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Laser material processing using Mid-IR fiber lasers

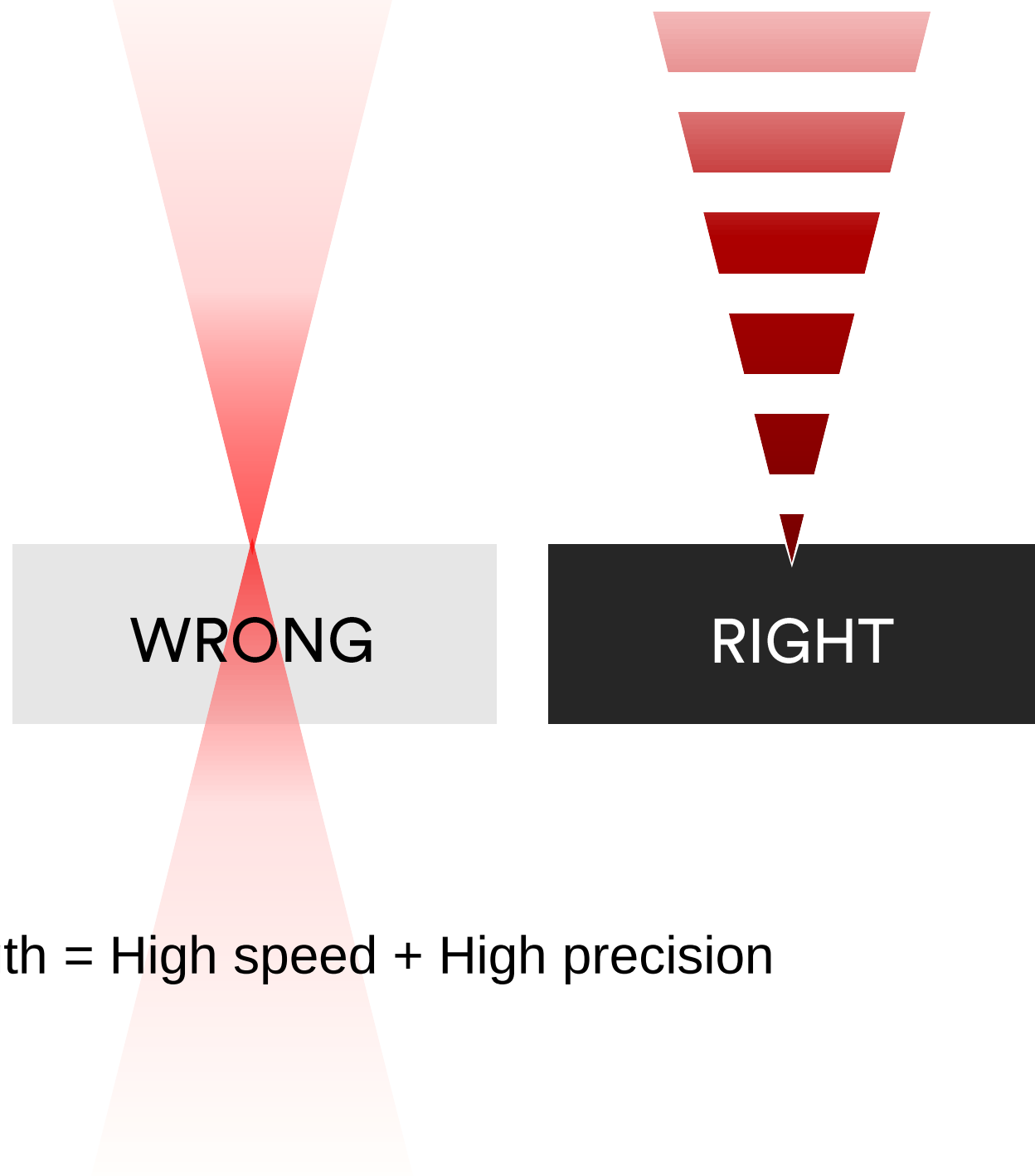
EPIC Online Technology Meeting on
Mid-IR Technologies for Industrial Manufacturing
(in cooperation with MidIR Alliance)

July 14, 2021

Louis-Rafaël Robichaud, CEO

Most critical parameters for laser processing of non-metals?

