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【54】 Crystalline Mirror Solutions: spinning off high-performance laser optics from fundamental quantum research

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Research on macroscopic quantum phenomena at the University of Vienna has resulted in the development of a new optical coating technology with unprecedented performance. The spin-off company Crystalline Mirror Solutions has taken this technology to the market. In a nutshell, substrate-transferred crystalline coatings allow to exploit the unique properties of single-crystal semiconductor coatings for high-end laser optics applications. They exhibit order of magnitude improvements in mechanical loss (i.e. thermal noise), thermal conductivity, and potentially in absorption losses in the mid-infrared spectral region. Application examples include ultra- stable lasers, optical precision measurements, high-power SESAMs, and high-finesse MIR optical cavities in the fingerprint region for optical trace gas sensing.

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