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# Amorphous GdN buffer-layer-enhanced switching properties of Gd switchable mirrors

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### ABSTRACT

Thin gadolinium nitride (GdN) films deposited on a glass surface may serve as excellent substrates for uniform growth of gadolinium metal layers. We have deposited GdN films on glass substrates at room temperature by Ar/N<sub>2</sub> mixed gas-plasma-radio frequency sputtering method. An improvement of the optical properties and the lifetime of switchable mirrors is obtained by placing a thin GdN buffer layer between the glass substrate and the optically active, rare earth layer. The GdN buffer layer affects the structural properties of the Gd films, and enhances the switching properties of Gd switchable mirrors.

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