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Finding

In this thesis, defected ground structure (DGS) is explored as a technique to design an advanced microstrip patch antenna for modern wireless applications. Different types of microstrip antennas are designed and analyzed for several various wireless applications. A compact Y-shaped UWB antenna with a defected ground structure for advanced wireless applications are presented. The proposed structure gives a satisfactory radiation pattern with suppressed cross-polarization. Afterwards a novel antenna structure has been proposed for simultaneously working in both UWB as well as mm-wave range. Next antenna structure that provides a stable gain and good antenna performance over a frequency band of 27 GHz to 30 GHz. This structure has a tapered shape radiator on one side and a finite rectangular plane on the other side of the substrate. Subsequently a bow-tie radiating patch antenna design has been proposed. This system is further improved with a reflector to obtain an enhanced bandwidth. Finally a MIMO antenna system with wide bandwidth and a high stable gain has been presented. Furthermore, a MIMO antenna structure with two peculiar patch antennas has been proposed for WLAN applications. It has two semi-annular rings, of different inner and outer radii, placed facing each other.