**Abstract**

Conduction studies are carried out on Eu2O3 thin film capacitors. From the ac conduction studies the dielectric constant is found to decrease with increase of frequency (< 1 MHz), but at very high frequency (> 1 MHz) it is found to increase. The ac conductance is found to be proportional to *f* at low frequencies, whereas a square‐law dependence is observed at higher frequencies. The activation energy decreases with increase of frequency and increases with increase of temperature. The dc conduction studies reveal a space‐charge limited conduction in this film. The density of free electrons, the density of trapped electrons, and the mobility of free electrons at different temperatures are calculated and the results are discussed.