## Abstract

This research describes the application of metasurface technology to the design of a multibeam 2D lens antenna inspired by the Rotman lens concept. The lens is based on a multilayer metasurface structure with printed elements. The printed elements are modeled as tensor surface impedances to simplify the design process. The goal is to design a lens that exhibits satisfactory performance in terms of radiation patterns and directivity with the highest possible gain and side lobes less than 10 dB.