UNIVERSITY OF LATVIA
INSTITUTE OF ATOMIC PHYSICS AND SPECTROSCOPY

Whispering gallery mode silica microsphere resonator applications for biosensing and communications

Inga Brice, Toms Salgals, Vjaceslavs Bobrovs,
Roman Viter, Janis Alnis

NATIONAL DEVELOPMENT PLAN 2020

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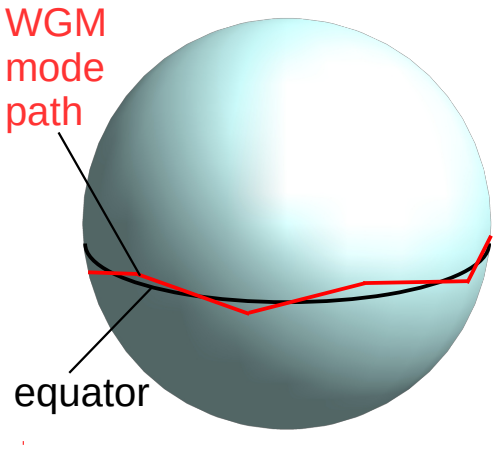
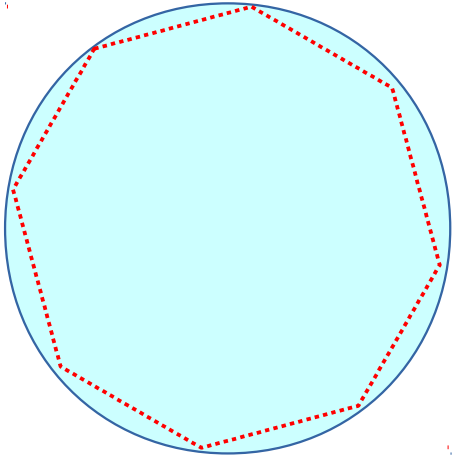
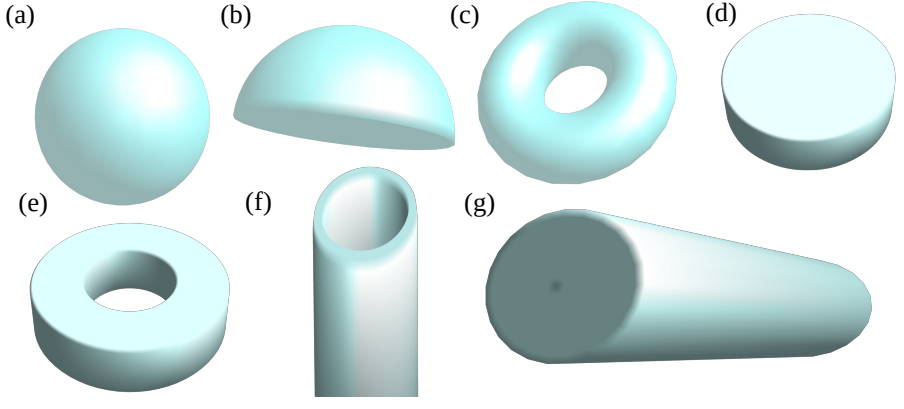
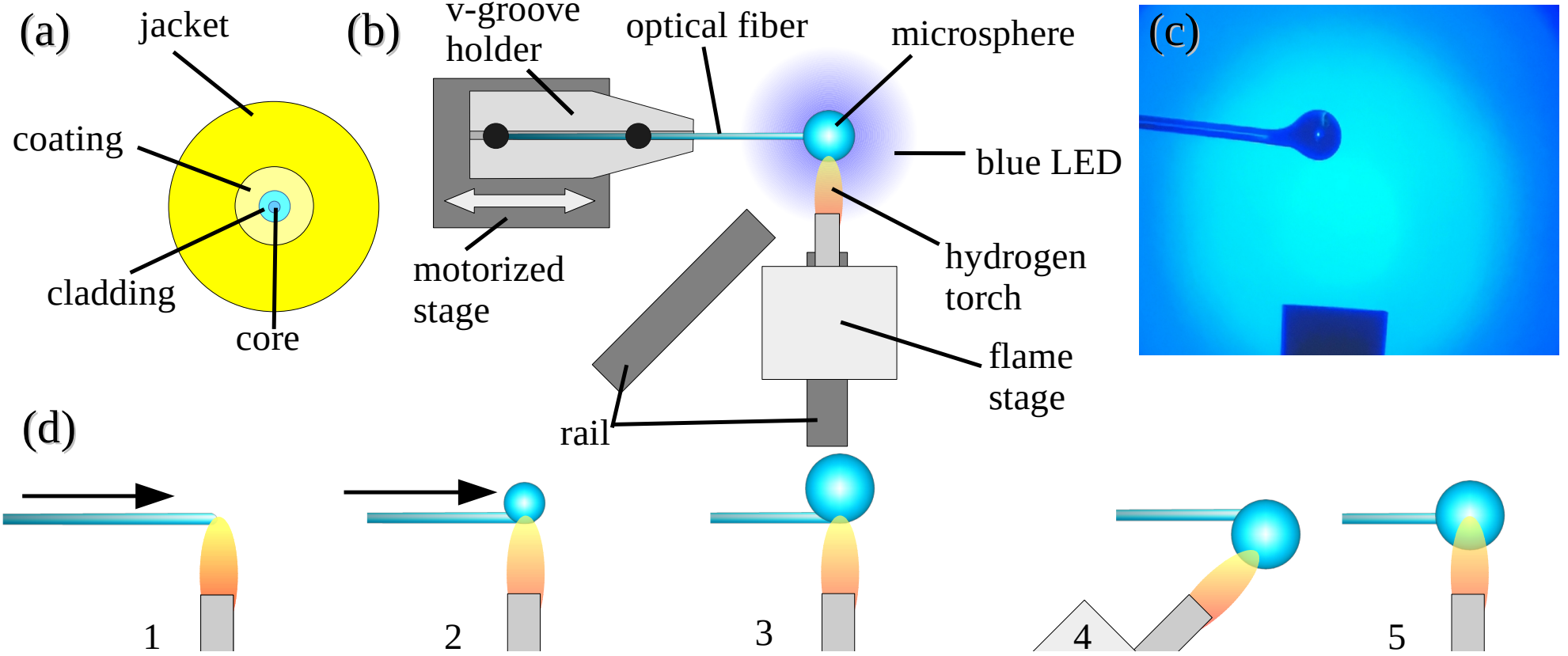
Whispering gallery mode resonators





