Claims

1. A bulk acoustic wave resonator, comprising a substrate and a piezoelectric stack structure arranged on the substrate, wherein the piezoelectric stack structure comprises a bottom electrode, a piezoelectric material layer and a top electrode which are sequentially stacked, and an outline of an orthographic projection of the top electrode on the substrate comprises at least one Bezier curve of order greater than or equal to 2;

wherein the outline is formed through end-to-end connection of a Bezier curve of order greater than or equal to 3;

wherein the outline of the orthographic projection of the top electrode on the substrate is the same in shape with an outline of an orthographic projection of the bottom electrode on the substrate, an outline area of the top electrode is less than an outline area of the bottom electrode, and a distance from the outline of the top electrode to the outline of the bottom electrode is 2-5 microns.

2. The bulk acoustic wave resonator according to claim 1, wherein a cavity is further arranged in one side, close to the piezoelectric stack structure, of the substrate, and the piezoelectric stack structure is located above the cavity; or, a high-low-acoustic-resistance stack is further arranged between the substrate and the piezoelectric stack structure.

3. The bulk acoustic wave resonator according to claim 1, wherein material of the piezoelectric layer is one of AlN, ScAlN, ZnO, PZT, LiNbO3 and LiTaO3.

4. A bulk acoustic wave filter, comprising a plurality of bulk acoustic wave resonators according to claim 1, wherein every two adjacent bulk acoustic wave resonators are connected in series or in parallel.

5. The bulk acoustic wave filter according to claim 4, wherein one end of each

serially connected bulk acoustic wave resonator is connected to a first signal end, the other end of the serially connected bulk acoustic wave resonator is connected to a second signal end; one end of each bulk acoustic wave resonator connected in parallel is connected to the serially connected bulk acoustic wave resonator, and the other end of the bulk acoustic wave resonator connected in parallel is connected to a grounding end.