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(54) Title: ZNS NANO PARTICLE THIN FILM DEPOSITED METAMATERIAL ANTENNA FOR NOTCH FREQUENCY APPLICATION

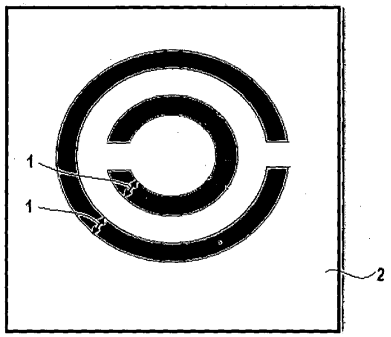

Fig.1

(57) Abstract: A ZnS Nanoparticle Thin Film Deposited Metamaterial Antenna For Notch Frequency Application comprising of a 20-25 nm ZnS nanomaterial thin film grown in the gap(1) of a complementary split ring resonator (CSRR) unit cell(2). The method comprises of the steps- (a)boiling Zn salt solution at 100°C and then adding 1/5th the volume of 1.1%, chitosan in mild acetic acid (1-2%) and then adding aqueous Na_2S in stoichiometric amounts; (b) allowing the solution to cool and then centrifuging the solution at 4000-5000 rpm to obtain a ZnS colloid which is then electrosterically stabilized by chitosan capping; (c)covering the conducting portion of the CSRR unit cell with a tape and then dropping ZnS colloid obtained from step (b) on it and then drying the unit cell at 80°-90°C; (d) repeating the step(c) for 3 to 5 times. This antenna results in the return loss parameter (S_{11}) getting significantly improved at its resonant frequency.

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