

# Abstract

## **„The future of image sensing - More intelligence or more sensing?“**

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The relentless progress of semiconductor technology is shrinking the minimum feature size on CMOS chips further and further. However, for optical reasons the pixel pitch has stopped to decrease, and it remains about 1 micrometer. How should the growing available functionality in pixels and on chips be used, to provide for image sensors with improved performance? One approach would simply be to fabricate image sensors with more pixels and use in-pixel/on-chip/off-chip Artificial Intelligence as a panacea to solve any given machine vision problem. The approach favoured in this talk is to provide each pixel with additional sensing functionality, in order to let physics solve part of the problem. Examples of this approach include hyperspectral imaging, polarization sensing, IR/THz imaging, OCT (Optical Coherence Tomography), DOT (Diffuse Optical Tomography), Lock-in Imaging, CORNAR imaging, etc.