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Enhanced near-field optical moiré effect. ZHAOWEI LIU, STEPHANE DURANT, HYESOG LEE, YI XIONG, YURI PIKUS, CHENG SUN, XIANG ZHANG — We demonstrated an enhanced near-field optical Moiré effect by inserting a silver slab between two subwavelength gratings. The evanescent fields can be greatly enhanced by the surface plasmon excitation supported by the silver slab, which leads to a remarkable contrast improvement in the Moiré fringes. The crucial role of surface plasmon excitation was elucidated by numerical simulation. Experimental enhanced near-field optical Moiré effect, which agreed very well with the simulation, was also presented. This new effect can be used to extend the conventional Moiré techniques into usage of subwavelength gratings.

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