



MATERIALS THAT MATTER

Trends in VCSEL Illumination

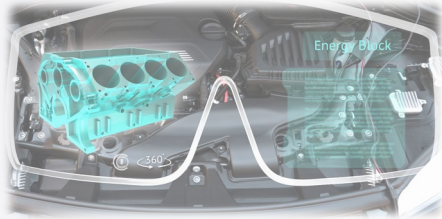
EPIC Online Technology Meeting on VCSEL Manufacturing and Applications

7th June 2021

Dr Julien Boucart, Director Product Management

Trends: Emerging Applications

Mobile phone: from Face Unlock and Photography to Augmented reality



White Goods: 3D cameras for higher customization / efficiency



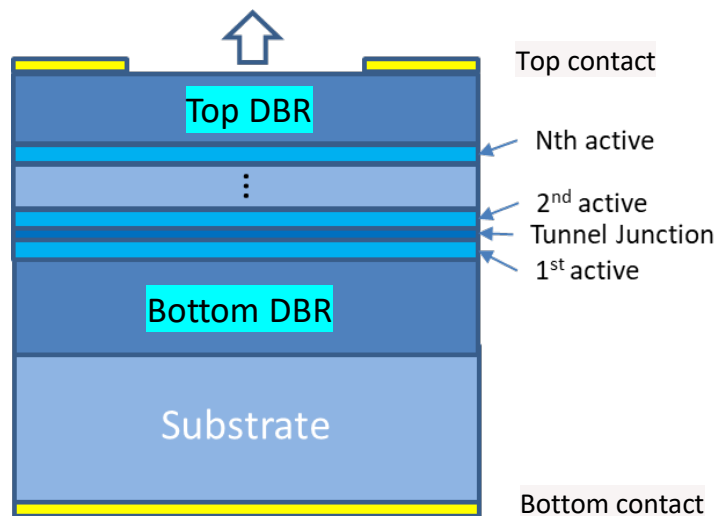
Automotive In Cabin / Exterior



Factory 4.0



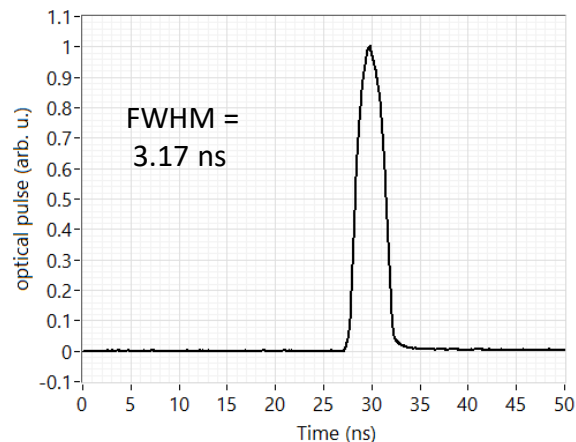
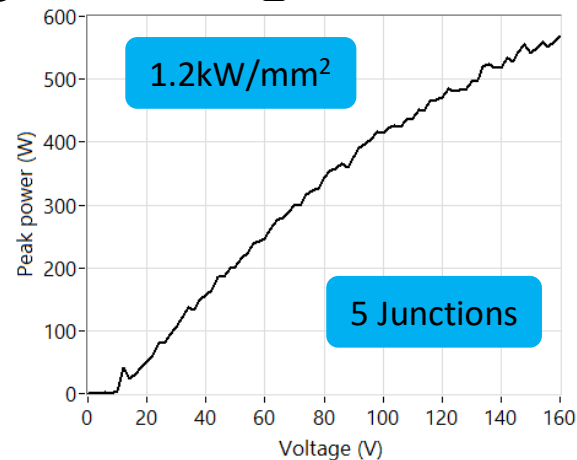
Multi-junction VCSEL – Squeezing more light out



