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## **Influence of a thin metal layer on a beam propagation in a biconical optical fibre taper**

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### **Abstract:**

The paper presents results of a simulation of the plasmon effect achieved between a thin precious metal layer and a biconical optical fibre taper, manufactured on a standard single mode fibre. Gold, silver and titanium were used as a metal which fulfilled a cladding function for a small diameter structure. For simulation Mode Solution software was used on which modal and frequency analyses of a wavelength were provided in the range of 800–1700 nm. A displacement of a plasmon pick in dependence of thickness of a deposited precious layer for the highest plasmon effects was observed.