Sputtering process of film capacitor end surface

Compared to ALD, sputtering of oxide dielectrics might result in non-uniformity of thin films with high surface roughness ... a fully transparent metal oxide TFT was successfully fabricated solely through the sputtering process, involving the surface confinement of the sputtered Al 2 O 3 dielectric layer, which exhibited a low surface roughness of 1.23 nm. The ...

RF sputtering from a compact co-sputtering source proved to be a suitable method for depositing thin dielectric films. This type of apparatus can be set up to add dopants to a material such as barium titanate, thereby allowing convenient investigation of their effect on the relative permittivity and other electrical properties. Once ...

Sputtering is an effective technique for producing ultrathin films with diverse applications. The review begins by providing an in-depth overview of the background, introducing the early development of sputtering and its principles.

We discuss established methods of making sputter processes directional, examples of processes using multiple layers of sputtered materials, and representative examples of sputter processing with other methods of thin-film deposition in multi-step sequences, such as chemical vapor deposition and atomic layer deposition (ALD).

Sputtering deposition is a method of creating thin films of a few nanometers to a few micrometers on the desired substrate. In this process, the atoms separated from the surface of the target material are gaseous. These thermodynamically unstable atoms tend to be on a surface in a vacuum chamber.

Recently, sputtering has become a common technique for the deposition of thin films in microfluidic and nanofluidic devices. For most applications, it is used as a convenient means for the production of patterned electrodes. However, as will be shown below, sputtering can be used to achieve far more than this.

For the scenario of films sputtered with low current (< 0.25 A), the film thickness increases rapidly with increasing sputtering current, and the strain relaxation could reduce strain energy to a greater extent than the increase in surface energy [24,25,26]. Therefore, the films tend to adopt a (111) texture to lower strain energy. Also in this stage, all films are nitrogen ...

Gold films deposited by direct current magnetron sputtering are used for synchrotron radiation optics. In this study, the microstructure and surface roughness of gold films were investigated for the purpose of developing high-reflectivity mirrors. The deposition process was first optimized. Films were fabricated at different sputtering powers (15, 40, 80, and 120 ...

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