High-performance noncontact thermal diode via asymmetric nanostructures

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Highlights

- A photonic thermal diode based on asymmetric nanostructures is proposed.
- The rectification ratio is higher than that of planar bulks by over 10 times.
- Nanostructures have a higher forward radiative heat flux due to the lower loss.
- The reversed heat flow is inhabited due to smaller cut-off wavevectors.