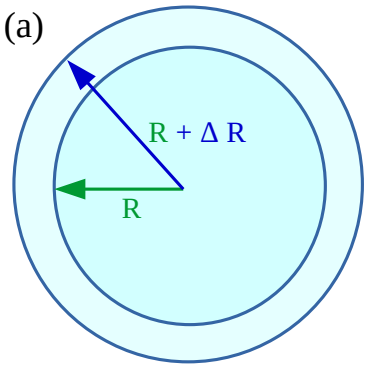


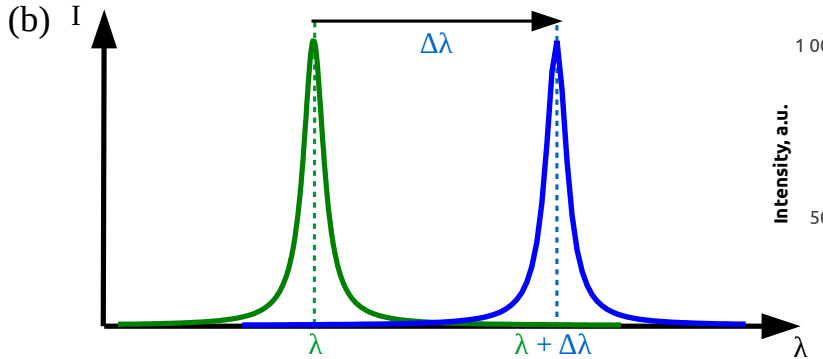
Microsphere fabrication

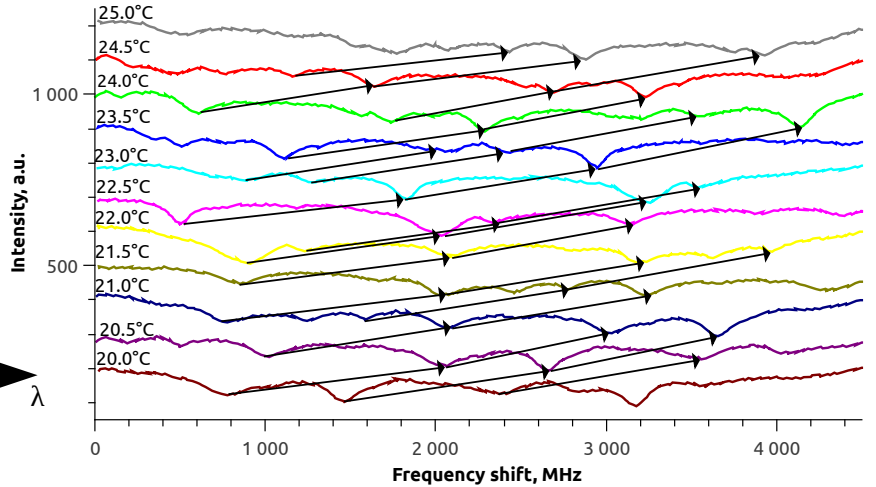


Sensing mechanisms

