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Development of Micro-Lens Array For Indoor Optical Wireless Communication

Introduction:
Modulated white light LEDs can be used for simultaneous illumination and communication. This project is to develop a micro-lens array for receiving white light LED signals in indoor optical wireless communication system.

Design:
Material: PDMS
Element: Singlet
Distribution: Square Array (5 X 5)
Size: <1cm²
Thickness: <500 µm

Application:
Besides indoor wireless communication, micro-lens array application also includes:
- Optical interconnects
- Imaging, micro-displays
- Flat panel displays
- Beam shaping
- More…

Fabrication:

Figure 1. System Overview
Figure 2a. Layout and Spot Diagram of Doublet
Figure 2b. Layout and Spot Diagram of Singlet
[The spot size is comparable to doublet]
Figure 3. Fabrication Process