

Title	Nonlinear Plasmonics
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Abstract	<p>Theoretical and experimental results on laser light-excited nonlinear surface plasmon (SPO) phenomena are reported. Strongly directional light emission of SPOs was indicated and observed already at relatively low cw laser power. The width of this peaked directional distribution seems to depend on the laser power. Another manifestation of nonlinearity was found by observing a weak squeezing effect in the SPO-emitted fundamental light. At high (pulsed) laser intensity an evanescent (SPO) field enhanced second harmonic emission and a broad metallic luminescent spectrum was found. The second harmonic component is spectrally broader than the fundamental SPO-emitted light. Our simple theoretical model describes all of these observations qualitatively, except for the broad luminescent spectrum.</p>
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