


Surface Plasmon Amplification of stimulated emission (Ramot)**code:** 11-2011-127[David Jonathan Bergman](#), T.A.U Tel Aviv University, Exact Sciences, School of Physics and Astronomy

We make a step towards quantum nanoplasmonics: surface plasmon fields of a nanosystem are quantized and their stimulated emission is considered. We introduce a quantum generator for surface plasmon quanta and consider the phenomenon of surface plasmon amplification by stimulated emission of radiation (spaser). Spaser generates temporally coherent high-intensity fields of selected surface plasmon modes that can be strongly localized on the nanoscale, including dark modes that do not couple to far-zone electromagnetic fields. Applications and related phenomena are discussed.

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Additional information can be provided upon request.

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