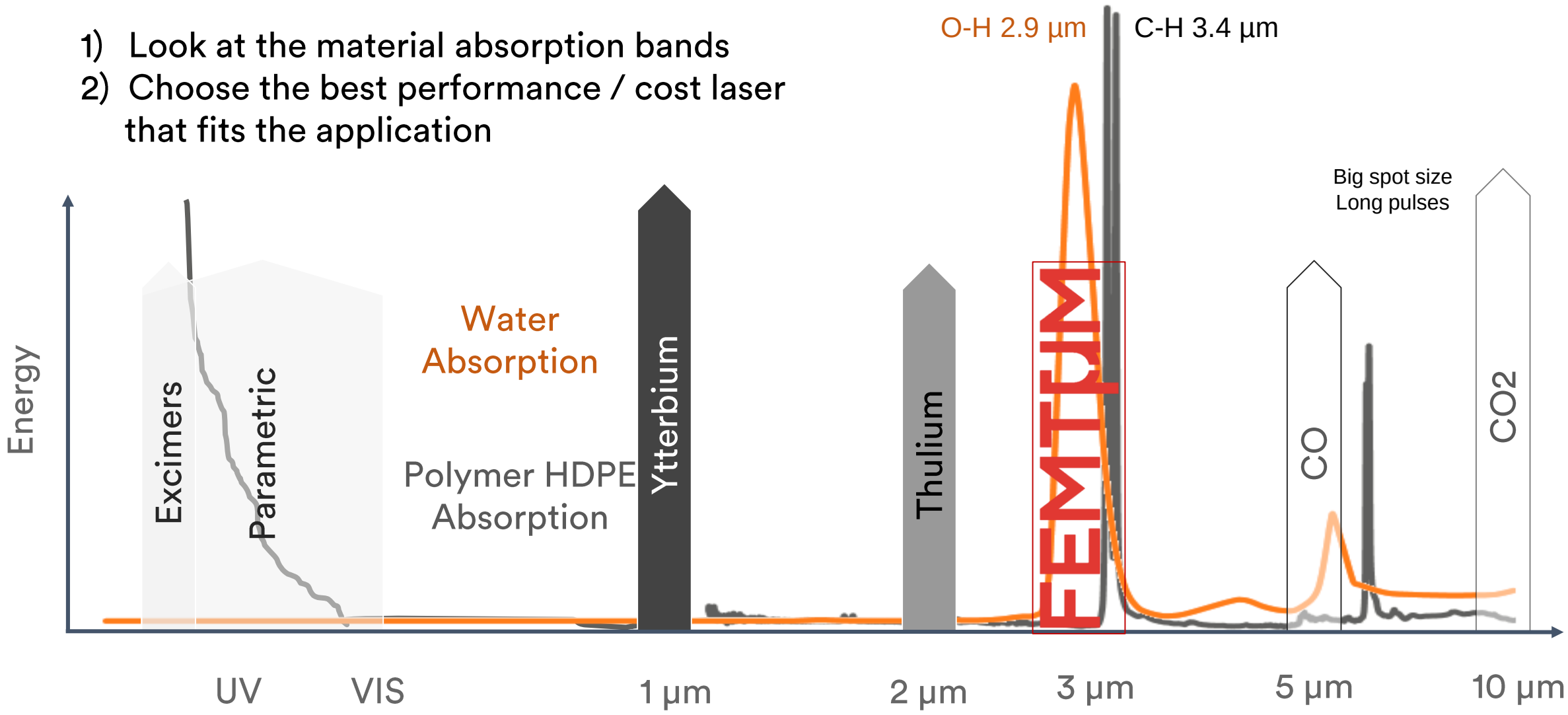
Wavelength
Energy / Power
Temporal regime



Right Short pulse + Right wavelength = High speed + High precision

Choosing the right laser / material fit

1) Look at the material absorption bands
2) Choose the best performance / cost laser that fits the application



