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All-optical Systems Based on Volume Holography

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Abstract

Three all-optical systems, including a fiber displacement sensing system, an angular sensing system and a 2D-to-2D pattern transfer system based on holography interconnect are presented. Photorefractive crystals, the volume hologram recorder serves as the database and signal processor in the systems. All the processes include detection of the external signal, signal transfer, signal processing and the display of results are performed by optical means.