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# Induced dichroism in fiber optical resonators with an embedded optically active element

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## Abstract

In this paper we have demonstrated the emergence of an effective circular dichroism for the fundamental mode in fiber resonators of loop and ring types with an optically active element embedded into the loop/ring. Changing the parameters of the resonator, the optically active element, or the wavelength of the incoming field allows one to control the value of the effective dichroism and actually, to increase optical activity of the element. It is shown that these resonators can be used as working elements of all-fiber polarizers for the fundamental mode.

**Keywords:** fiber loop resonator, fiber ring resonator, circular dichroism.

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