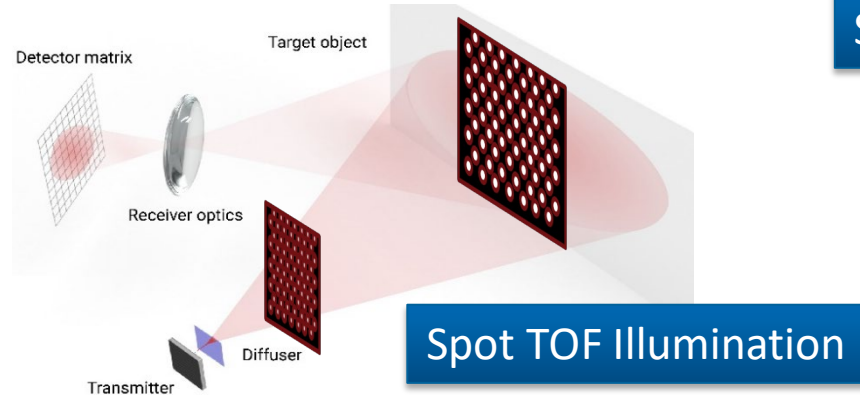
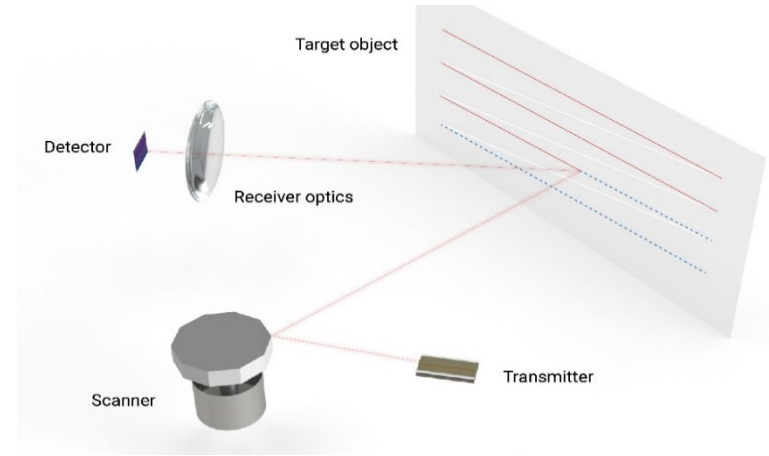
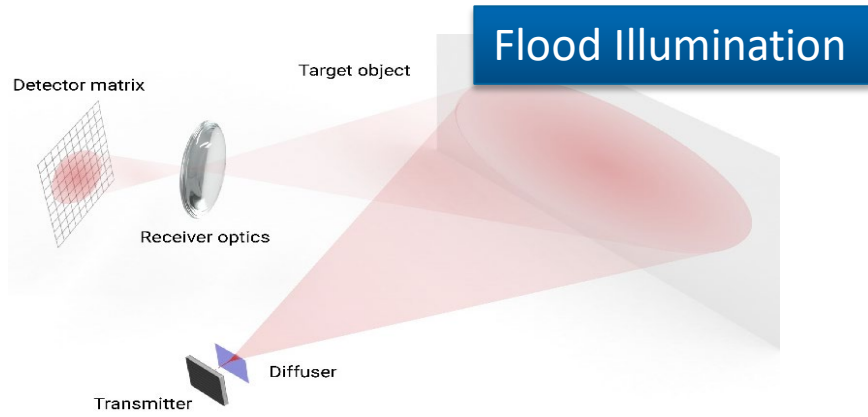
Suitable for applications direct TOF

Advantages

- Vertical stacking of active regions
 - Higher power density, smaller chip, lower cost
- Lower current
 - Simpler Laser Driver, low EMI, faster rise and fall times
- Higher slope efficiency and PCE

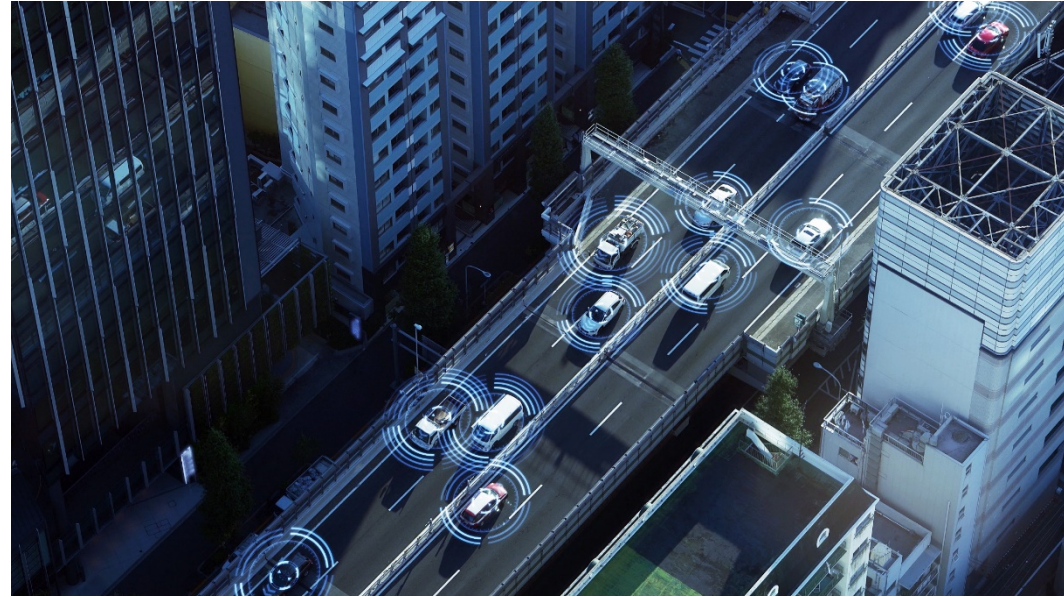
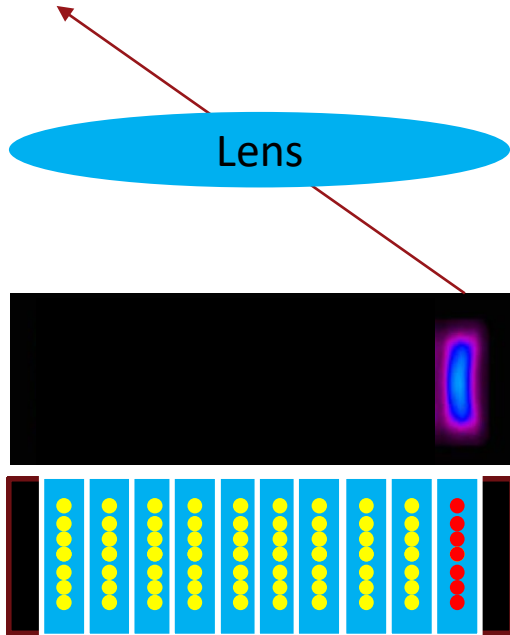


