



79<sup>th</sup>



International  
Scientific  
Conference of  
the University  
of Latvia

# Influence of WGM resonator polishing techniques in frequency comb generation

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NATIONAL  
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PLAN 2020



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# Advantages of this method

- Many possible shapes and sizes
- Higher repeated success rate
- Higher end Q factor

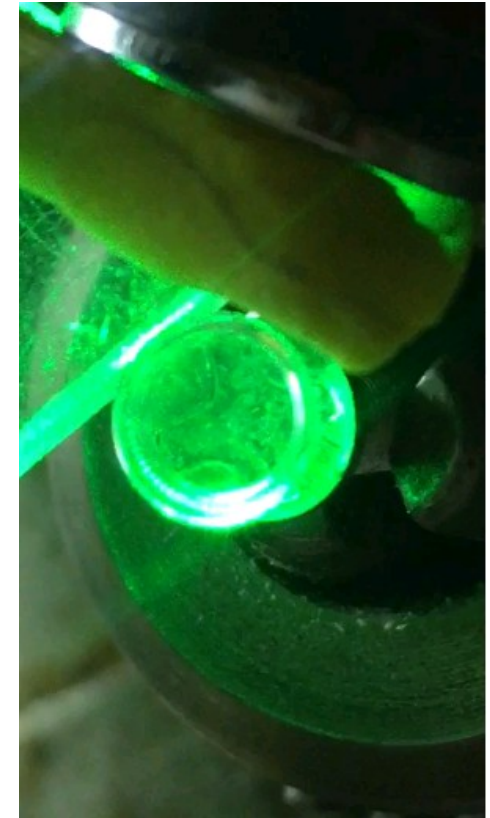
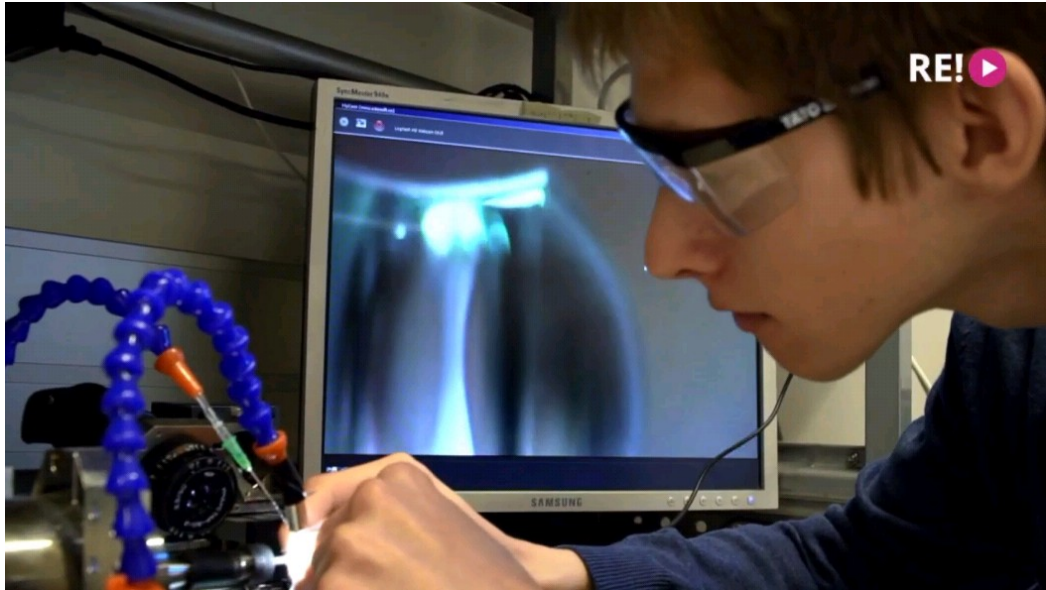


# Choice of material

The desired properties are as follows:

- Relatively cheap and accessible
- Easy to cut and having low hardness
- Able to transmit light in the laser's wavelength

