

For a long time, transparent antennas have been of planar (2D) structures. Very recently, 3D transparent antennas have also been developed. This is a new topic. The principle of 3D transparent antenna is based on the theory of dielectric resonator antenna (DRA); the resonance is caused by the whole 3D structure rather than a confined cavity as found in the patch-antenna case. For glass, it is usually assumed that its refractive index is ~ 1.5 , giving a dielectric constant of ~ 2.25 . This value is too low for a DRA to have good polarization purity. However, it was generally overlooked that this dielectric constant was obtained at optical frequencies instead of microwave frequencies. Recently, a dielectric constant of ~ 7 was measured for glass at 2 GHz and this value is sufficient for obtaining a good radiator. Since crystals are basically glass, they can also be used for antenna designs. In this talk, the characteristics of glass DRAs will be shown. In addition, the idea of using a 3D glass antenna as a light cover, aesthetic decoration, or mirror will be presented. Interesting results will be presented in this talk.

Research and Applications of 3D Glass Antenna

Prof. Kwok Wa Leung 講演会

(City University of Hong Kong)

日時 : 平成 25 年 9 月 26 日 (木) 16:30~18:00

場所 : 福岡工業大学 D36 講義室 (D 棟 3 階)

主催 : 福岡工業大学情報科学研究所

協賛 : IEEE AP-S Fukuoka Chapter

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