Electronic Supplementary Material (ESI) for Nanoscale Advances.

Generation and control of localized THz fields in photoemitted electron plasmas

– SUPPLEMENTARY INFORMATION –

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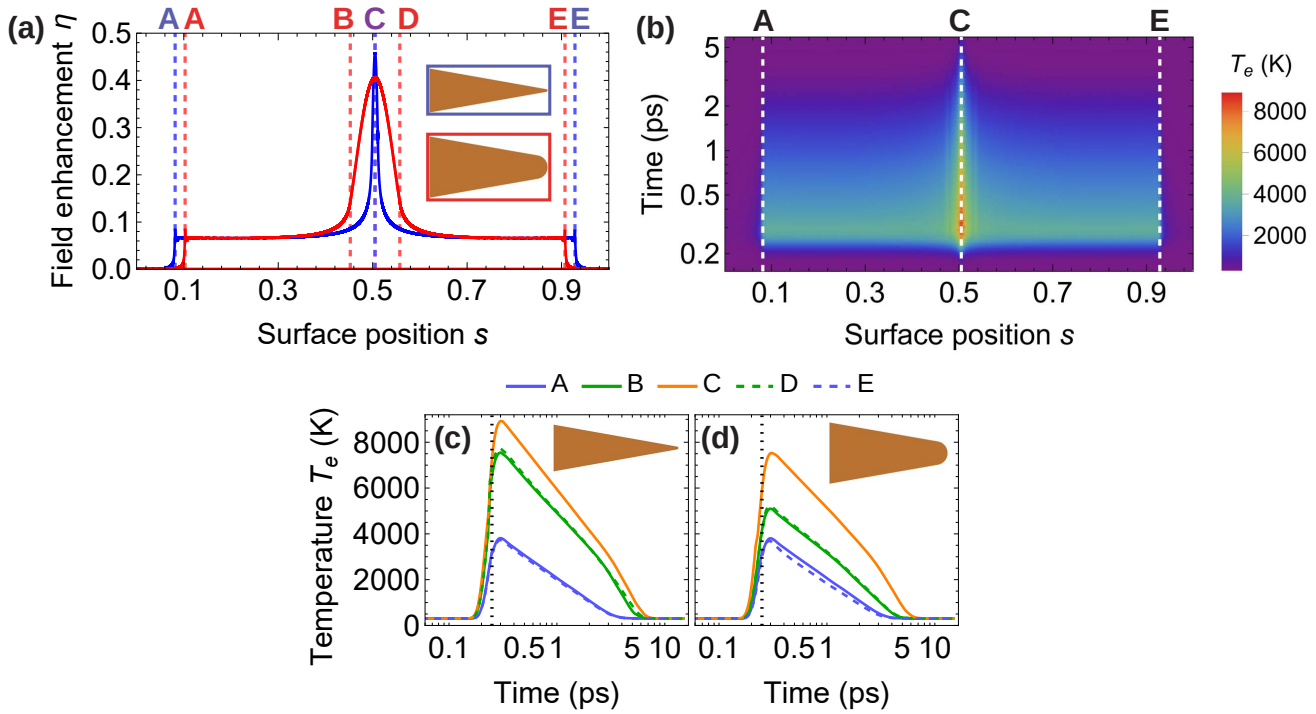

FIG. S1. **Sample temperature dynamics. (a)** Near-field enhancement upon illumination by a light pump beam (incident from the right, see Fig. 1 in the main text), as a function of surface position s for wedges with tip a radius $r = 1$ μm (blue) and 0.1 μm (red). The vertical dashed lines indicate the positions of points A–E along the surface of the wedge in Fig. 1(c). **(b)** Same as Fig. 1(d) in the main text, but for a wedge with tip radius $r = 0.1$ μm and all remaining parameters unchanged. The vertical dashed lines mark the positions of points A, C, and E along the wedge surface, with points B and D omitted, as they lay very close to point C in this geometry. **(c,d)** Temperature profile as a function of time at the positions A–E in the wedges studied in (b) and Fig. 1(d) of the main text, respectively. The dotted black lines in (c,d) represent the time $t_0 = 0.25$ ps of maximum incident pump laser intensity.

