

## **A slotted partial ground plane microstrip patch antenna for ultrawide-band applications**

**S.Ibnyaich<sup>1</sup>, S. Chabaa<sup>1,2</sup>, L.Wakrim<sup>1</sup>, A.El yassini<sup>1</sup>, M.M. Hassani<sup>1</sup>, A.Zeroual<sup>1</sup>**

<sup>1</sup>Department of physics, Cadi Ayyad University Faculty of Sciences, Semlalia Marrakesh, Morocco

<sup>2</sup>Industrial Engineering Department, National School of Applied Sciences, Ibn Zohr University, Agadir, Morocco

### **Abstract:**

A New, compact, slotted partial ground plane, microstrip patch antenna developed for use in Ultrawide-band application is studied in this paper.

To obtain the final and optimal UWB antenna design, a parametric analysis of the defected ground plane structure was carried out to ensure that the antenna has a stable performance and an improved bandwidth, The size of the defected ground plane was studied and investigated. This investigation and optimization study was generated with help of the computer simulation technology CST simulator.

The antenna has an electrical small dimensions with a good gain, a notable efficiency and a wide impedance bandwidth. Which make this antenna a good candidate for ultrawide-band wireless communication, microwave imaging and radar applications as well.

### **Key words:**

Microstrip antenna, Ultrawide-band, defected ground plane, slotted ground plane, partial ground plane.