**HYBRID ORIENTATION SUBSTRATE WITH STRESS LAYER**

ABSTRACT

A hybrid orientation substrate includes a base substrate having a first orientation, a first surface layer having a first orientation disposed on the base substrate in a first region, and a second surface layer disposed on the base substrate in a second region. The second surface layer has an upper sub-layer having a second orientation, and a lower sub-layer between the base substrate and the upper sub-layer. The lower sub-layer having a first stress induces a second stress on the upper sub-layer.

**Fig. 1**