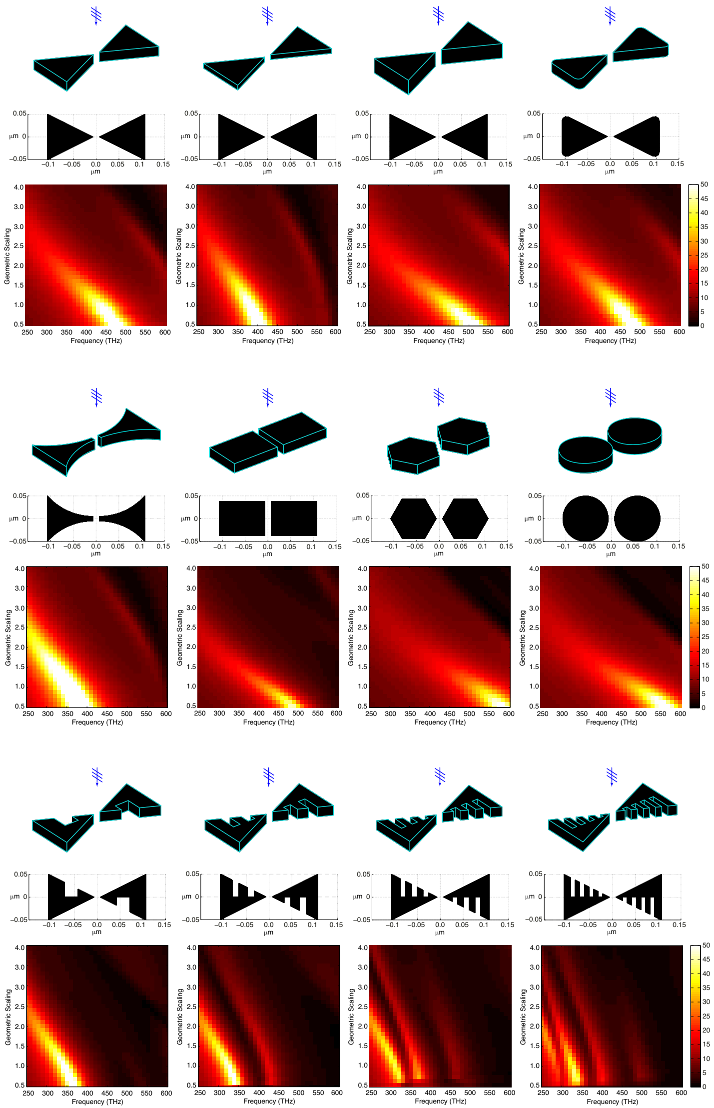


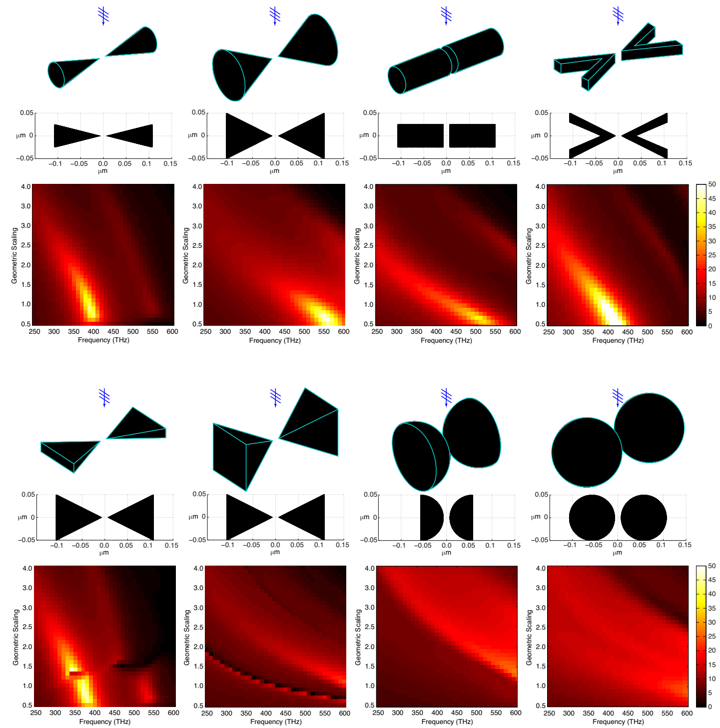


In this work, we study different nanoantenna geometries for power enhancement (energy harvesting) applications. Since electromagnetic scaling is not valid for metals at optical frequencies, 2D investigation is required for a full assessment of a given geometry. We find candidate structures for energy