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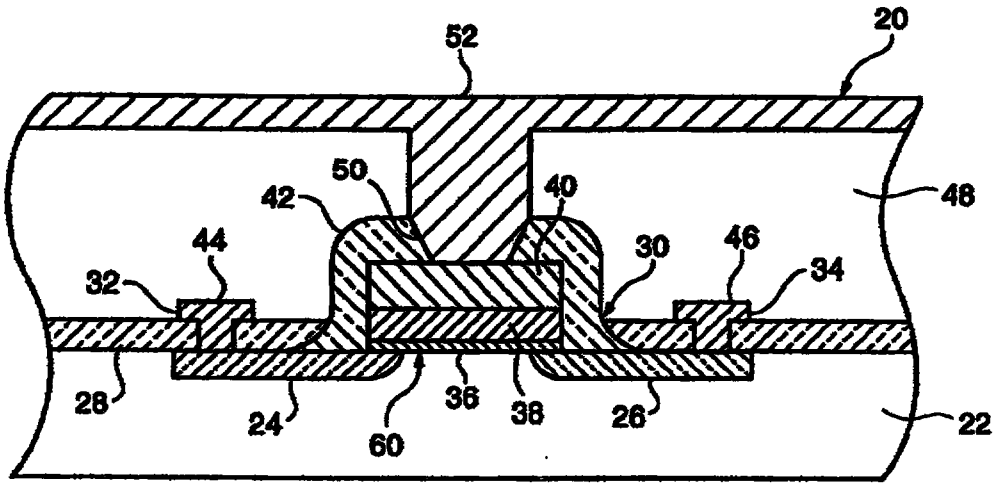
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(54) Title: METAL INSULATOR SEMICONDUCTOR STRUCTURE WITH POLARIZATION-COMPATIBLE BUFFER LAYER



(57) Abstract

An MIS device (20) includes a semiconducting substrate (22), a silicon nitride buffer layer (24), a ferroelectric metal oxyde superlattice material (26), and a noble metal top electrode (28). The layered superlattice material (26) is preferably a strontium bismuth tantalate, strontium bismuth niobate, or strontium bismuth niobium tantalate. The device is constructed according to a preferred method that includes forming the silicon nitride on the semiconducting substrate prior to deposition of the layered superlattice material. The layered superlattice material is preferably deposited using liquid polyoxyalkylated metal organic precursors that spontaneously generate a layered superlattice upon heating of the precursor solution. UV exposure during drying of the precursor liquid imparts a C-axis orientation to the final crystal, and results in improved thin-film electrical properties.