

# Manipulation of surface waves through metasurfaces. Doctoral thesis accepted by the University of Siena, Italy

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## Abstrak

This book presents innovative ideas and technical contributions in the area of metasurfaces and antenna technologies. On the one hand, it presents an effective method to analyze metasurfaces constituted by metallic texture with certain geometries. It shows how this method can be applied to the design of metasurface (MTS) antennas for deep space communications and other planar microwave devices. On the other hand, the book reports on a general methodology developed for analyzing flat devices realized by using modulated MTSs, which opens new design possibilities for a large number of microwave devices based on the manipulation of SWs. Finally, a novel approach of reconfigurability, which is based on a class of checkerboard MTS, is explored. All in all, this book covers important insights and significant results on the emerging topic of metasurfaces, from theoretical and computational aspects to experiments.