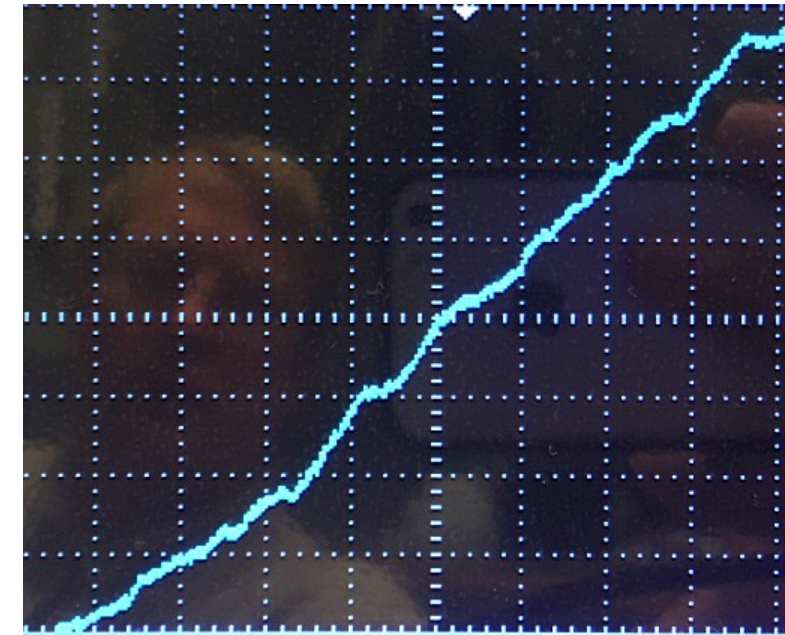
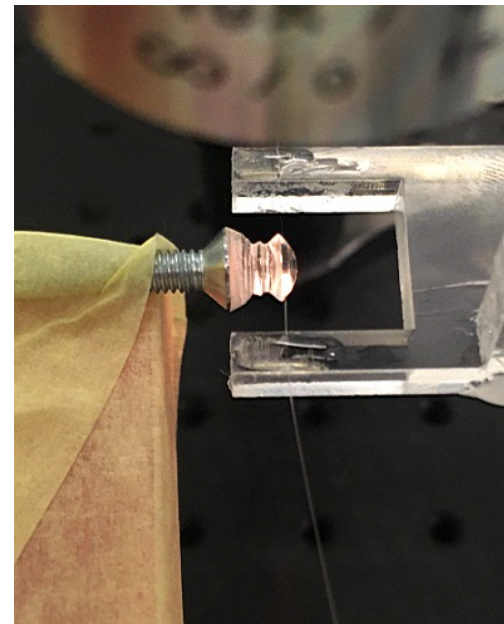
# Sandpaper technique



