

Abstract

Hydrogenated amorphous silicon nitride thin films are deposited by DC magnetron sputtering in argon, and molecular hydrogen and nitrogen mixture. The samples are characterized by electrical measurements and by optical transmission. The physicochemical structure is studied by FTIR spectrum analysis. The results show that both nitrogen and hydrogen are incorporated. The ratio $[N]/[Si]$ increases with increasing hydrogen partial pressure. The deposited films are used in MIS structures. The capacitance–voltage characteristics are carried out. The deposited samples present a large gap and show a nearly chemical stoichiometric composition.