Claims

1. A holding device arrangement for use in an implantation process of a piezoelectric substrate, comprising a substrate holding device with an elastic and thermo-conductive layer for receiving a piezoelectric substrate, **characterised in** further comprising means for electrically connecting the surface of the elastic and thermo-conductive layer for receiving the piezoelectric substrate to ground potential.

2. The holding device arrangement according to claim 1, wherein the elastic and thermo-conductive layer comprises a polymer layer, in particular an elastomer layer.

3. The holding device arrangement according to claim 1 or 2, wherein the means for electrically connecting comprises at least one electrically conductive element embedded in the elastic and thermo-conductive layer to render the elastic and thermo-conductive layer electrically conductive.

4. The holding device arrangement according to claim 3, wherein the at least one electrically conductive element is at least one of metallic nano particles or metallic micro particles, carbon-based inclusions, graphite nanoparticles or carbon nanotubes.

5. The holding device arrangement according to claim 1 or 2, wherein the means for electrically connecting comprises at least one metallic pin extending through the elastic and thermo-conductive layer to the substrate holding device.

6. The holding device arrangement according to claim 5, wherein each one of the at least one metallic pin rests on a spring element provided in the substrate holding device.

7. The holding device arrangement according to claim 6, wherein, in the absence of a substrate, the at least one metallic pin protrudes at least partially beyond the surface of the elastic and thermo-conductive layer.

8. The holding device arrangement according to claim 1 or 2, wherein the means for electrically connecting comprises a conductive layer, in particular a metallic layer, provided over the elastic and thermo-conductive layer and extending laterally at least partially over the side surface of the elastic and thermo-conductive layer to be in direct contact with the surface of the substrate holding device.

9. A method of implantation of a piezoelectric substrate, in particular bulk piezoelectric substrate, using the holding device arrangement according to any one claims of 1 to 8, comprising the steps of :

a) providing a piezoelectric substrate on the holding device arrangement to thereby electrically connect the piezoelectric substrate to ground potential and,

b) implanting atomic species into the piezoelectric substrate.

10. An ion implanter comprising the holding device arrangement according to any one claims of 1 to 8.