

WAVELENGTHS ON DEMAND

Vexlum – VECSELS for Quantum Technology

Jussi-Pekka Penttinen

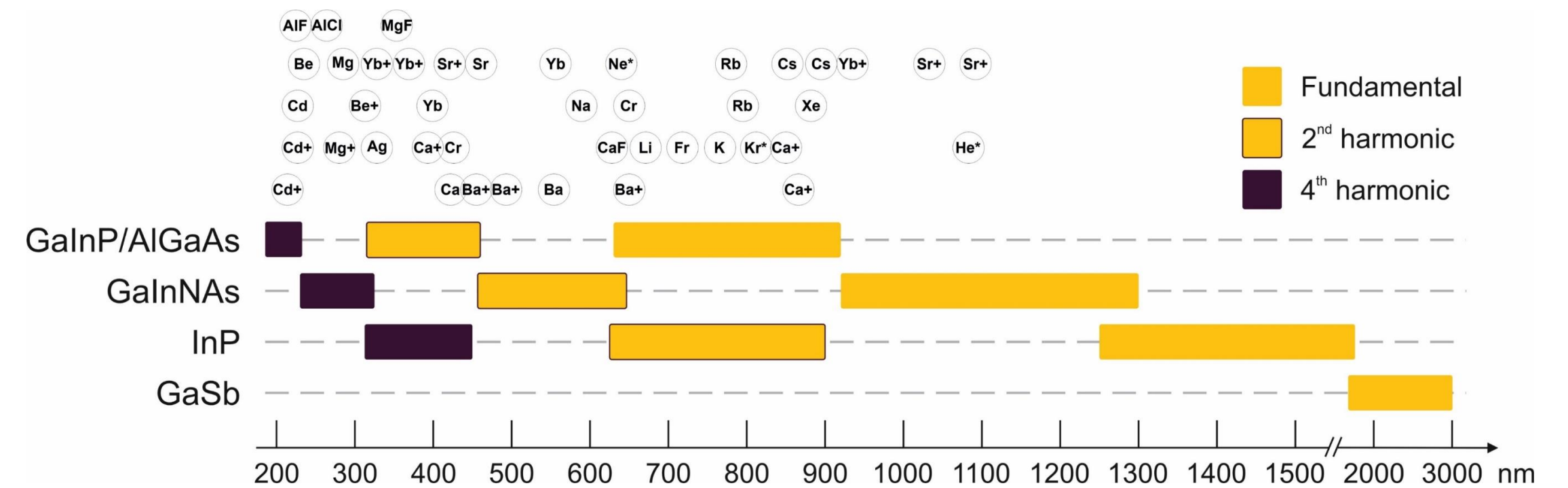
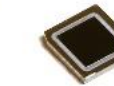
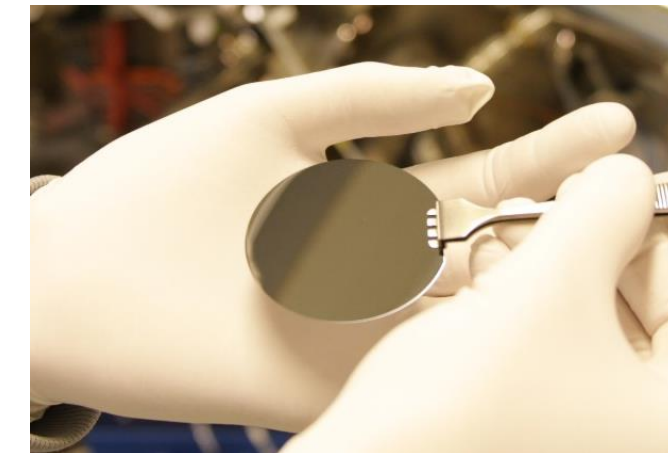
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VEXLUM

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VEXLUM

- **Semiconductor laser (VECSEL) company** located in Tampere Finland, subsidiary in Colorado US
- 2017 spin-off from ORC
- 17 people
- Operating in new 2000 m² factory (8/2022):
 - Epitaxy with Molecular Beam Epitaxy (MBE)
 - Cleanroom processing
 - Laser design and assembly
- Provide laser systems for emerging applications in **Quantum technology (need for versatile CW lasers)**