Femtum UltraTune 3400

Tunable 2800-3400 nm

Self-starting <200 fs

Works with almost all polymers

Single-mode fiber delivery

Rack-mount 19 in

Air-cooled

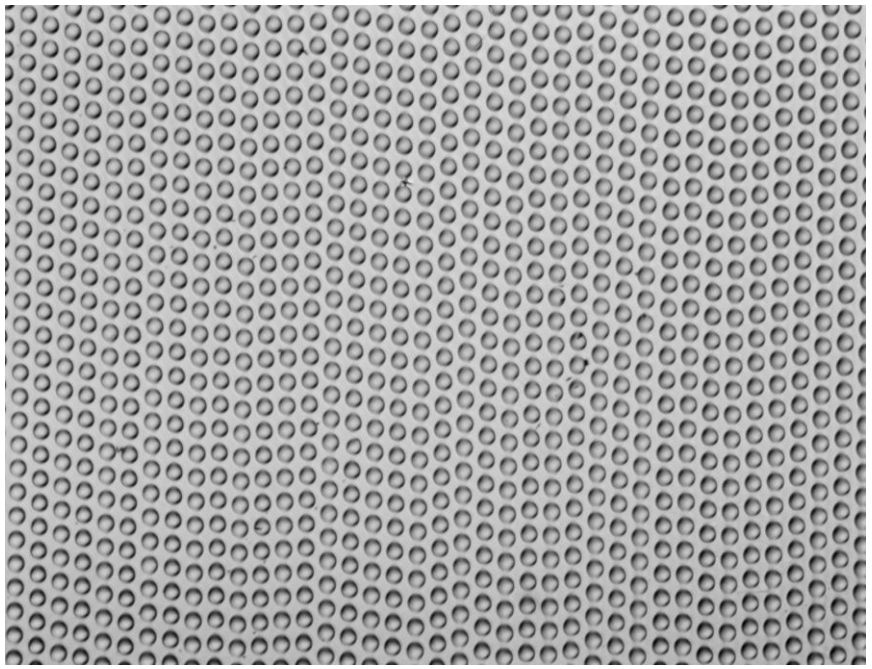
Femtum Nano 2800

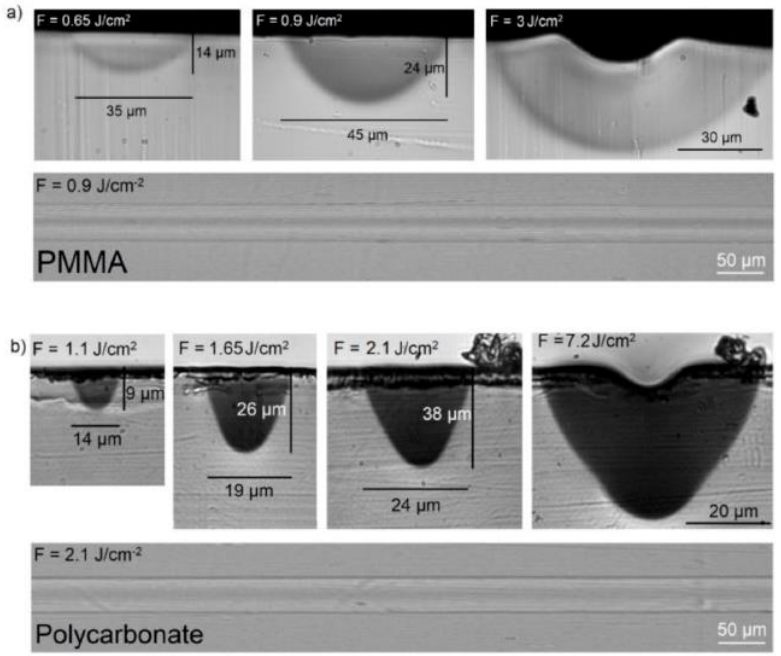
2800 nm

