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## Crystalline oxides for mirror coatings

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Reflective coatings on mirror bodies are key elements of gravitational wave detectors and are a topic of intense research in the community. Two classes of coatings are currently studied namely a broad range of amorphous compounds and a few crystalline materials. The latter group consists of AlGaAs / GaAs and AlGaP / GaP.

In this presentation, the potential of crystalline oxides coatings is explored. Considering the many crystalline oxide substrates that are commercially available in high quality grade, it is clear that several of these can be used to build up optically reflective heterostructures.

A first selection is proposed based on a number of criteria that will be reviewed. These include: i) substrate considerations, ii) structural parameters, iii) solid state chemistry, iv) thermodynamics, v) elastic properties, vi) coating methodology and vii) coating tool design

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