

Optical interconnects between silicon chips based on light-emitting diodes on nanostructured silicon

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Abstract: Design and manufacturing technology of optical interconnects between silicon chips have been developed. Structures based on nanosize silicon clusters embedded in an alumina matrix are used as light-emitting diodes and photodetectors. The silicon microchannel plate vias are used as light-guiding channels. An experimental structure is fabricated and characterized with the current conversion efficiency of 0.3%.

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