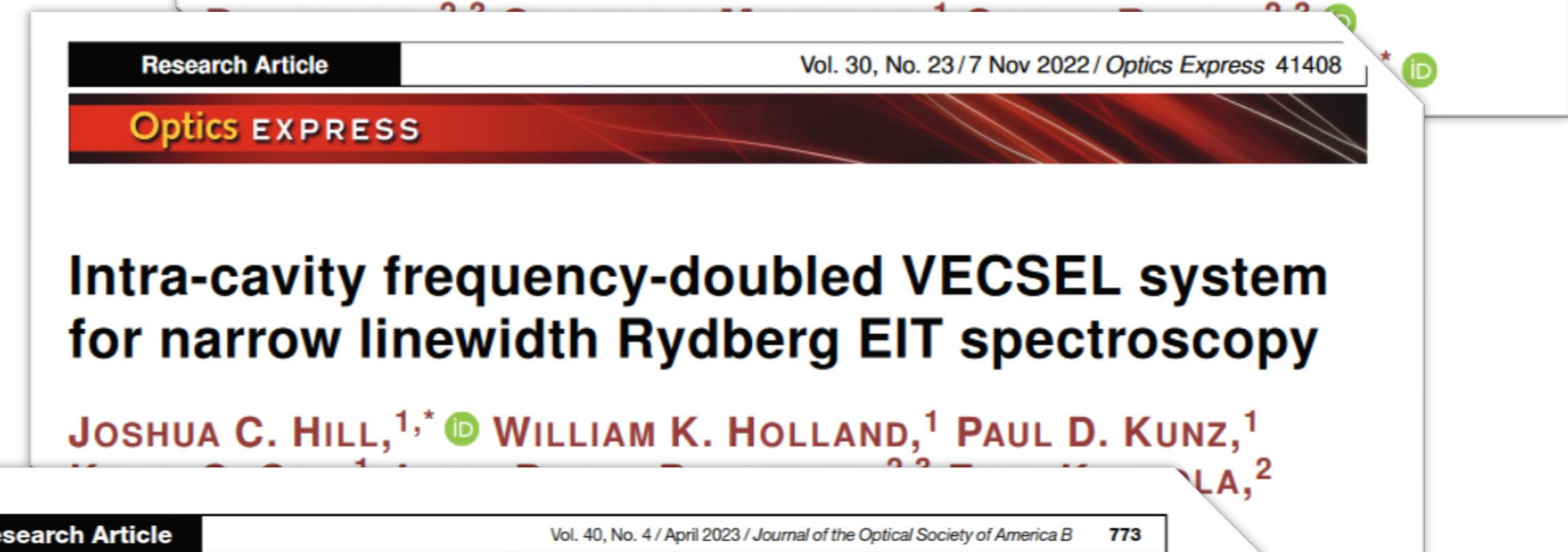
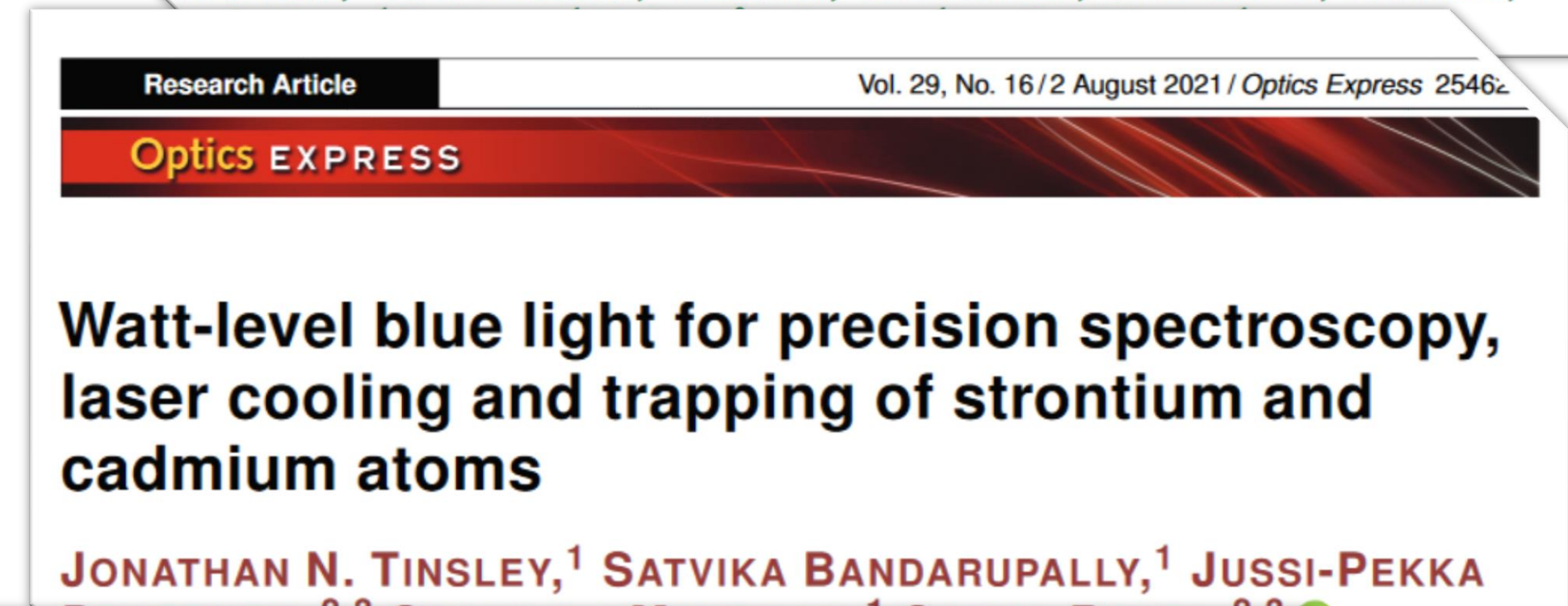
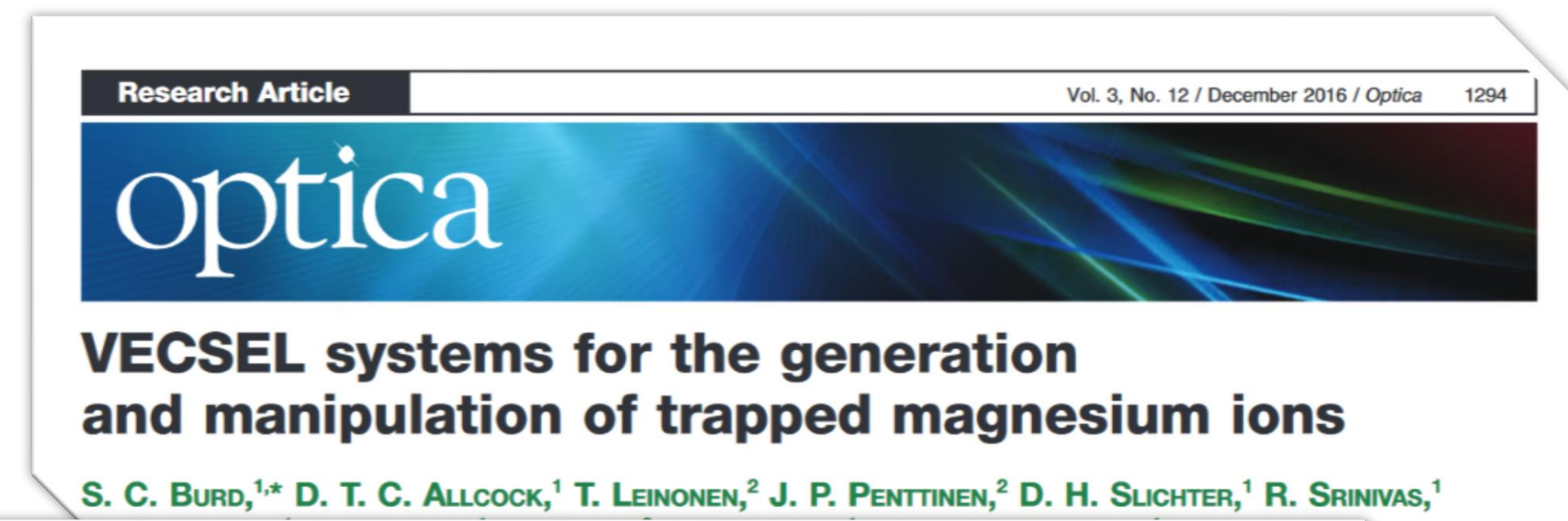
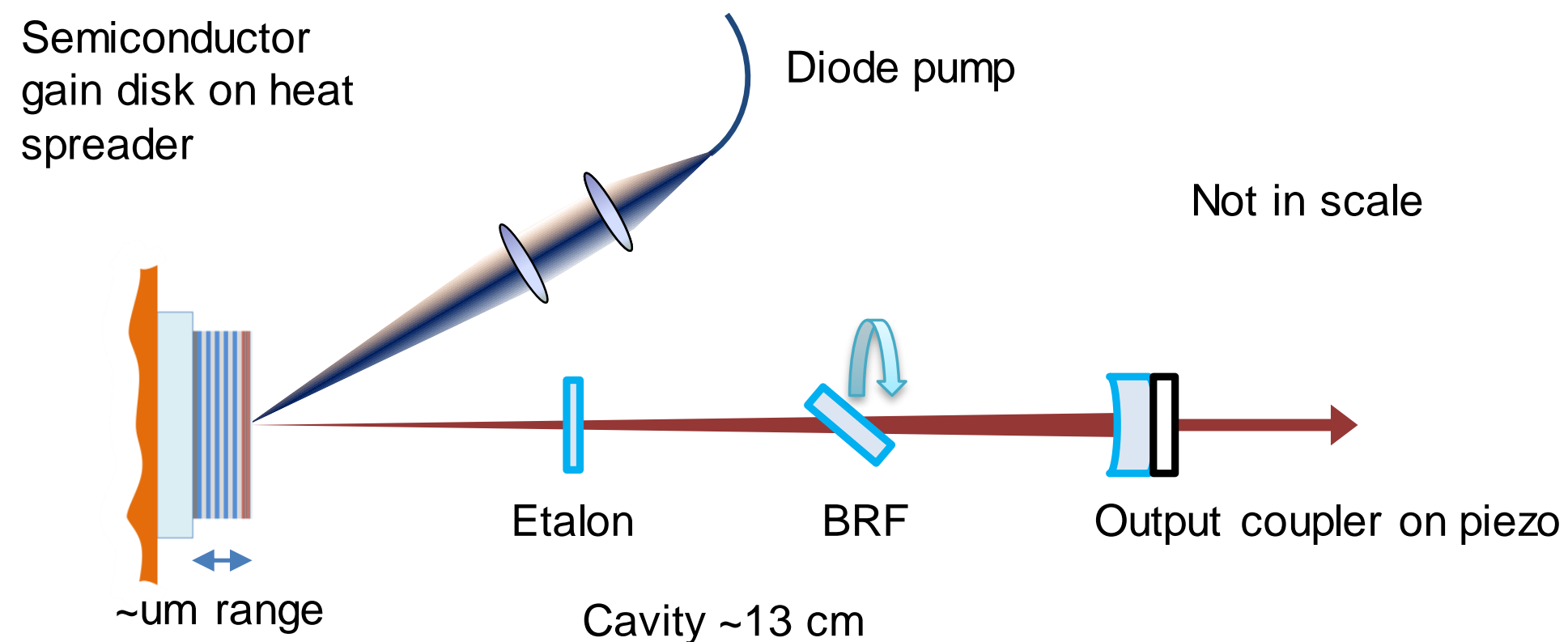


Proven laser technology for Quantum

Vertical-External-Cavity Surface-Emitting Laser (VECSEL)

aka. Optically Pumped Semiconductor Lasers (OPSL)

- Disk shaped surface-emitting semiconductor gain for wavelength versatility and low-noise
- External cavity for excellent beam, high power, wavelength tuning, and intracavity SHG



Products

- **Single-frequency VALO VECSEL platform**
 - Watt-level output power
 - Excellent beam
 - Low noise and narrow linewidth
 - Frequency locking capability
 - Broad wavelength coverage with tunability
 - Direct emitting: **700 – 2150 nm**
 - Intracavity doubled: **350 – 700 nm**
- **New developments for compact industrial VXLs**



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Thank you for your attention!
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