holds a chair for Physical Chemistry at the Friedrich-Schiller University Jena. Since 2006 he is also the scientific director of the Leibniz Institute of Photonic Technology, Jena. His research interests are mainly concerned with biophotonics. In particular his expertise in the development and application of innovative Raman techniques for biomedical diagnosis should be emphasized. He has published more than 630 journal papers and has been named as an inventor on 12 patents in the field of spectroscopic instrumentation. He is founding editor and Editor-in-Chief of the Journal of Biophotonics. In 2012, he received an honorary doctoral degree from Babeş-Bolyai University in Cluj-Napoca, Romania. Professor Jürgen Popp is the recipient of the 2013 Robert Kellner Lecture Award and the prestigious 2016 Pittsburgh Spectroscopy Award. In 2016 he was elected to the American Institute for Medical and Biological Engineering (AIMBE) College of Fellows.



Presentation Title:

Translational approaches in photonics towards applications for clinical routine

Abstract:

In recent years, the combination of photonic approaches have shown their potential to meet current diagnostic challenge in various fields of medical need (such as infectious diseases and oncology). One of the biggest challenges is the effective transfer of excellent research results into marketable products. Too often, innovations get stuck in the “valley of death” on their way to the market or before reaching a clinical setting. This is caused by gaps in the research transfer process and missing handover points between partners. Public-private partnerships (PPP) e.g. in the form of a research campus aim at closing these gaps.

We are presenting examples of successful translation in the context of a research campus as a means for the foundation of a long-term cross-sector cooperation with a new quality of co-working: technologists and scientists from academic institutions, clinicians, and companies are teaming up to develop rapid point-of-care diagnostics using photonics technologies. In this context, basic research, technology development, regulatory competency, and clinical practice are being brought closely together, which increases the efficiency of research and can shorten development terms. By cross-disciplinary scientific exchange and early discussion with experts from the industry, research and development is aligned along the value creation chain to implement technological approaches into real clinical solutions or product innovation. Solutions are completely new approaches or the merging of both existing and new methods, such as the combination of fast molecular-selective photonic approaches (e.g., Raman spectroscopy in combination with novel optoelectronic-based enrichment methods) and molecular-biological technologies for the rapid and precise diagnosis.

A faster dissemination of technological innovations in the user community is needed and the ability to utilize the entire spectrum of technological approaches directly at hospitals and with access to clinical samples and biobanks. To achieve this, a networking with biotechnology and pharmaceutical companies has to be established to test feasibility and clinical utility of new biophotonic approaches early on during development. The challenges should be addressed in a comprehensive and strategic approach which combines all expertise in medical fields with the latest technological developments. We propose this kind of partnerships as a role model for innovation hubs in the field of photonics at the interface between academic research and industrial application.

Website: <http://www.infectognostics.de/en.html>

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