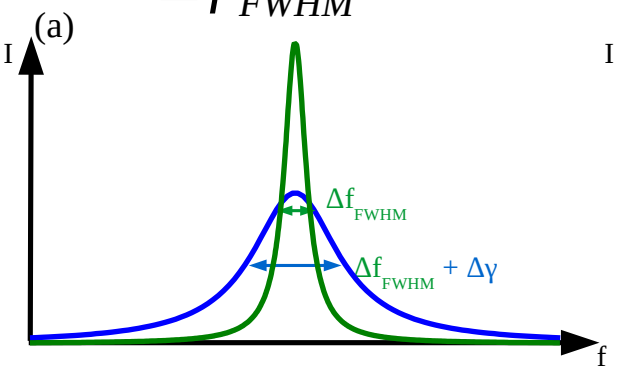
$$2\pi R = \frac{\lambda}{N} l$$

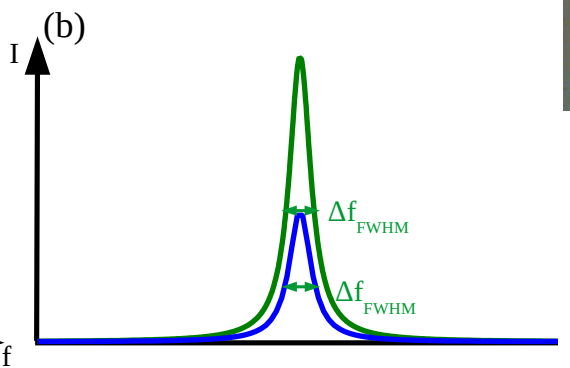


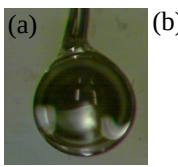


