

METHOD FOR FORMING NOBLE METAL OXIDES AND STRUCTURES FORMED THEREOF

ABSTRACT

The present invention discloses a method for forming a noble metal oxide film layer (32) on a noble metal substrate (34) by exposing a surface of the noble metal substrate (34) to an oxygen-containing energy source. The noble metal may also be formed as a noble metal alloy containing at least one of those noble metals. The invention also discloses a noble metal oxide film layer (36) that is formed by exposing the surface of a noble metal substrate (34) to an oxygen-containing plasma.

The invention also discloses a novel method for depositing a high-permittivity material (38) on a noble metal substrate (34) by first exposing a top surface of a noble metal substrate to an oxygen-containing energy source for a sufficient length of time until an interface-enhancing layer is formed and then depositing a high-permittivity material on top of the noble metal substrate (30) sandwiching the oxygen-containing layer (36).

Fig. 3B