harvesting at different ranges of the electromagnetic spectrum. Multiband operation is also possible for geometries with slits.

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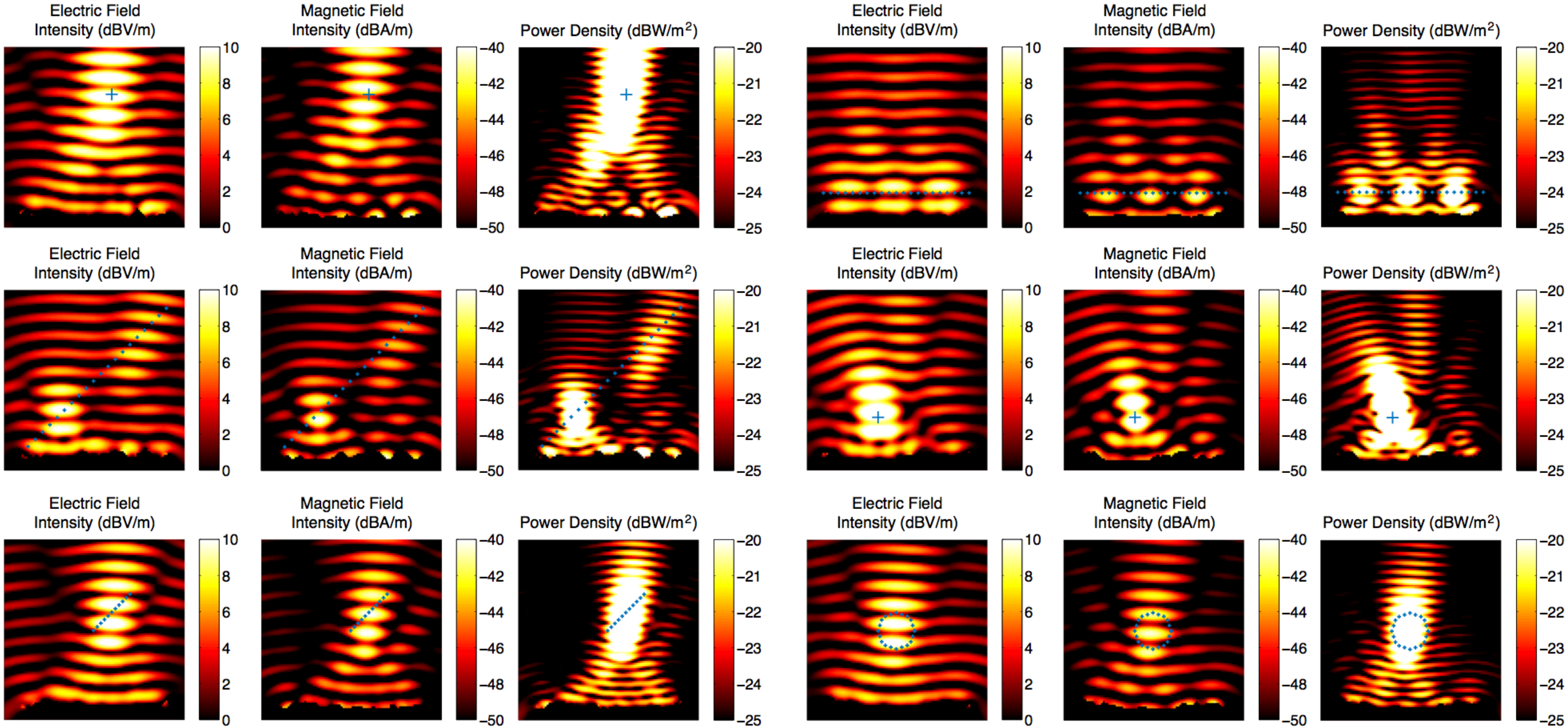
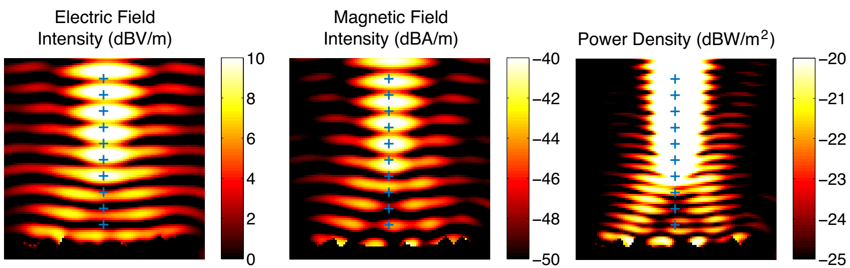
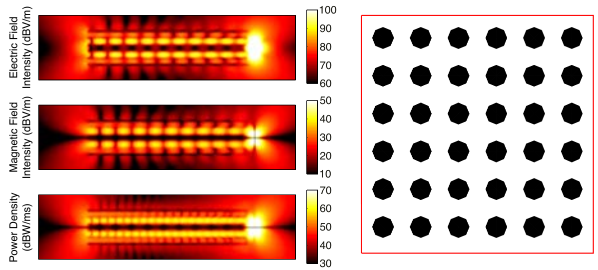
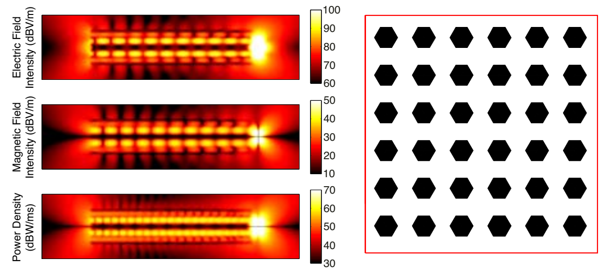
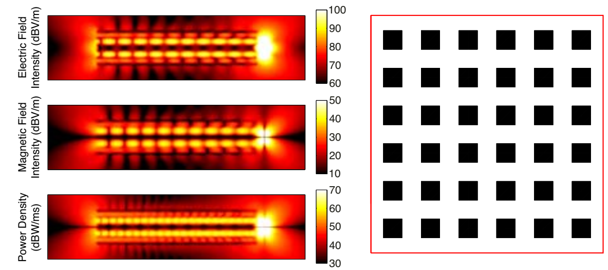