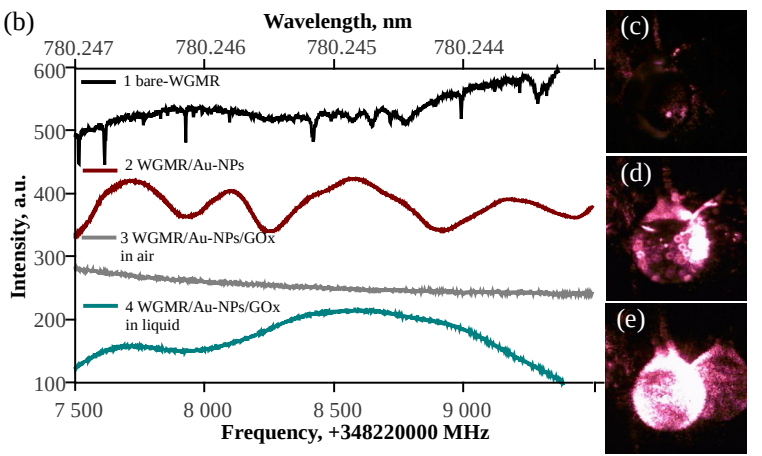


$$Q = \frac{f}{\Delta f_{FWHM}}$$

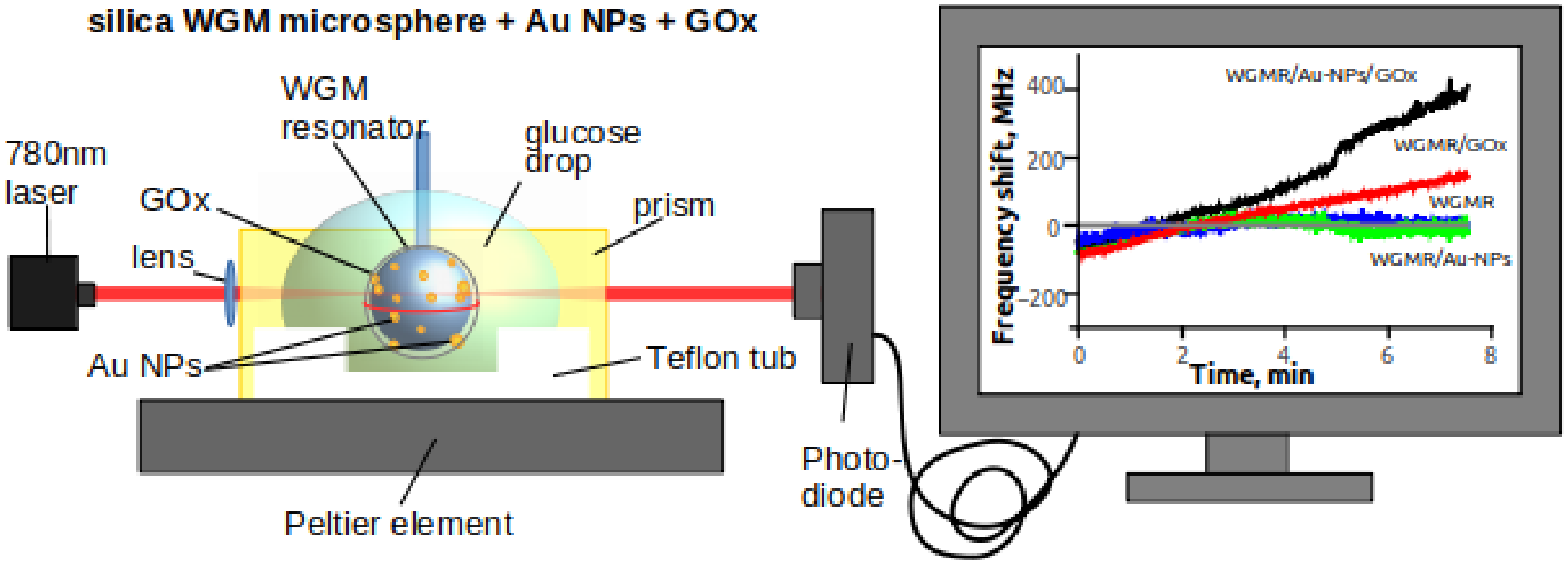








Glucose sensor concept



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