

Project Report for EE 305 Project

- We have taken a y-polarized uniform plane wave (E_i, H_i) is incident at an angle of incidence θ_i from medium 1 (ϵ_{r1}, μ_{r1}) on medium 2 (ϵ_{r2}, μ_{r2}) at $x=0$.
- We have considered both cases of Perpendicular Polarization and Parallel Polarization.
- We have written Matlab code and made an app for plotting the instantaneous expressions of total fields $E_1 (=E_i + E_r)$, $H_1 (=H_i + H_r)$, $E_2 (=E_t)$, $H_2 (=H_t)$ of the wave in media 1 and 2, respectively.
- In the app, we can provide parameters values $E_{i0}, \omega, \theta_i, \epsilon_{r1}, \mu_{r1}, \epsilon_{r2}, \mu_{r2}$ from user end. It contains buttons for plotting $E_1(E_i + E_r)$, $H_1(H_i + H_r)$, $E_2(E_r)$ and $H_2(H_r)$ for both the cases.
- It also has a feature to calculate Brewster Angle which is a angle at which incident EM wave has zero reflection coefficient for both Perpendicular and Parallel Polarization.