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Comparative study of Au/Ti, Au/V and Au/Zr films oxygen gettering ability

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***Abstract* — In this work, thermal diffusion of titanium, vanadium and zirconium through a thin capping gold layer has been investigated and compared in terms of oxygen gettering ability after activation at low temperature. The films were characterized by means of sheet resistance measurements, high resolution Scanning Electron Microscopy, Ion Beam Etching coupled with Secondary Ions Mass Spectrometry, X-ray diffraction, X-ray photoelectron spectrometry and mechanical stress measurements. Results show that, among investigated bilayers, gold/zirconium system is the best candidate to get low temperature getter film as its activation temperature is below 200 °C for 1 hour annealing time.**

Keywords: getter, diffusion, transition metals, vacuum packaging