

## Abstract

The invention relates to a method for testing a hemispherical shell for the production of a piezoceramic hydrophone at least including:

- 5           - the determination of a threshold value sw.1 from a predetermined maximum number of non-black-colored defects (4b) and/or a threshold value sw.2 of a size of non-black-colored defects (4b) and/or a threshold value sw.3 of the position of non-black-colored defects (4b);
- a.) applying an outer layer (4) comprising silver and optionally silicon compounds on a
- 10           first hemispherical shell (1a) and a second hemispherical shell (1b);
- b.) sintering and/or calcining the outer layer (4) and obtaining a first coated hemispherical shell (1a') and a second coated hemispherical shell (1b');
- c.) combining the first coated hemispherical shell (1a) with the second cleaned coated hemispherical shell (1b'') to form a hollow sphere (3);
- 15           d.) plasma treatment of the outer layer (4) and obtaining a plasma-treated hollow sphere (3') with a black-colored outer layer (4a);
- e.) testing the black-colored outer layer (4a) for:
  - a number of non-black-colored defects (4b) and obtaining a first value w.1; and/or
  - a size of non-black-colored defects (4b) and obtaining a second value w.2; and/or
  - 20       - a position of non-black defects (4b) and obtaining a third value w.3
- f.) comparing the values w.1 with sw.1 and/or w.2 with sw.2 and/or w.3 with sw.3;
- g.) removing the plasma-treated hollow sphere (3') if w.1 is greater than sw.1 and/or w.2 is greater than sw.2 and/or w.3 is greater than sw.3.

25   Figure 3