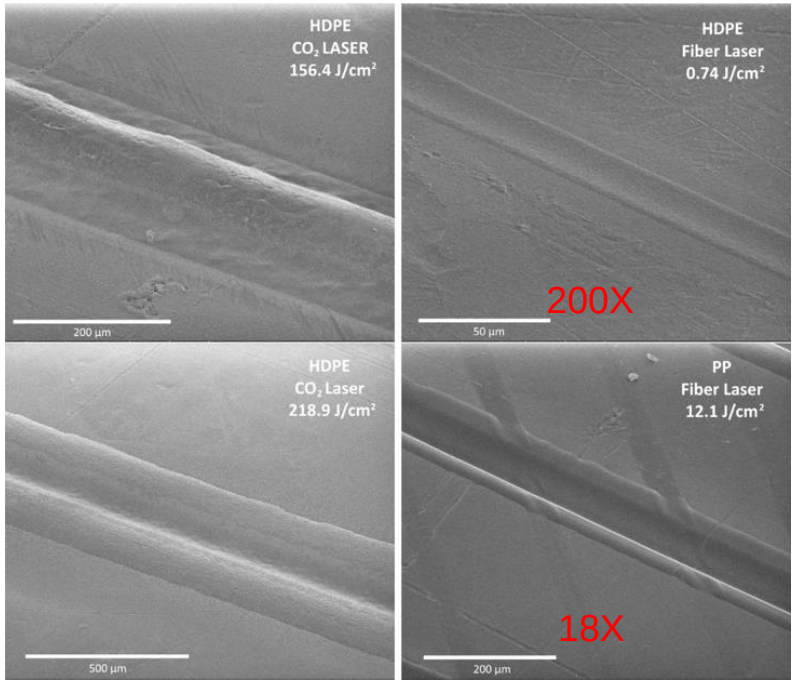
<60 µJ <50 ns 5 kHz

<25 µJ <200 ns 50 kHz

Polymer processing capabilities in the mid-IR





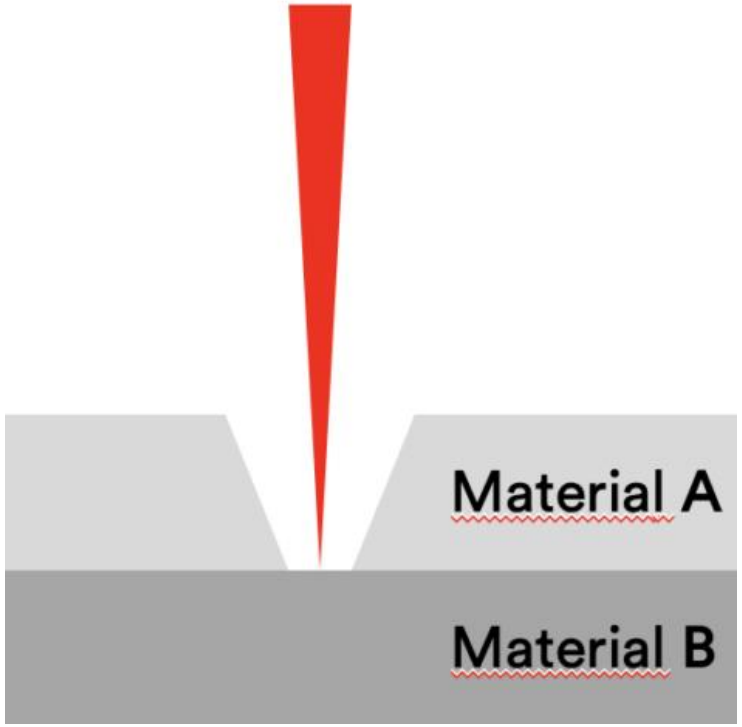


Micro-bumping / texturing

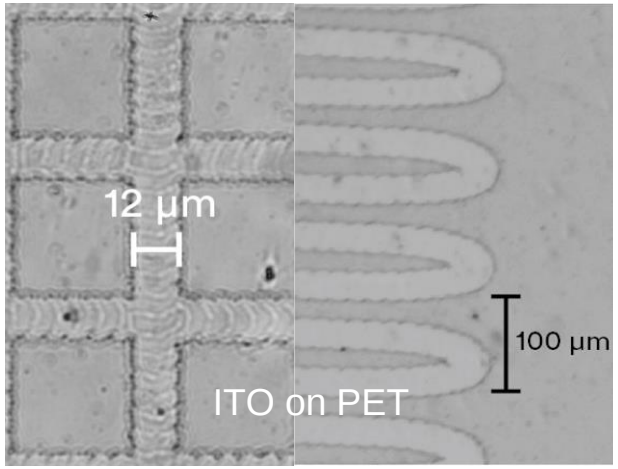
Waveguide inscription

