

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Manipulation of thermal emission via gold gratings¹ JONES TSZ-KAI WAN, Department of Physics, The Chinese University of Hong Kong — The photon density of states of a structured metallic surface is strongly modified by various plasmonic excitations; as a result, thermal emission of photons can be manipulated through the control of plasmonic excitations. In this work, the author studies the emission properties of gold gratings, and investigates the effects due to the groove depth and periodicity. By systematically increasing the groove depth, the polarization of the emitted photons can be controlled. In addition emission at particular frequencies could be tuned to achieve that of the blackbody radiation limit, whereas the emission in other frequency ranges does not have noticeable changes.

¹This work is supported by RGC-HK (GRF project no. 403308)

Jones Tsz-Kai Wan
Department of Physics, The Chinese University of Hong Kong

Date submitted: 21 Nov 2008

Electronic form version 1.4