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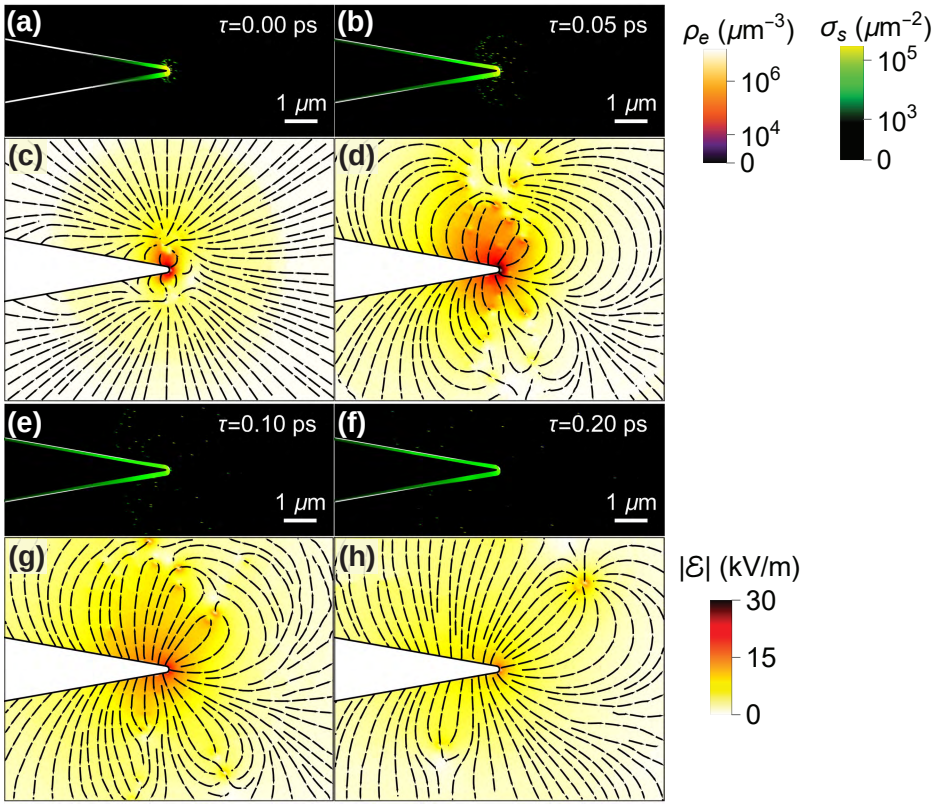

FIG. S2. **Plasma-induced electric field.** Same as Fig. 2(c-j) in the main text, but for a wedge with tip radius $r = 0.1$ μm and all remaining parameters unchanged.

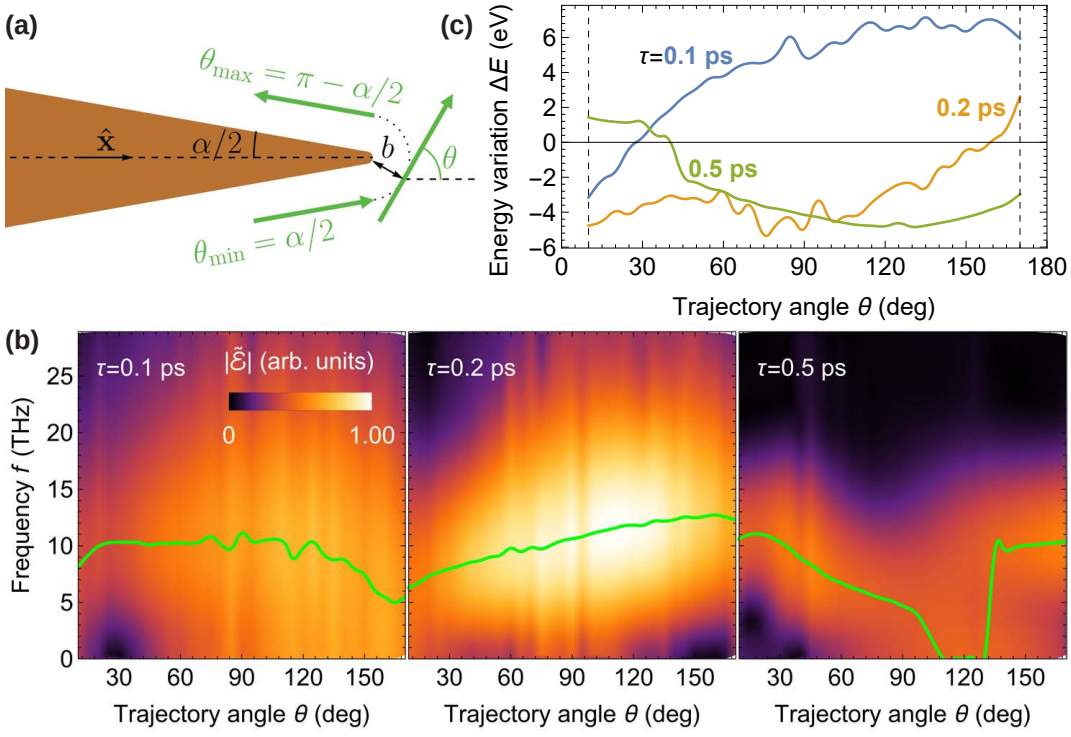

FIG. S3. **Probing THz fields with e-beam pulses.** Same as Fig. 4 in the main text, but for a wedge with tip radius $r = 0.1$ μm and all remaining parameters unchanged.