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## Abstract

The work is dedicated to the investigation of blister formation in $ZrN/SiN_x$ multilayer films irradiated with He ions (30 keV) and annealed in a vacuum at 600°C. Multilayer films were prepared by reactive magnetron sputter-deposition on Si wafers under $Ar + N_2$ plasma discharges. $ZrN/SiN_x$ films were deposited by sequential sputtering from elemental Zr and $Si_3N_4$ targets at substrate temperature of 300°C, with ZrN and $SiN_x$ layer thickness varying from 2 to 10 nm. According to transmission electron microscopy (TEM), the multilayer films consist of nanocrystalline (002)-oriented ZrN and amorphous $SiN_x$ layers. Surface morphology changes of $ZrN/SiN_x$ films irradiated with He ions (30 keV) and annealed in a