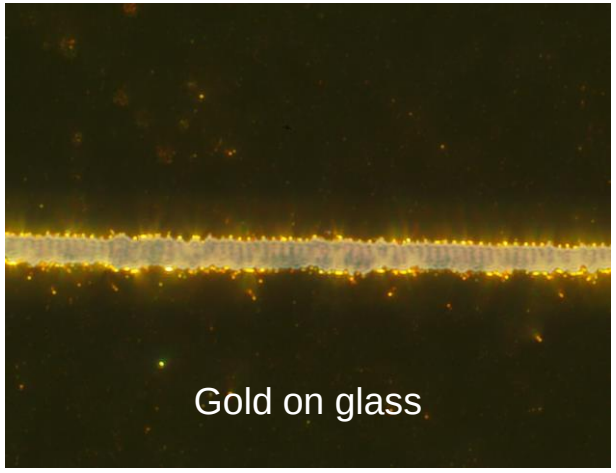
Ablation

Selective laser processing

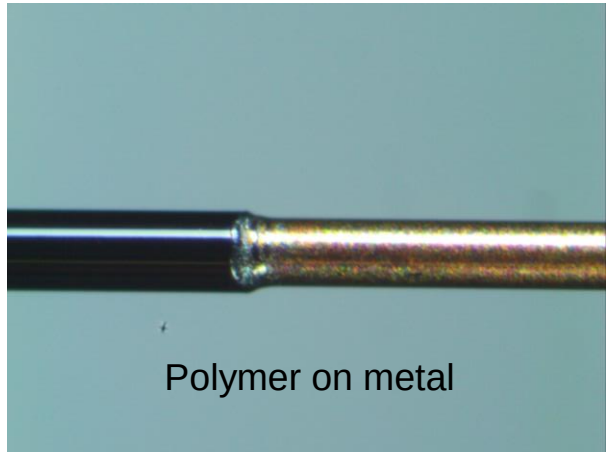


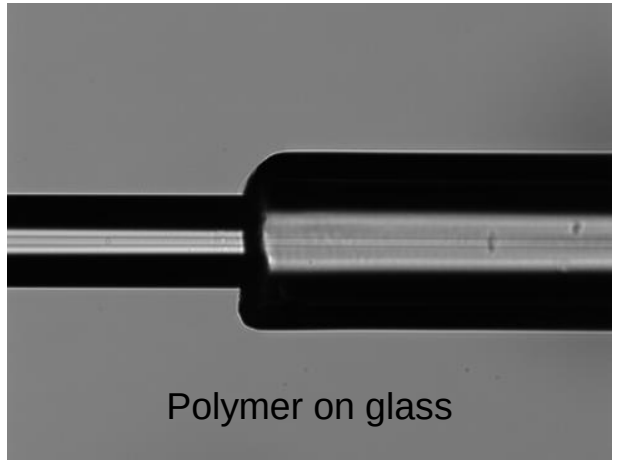
Thin-Film patterning



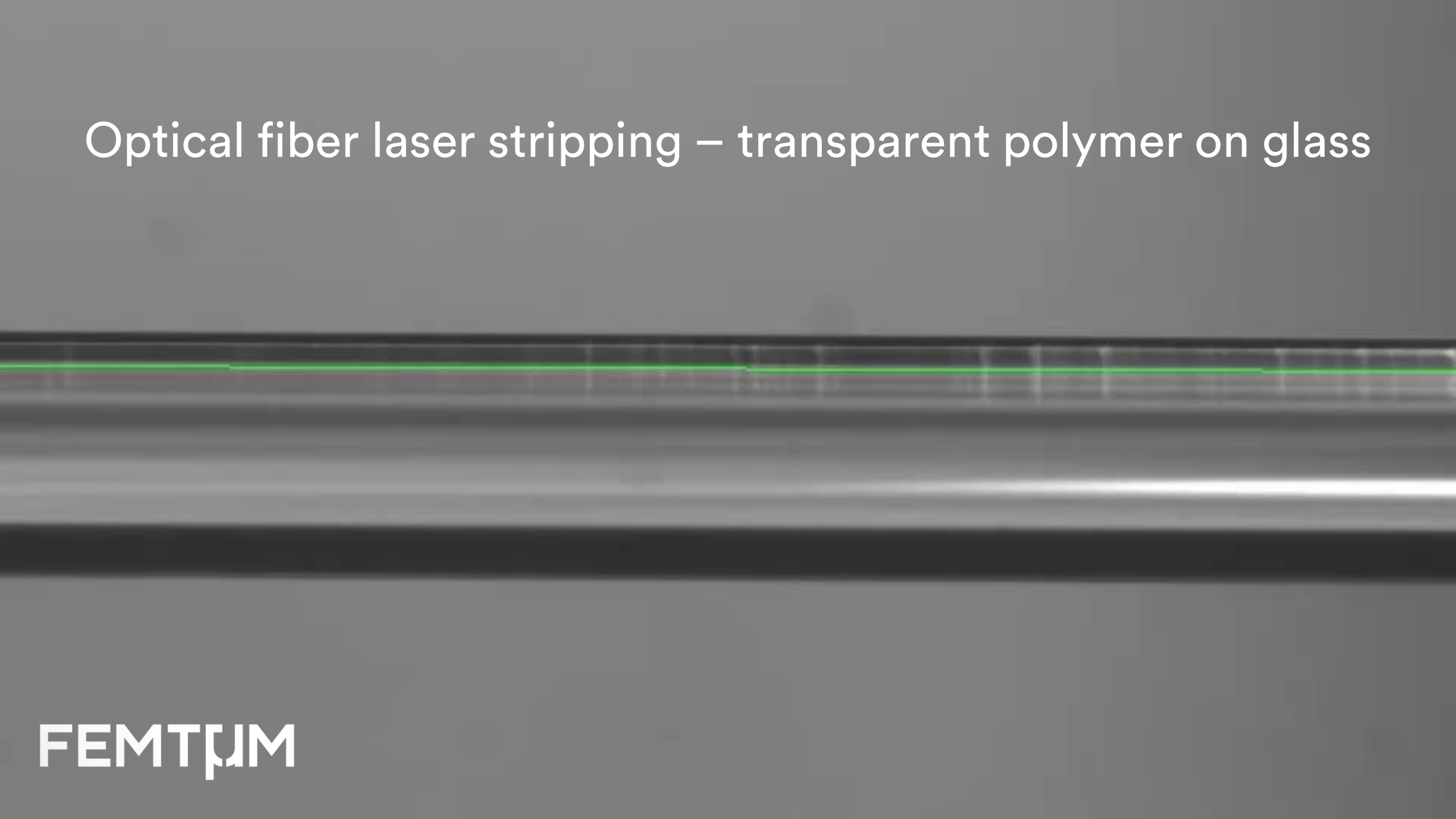


Wire / Fiber stripping