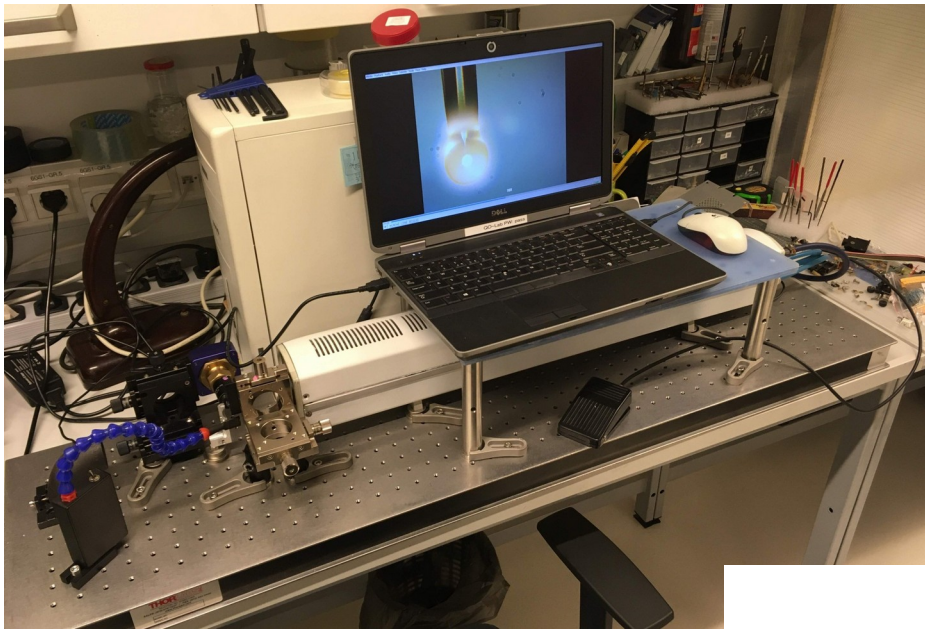
# Example of poor polishing



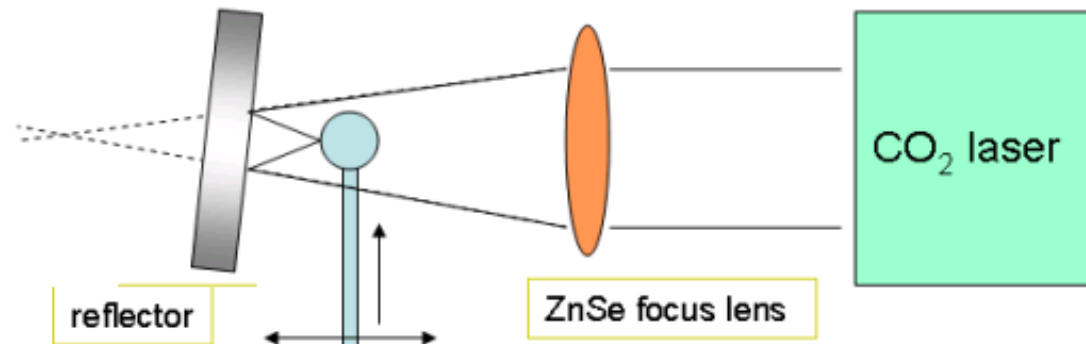
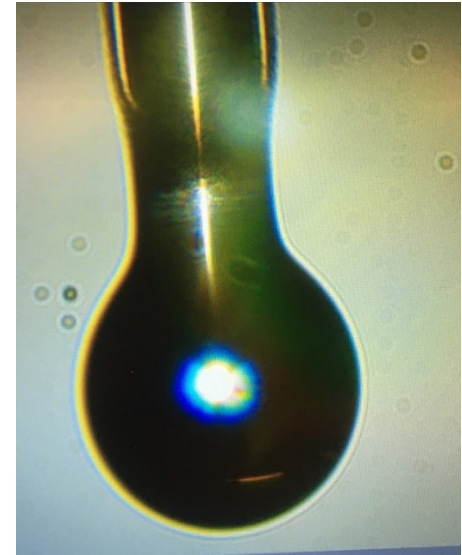
# Desired results



