

## Chalcogenide thin films for integrated optics

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### Abstract

Because of their transparency in the infrared, their high refractive index, their low phonon energy and their well-known photosensitivity properties, interest in chalcogenide glasses for integrated optics and technological applications in the IR spectral domain has been growing during the past few years. Our present work is focused on the possibility of integrating chalcogenide glasses in components for : (i) environmental metrology with the realisation of an optochemical sensor based on chalcogenide rib ARROW waveguides ; (ii) spatial interferometry with the realisation of waveguides working in far infrared and (iii) optical amplification with the realisation of active waveguides. The advancement of our work in these various fields will be presented : deposition by RF sputtering and characterisation of thin films doped or not with rare earth ions, realisation and optical characterisation of the waveguides (active or not).

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