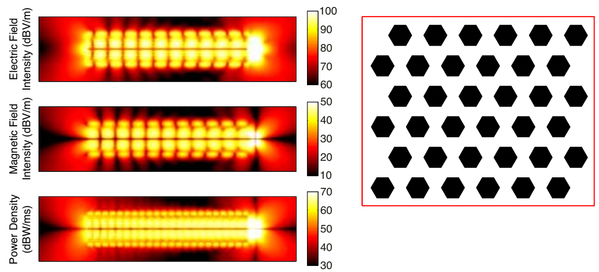



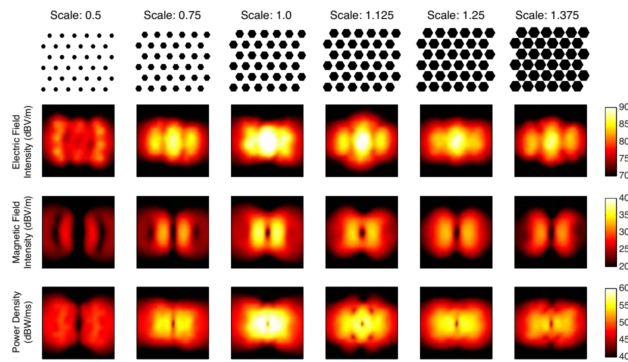

In this work, we investigate Corrugated Metallic sheets for maximum power enhancements at desired locations in the nearzone. We show that it is possible to control the power focusing by optimizing the corrugations. The optimizations are carried out by using genetic algorithms. The results can be interesting for a plethora of applications including optical imaging.

