UV Raman Spectroscopy for Explosives Detection

E. Gallo, C. Kölbl, A. Walter, A. Köhntopp, F. Duschek

DLR Lampoldshausen, Institute of Technical Physics

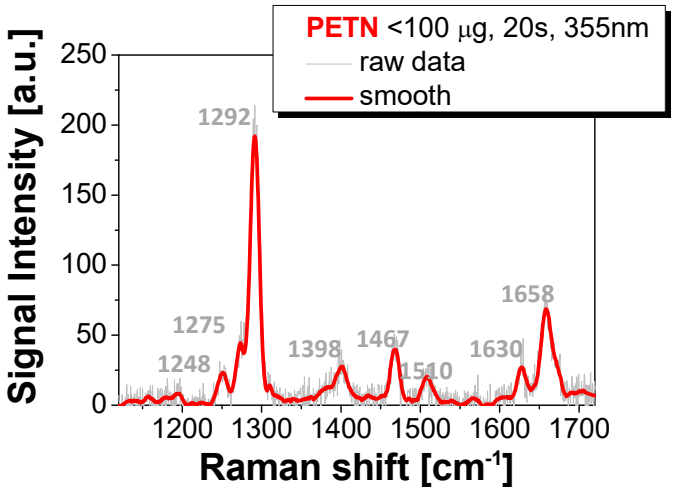
W. Schweikert, F. Schnürer

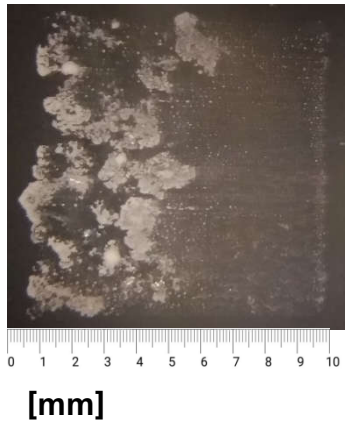
Fraunhofer Institute for Chemical Technology

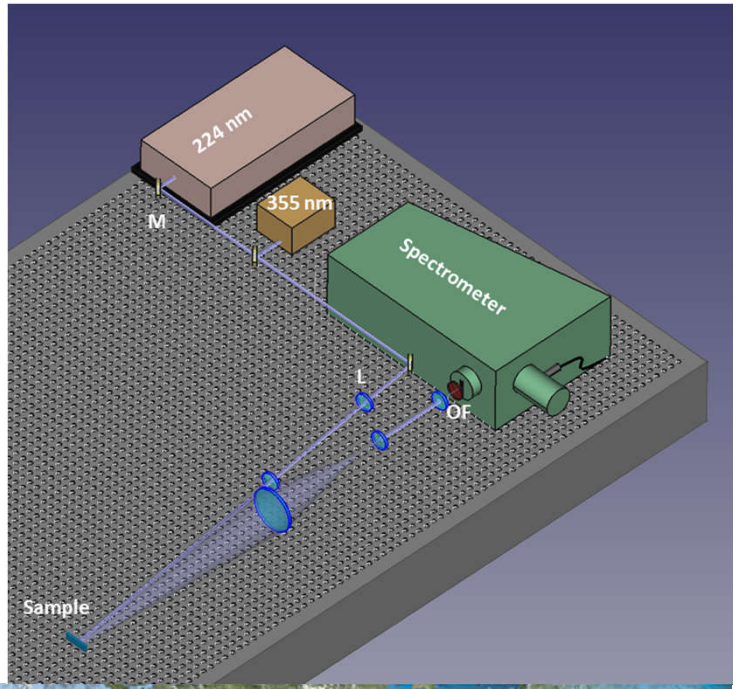
DLR

Objective:

- UV Raman spectroscopy to probe explosive materials
- To investigate the detection limits of **explosive traces** (fingerprints)
- To identify explosive materials at a **safe distance** on samples (~1m)







Findings:

- µg traces of RDX and PETN successfully tested and identified
- Few seconds acquisition time range

Future developments:

- Find the optimum excitation wavelength for later applications (i.e. miniaturization)
- Test different surfaces, inhomogeneous contamination, low concentrations
- Eye safe range

Poster: DET-16