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Wilson et al.

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(54) **FLUIDICS APPARATUS FOR SURFACE ACOUSTIC WAVE MANIPULATION OF FLUID SAMPLES, USE OF FLUIDICS APPARATUS AND PROCESS FOR THE MANUFACTURE OF FLUIDICS APPARATUS**

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(58) **Field of Classification Search**
None
See application file for complete search history.

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(57) **ABSTRACT**
A fluidics apparatus for manipulation of at least one fluid sample is disclosed. A manipulation surface locates the fluid sample. A surface acoustic wave (SAW) generation material layer is provided. This is a polycrystalline material, textured polycrystalline material, biaxially textured polycrystalline material, microcrystalline material, nanocrystalline material, amorphous material or composite material. A transducer electrode structure arranged at the SAW generation material layer provides SAWs at the manipulation surface for interaction with the fluid sample. The manipulation surface has a phononic structure, for affecting the transmission, distribution and/or behavior of SAWs at the manipulation surface. The apparatus is typically manufactured by reel-to-reel processes, to reduce the unit cost to a level at which the apparatus can be considered to be disposable after a single use.

14 Claims, 27 Drawing Sheets