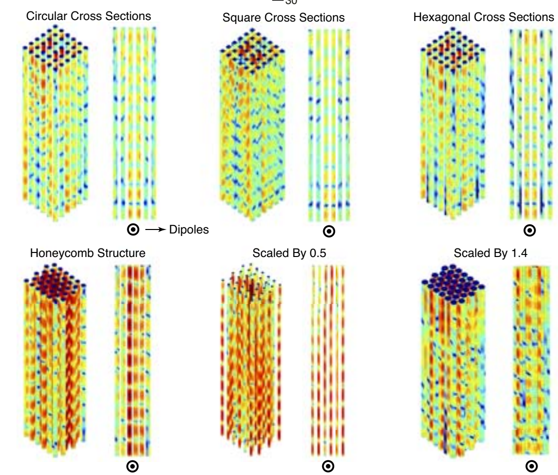


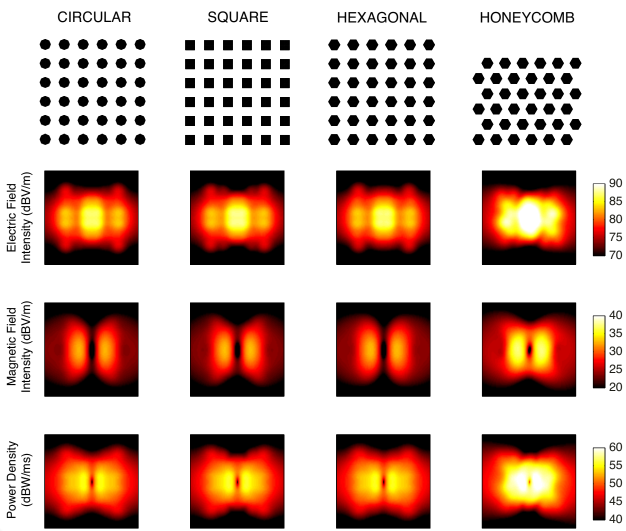




In this work, we consider power transfer using nanowire systems at optical frequencies. Transmission to long distances in terms of wavelength is possible thanks to plasmonic waves at the surfaces of the nanowires. By investigating alternative structures involving different cross-sectional geometries and the arrangements of nanowires, we show that honeycomb structures provide excellent transmission capabilities.