Optical fiber laser stripping – transparent polymer on glass



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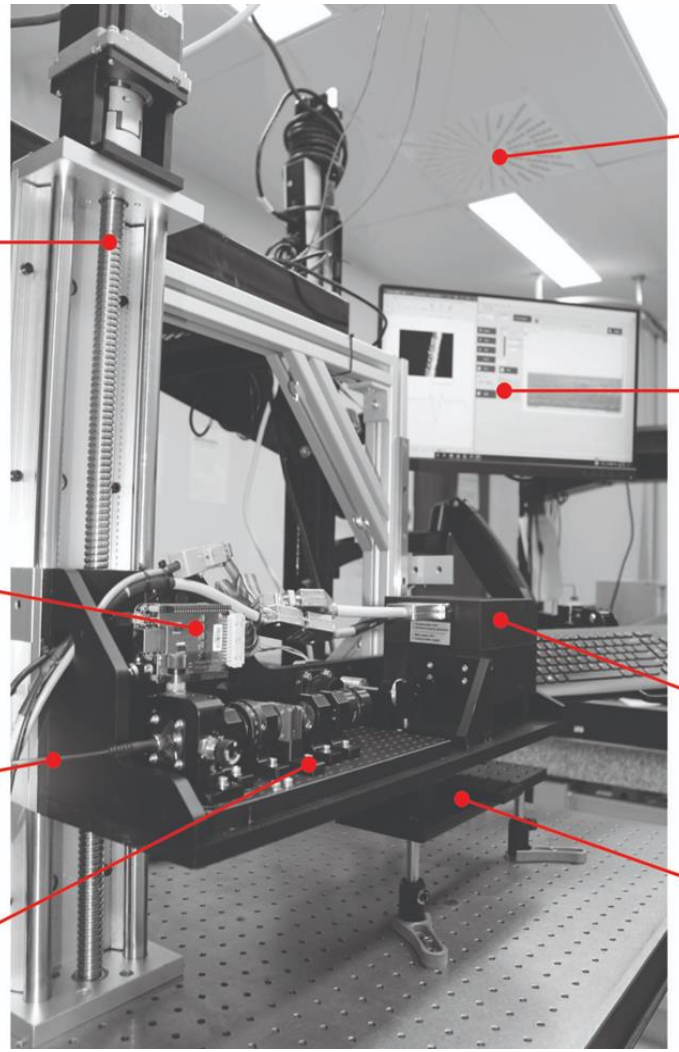
Limited with your processing applications ?



Send us your sample for a demo

Contact us at:
www.femtum.com