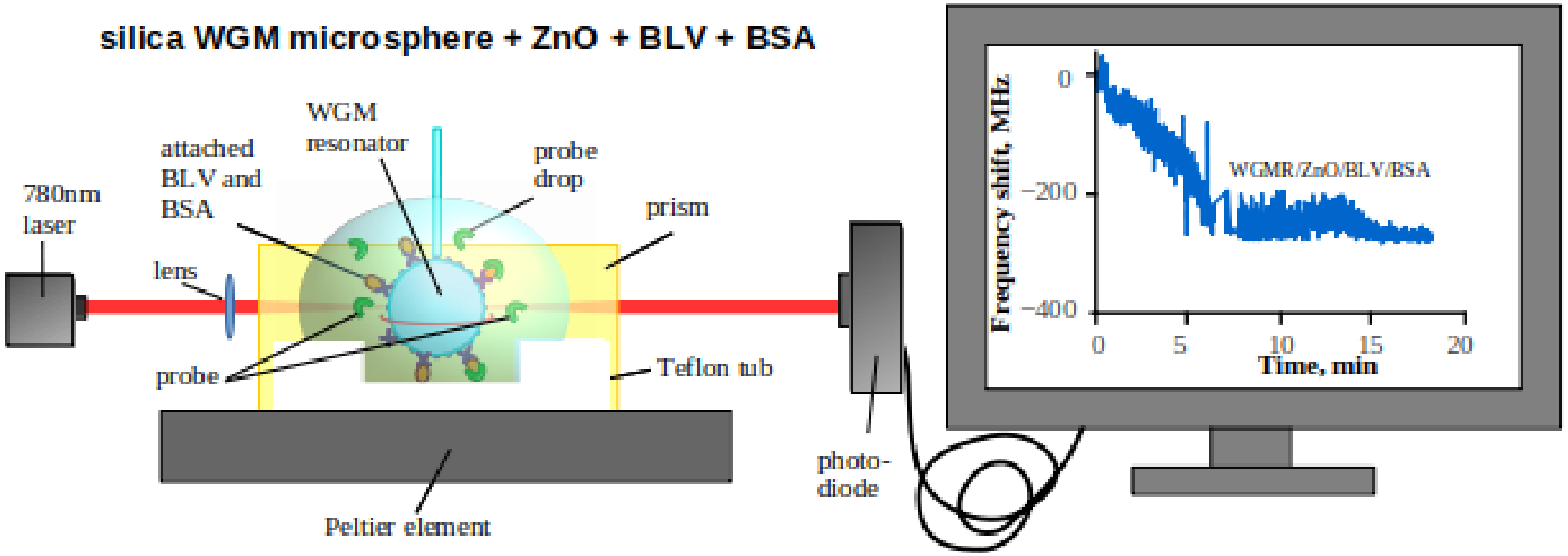
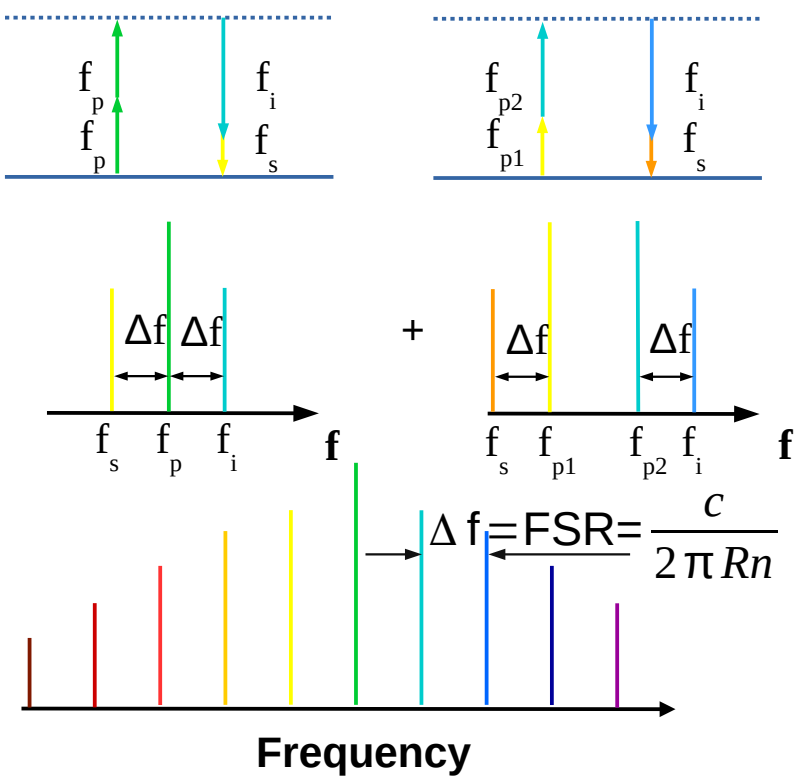
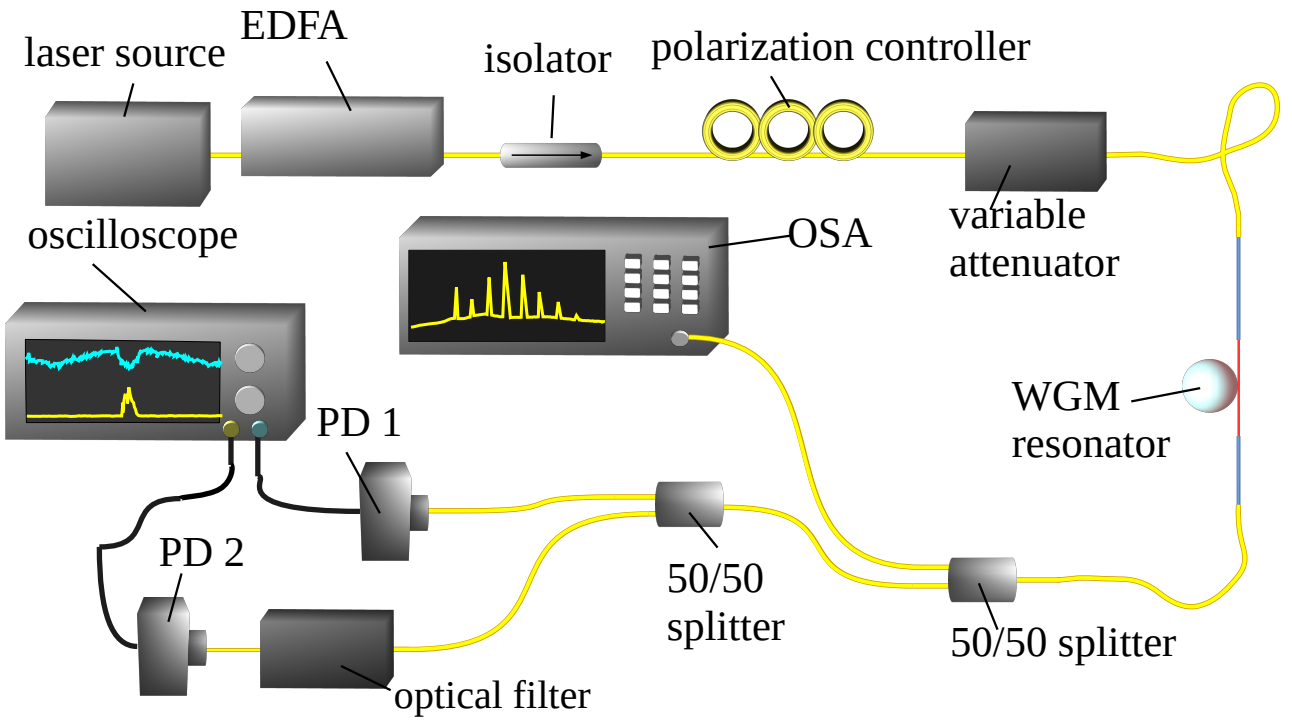
Toxin sensor concept