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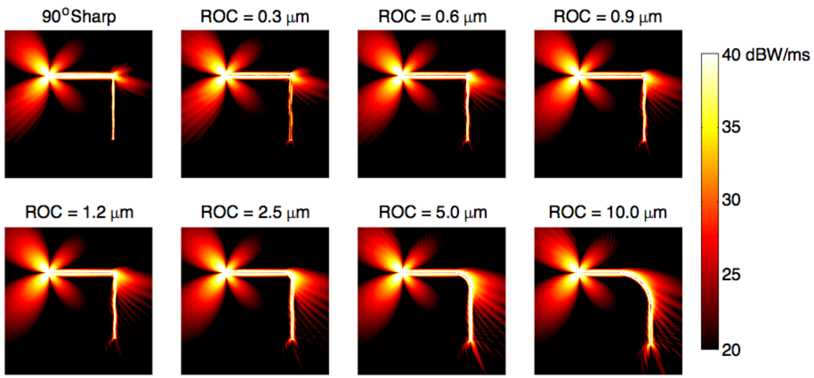
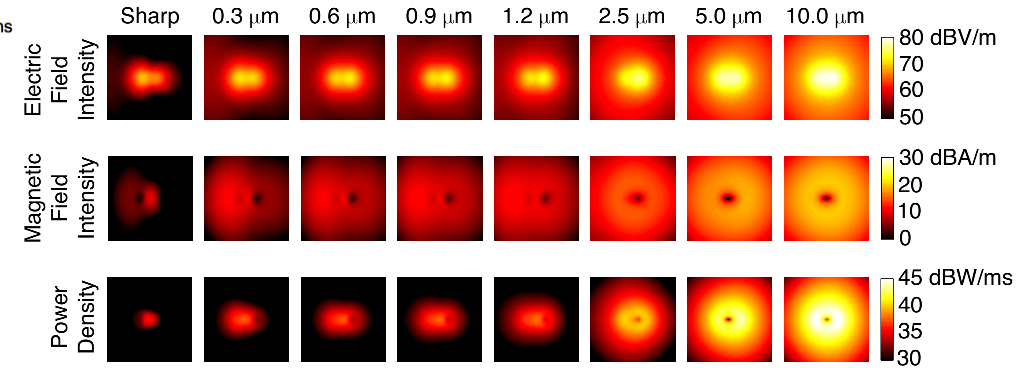
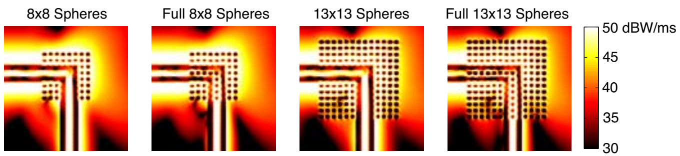
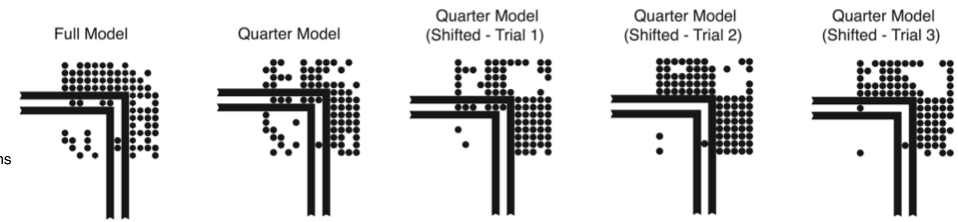
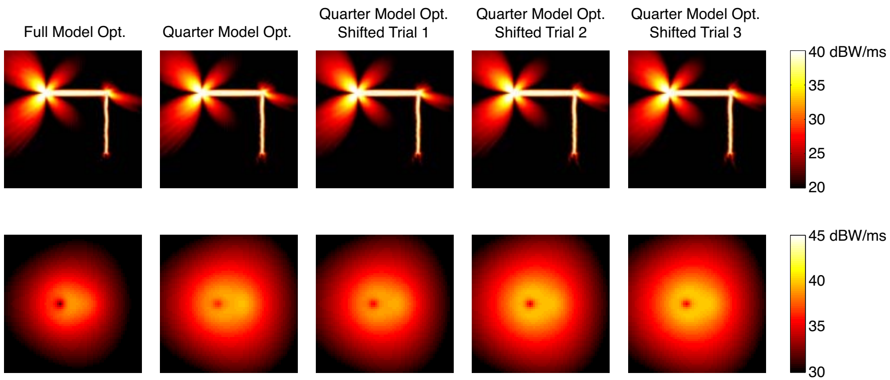


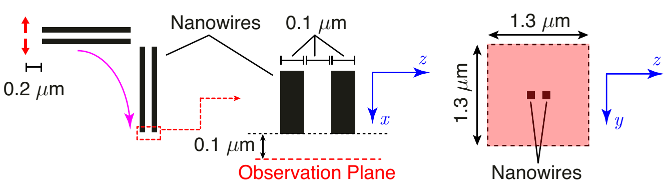




In this work, we design optical couplers for maximum power transfer through bended nanowire transmission lines. Spherical particles are used at the bend locations to improve the transmission capabilities, even for difficult sharp bends. Optimizations are carried out to find the most suitable array structures to maximize the output.

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