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## **Growth of Ti-Zr-V non-evaporable getter films on ion-implanted substrate**

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The Ti-Zr-V non-evaporable getter (NEG) films were grown on ion-implanted substrates, including aluminum, stainless steel, and CuCrZr alloy. To create buried disorder, Ar ions with an energy of 200 keV were implanted into the sample. The Ti-Zr-V getter films grown on these ion-implanted substrate were characterized using scanning electron microscopy (SEM), X-ray diffraction (XRD), electron spectroscopy for chemical analysis (ESCA), and transmission electron microscopy (TEM). Similar properties and results were observed for the surface morphology and composition of the Ti-Zr-V films on both ion-implanted and pristine substrates. Besides, crystalline structure of the NEG films was a little different and the activation of the NEG films was apparently different for the cases of ion-implanted substrates. The thermal activation temperature of the NEG films was obviously lower in the ion-implanted sample than in the original sample. Besides, the TEM images showed that some defects were observed near the surface of the substrate after ion implantation process. These created damages indeed have the effect on the reduction reaction of NEG films. The mechanism is discussed in the paper.

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