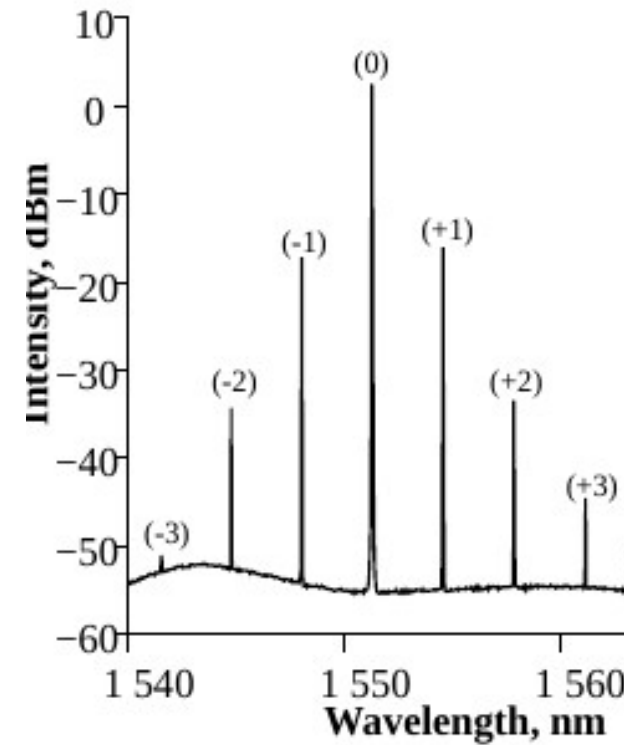
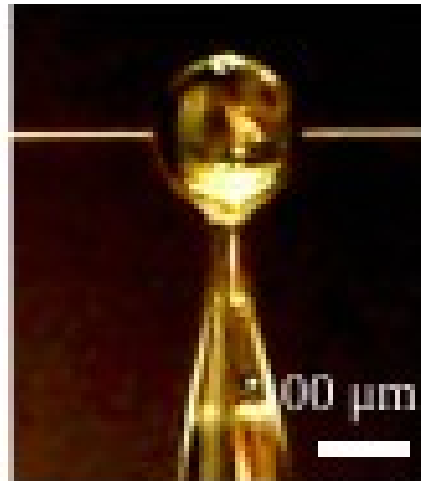
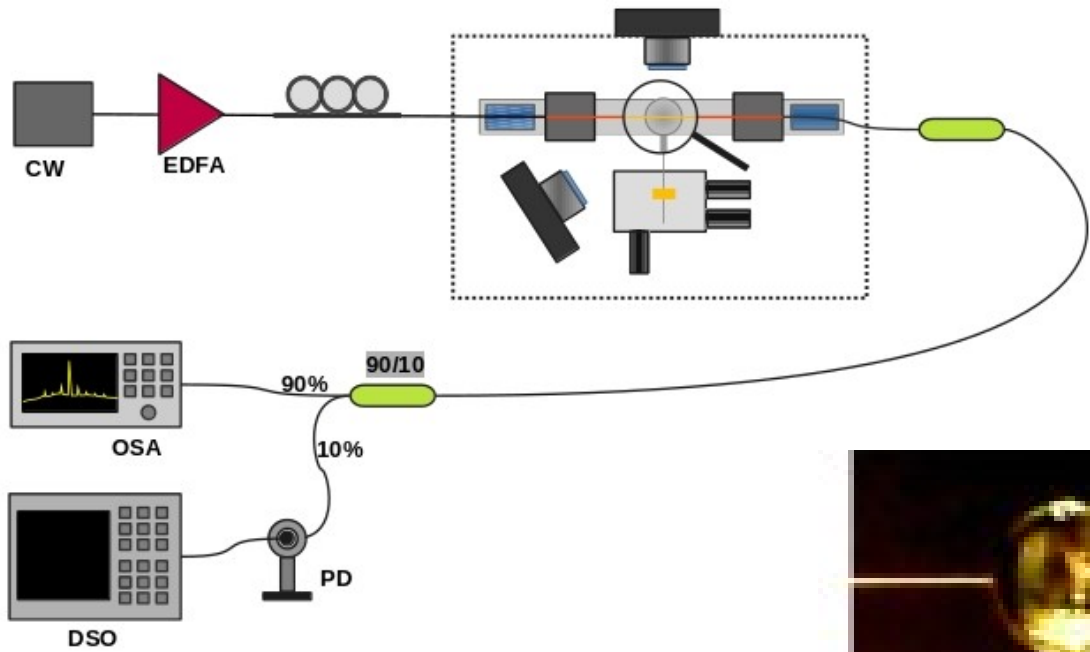
# CO<sub>2</sub> laser melting



$$Q = 2 \cdot 10^8$$



# Results - comb generation





**Paldies par uzmanību!**



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