ToF Architectures



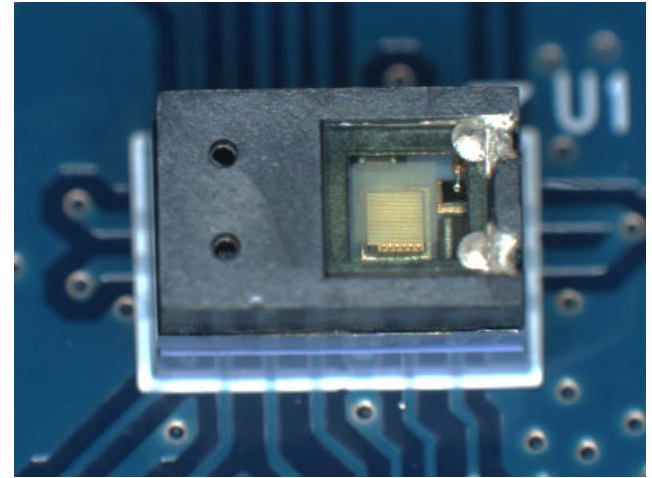
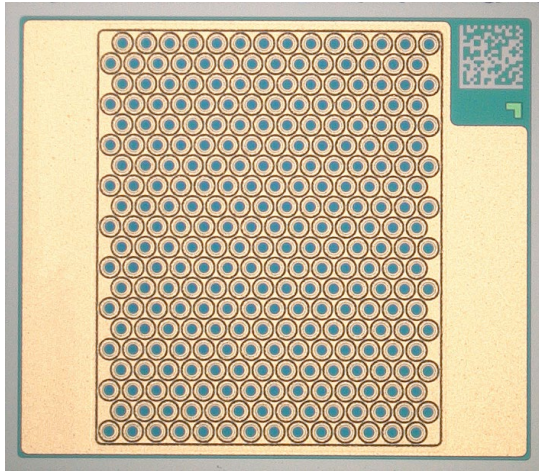
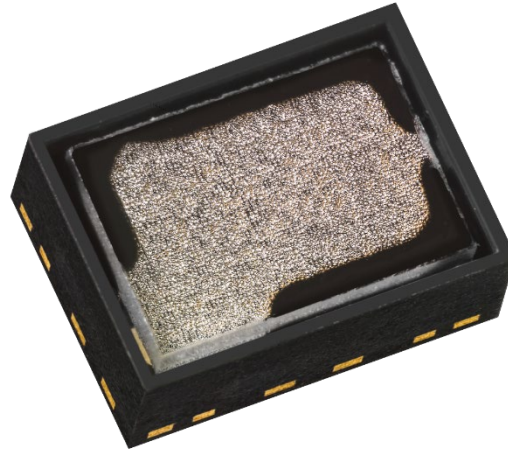
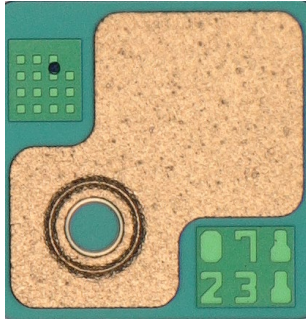
Solid State Scanning Through Addressability

- Addressability of certain area of illumination allows to create “solid state scanning” (no moving parts) for automotive LIDAR



Addressable Array

Some II-VI Illumination Products



IMI

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