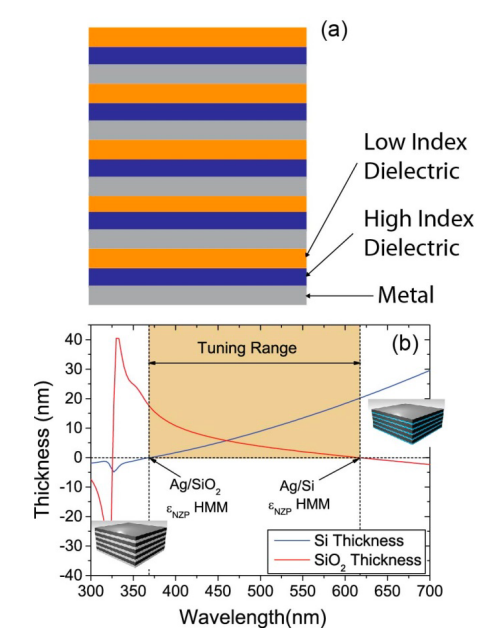


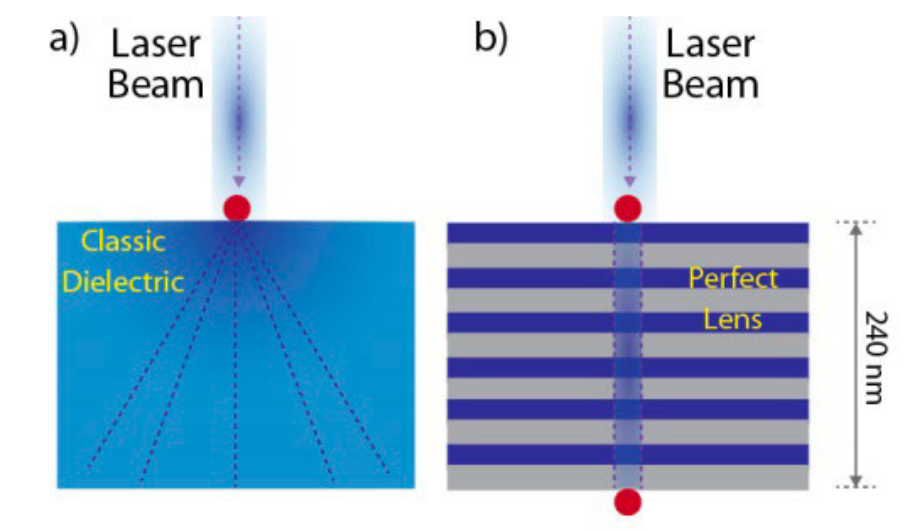


TEHRIS

Tailored Metamaterials for Extremely High-Resolution Imaging and Sensing



Nanoscale metal/dielectric multilayers for enabling super-resolution imaging and sensing at selectable wavelengths in the VIS-NIR range



Main Objectives

Objective 1 - Design, simulation and fabrication of a HMM consisting of three materials

A HMM consisting of three materials constitutes a new concept, which allows to tune the frequency of the singularity that correspond to the working wavelengths for the imaging. The structures are based on layers of: a **high refractive index dielectric**, a **low refractive index dielectric** and a **metal**.

Objective 2 - Demonstration of the perfect lens effect

To confirm the extremely high resolution imaging capability of the HMMs developed in this project, we will fabricate nanoscale structures on their surface by electron-beam lithography, that will constitute the objects to be imaged.

The final objective of TEHRIS will be a proof of concept super-lens working at a tunable wavelength in the visible and NIR spectral range. Such films can be fabricated on surfaces with either micro- or macroscale lateral extension and therefore are extremely versatile for integration in today's mobile systems and common electronics.



UNIVERSITÀ DELLA CALABRIA

ISTITUTO ITALIANO DI TECNOLOGIA

Call: H2020-ATTRACT
Acronym: TEHRIS
Duration: 12 Months
Start Date: May 20th 2019
Estimated Project Cost: € 100.000,00
Requested ATTRACT Consortium: € 100.000,00
Contact: Prof. Antonio De Luca - antonio.deluca@unical.it

ATTRACT Consortium