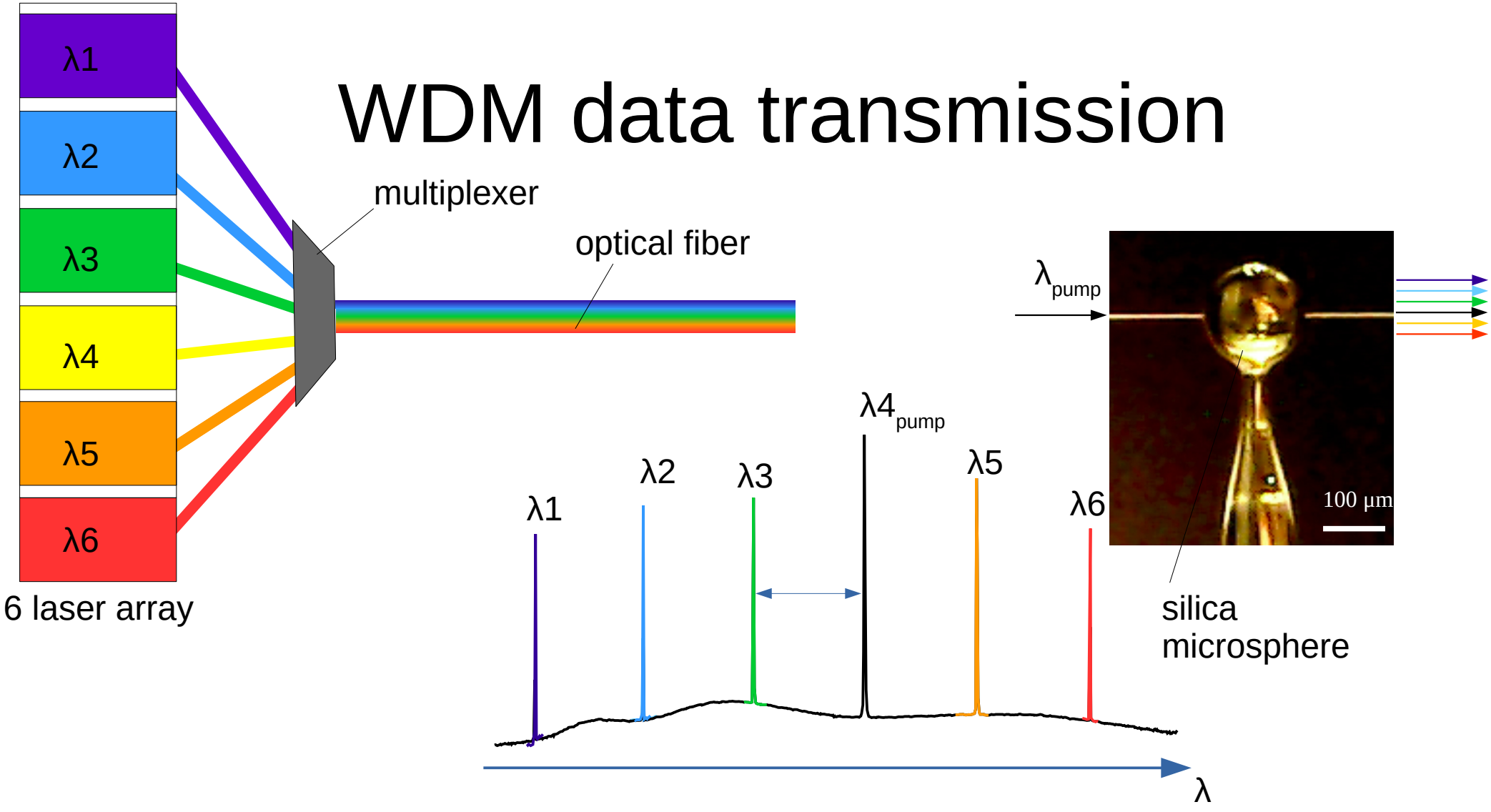


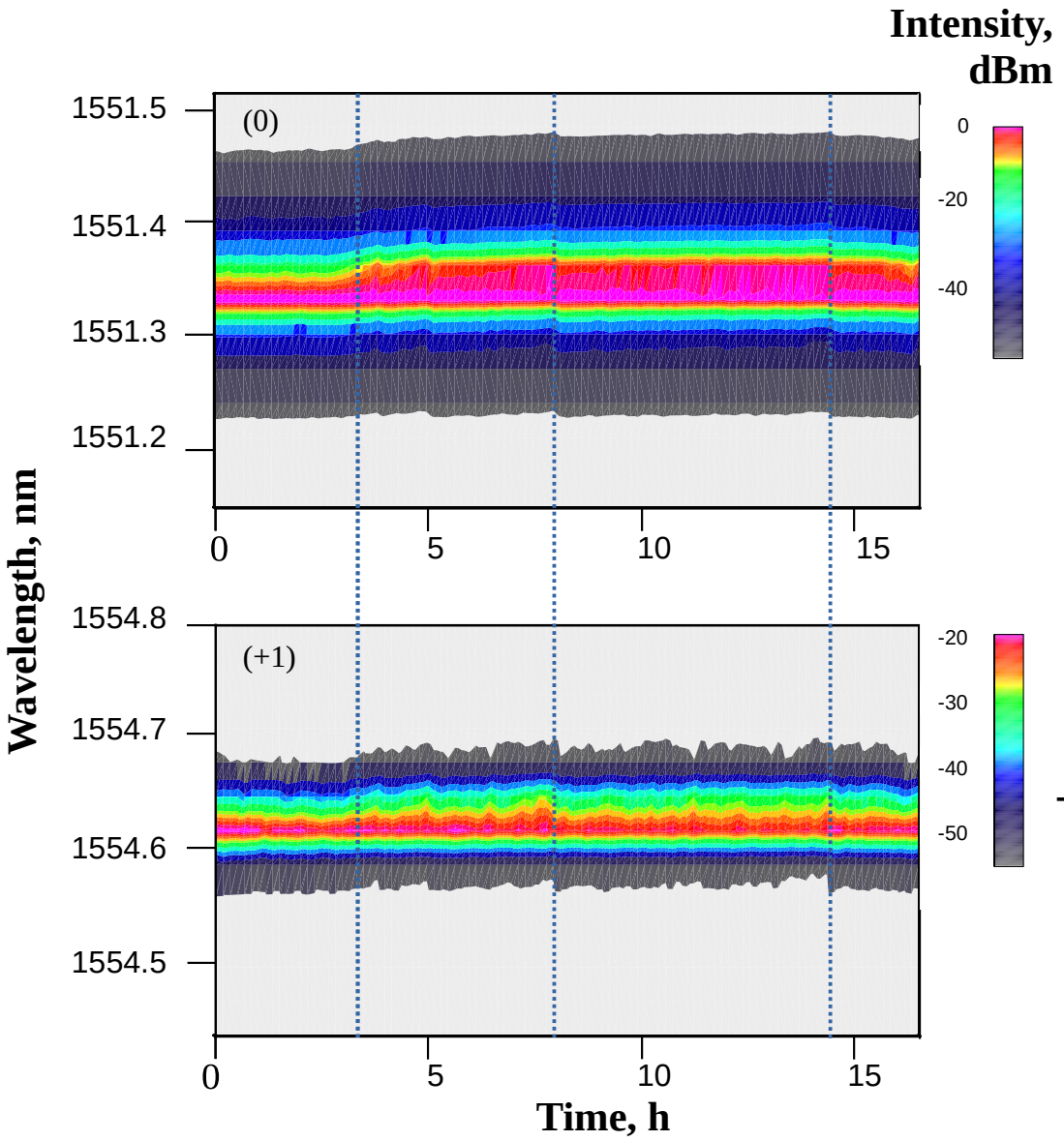
Frequency comb generation in WGM resonators

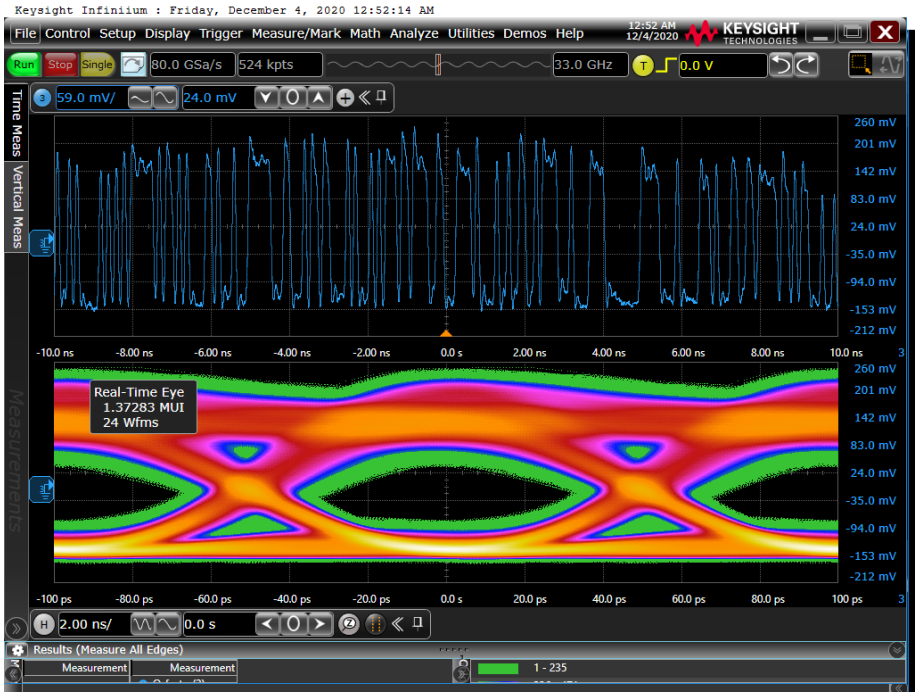




WDM data transmission







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Thank you for attention!

Acknowledgments

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