

# **DIRECTIONAL CHARACTERISTICS OF THERMAL RADIATION EMITTED FROM MICROSTRUCTURED SURFACE**

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**ABSTRACT.** Directional spectral emittance of a microstructured surface (a periodically-grooved surface emitter) made of SiC was estimated through numerical simulation that solved the Maxwell's equations. For a wavelength of  $11.36\mu\text{m}$ , a surface wave traveling in the emitter along the surface was coupled with the free-space electromagnetic wave propagating in the direction predicted from a relationship between emission angle, a wave vector of surface-phonon polaritons, and the groove period. The directional spectral emissivity of a plane emitter is also shown for comparison and verification of the modeling.