Title (en)

LEAD-FREE PIEZOCERAMIC MATERIAL COMPRISING A PEROVSKITE PHASE AND TUNGSTEN BRONZE PHASE AND METHOD FOR PRODUCING A PIEZOCERAMIC COMPONENT WITH THE MATERIAL

Title (de)

BLEIFREIER PIEZOKERAMISCHER WERKSTOFF MIT PEROWSKIT-PHASE UND WOLFRAMBRONZE-PHASE UND VERFAHREN ZUM HERSTELLEN EINES PIEZOKERAMISCHEN BAUTEILS MIT DEM WERKSTOFF

Title (fr)

MATÉRIAU PIÉZO-CÉRAMIQUE SANS PLOMB À PHASE PÉROVSKITE ET À PHASE BRONZE AU TUNGSTÈNE, ET PROCÉDÉ DE PRODUCTION D'UN COMPOSANT PIÉZO-CÉRAMIQUE DOTÉ DE CE MATÉRIAU

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Application

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Abstract (en)

[origin: WO2012000752A1] The invention relates to a lead-free, multi-phase piezoceramic material, comprising at least one perovskite phase having the perovskite phase composition (LixK1-x-yNay) (Nb1-t-uTatSbu) O3 and at least one tungsten bronze phase having the tungsten bronze phase composition (MIII m(LixK1-x-yNay)1-m(Nb1-wTaw) 5O15 + VA'2m, where MIII is at least one trivalent metal, VA' are a-site vacancies and the following relationships apply: 0 < m = 0.05; 0 = t = 0.15; 0 = u = 0.15; 0 = w = 1; 0 = x = 0.15; 0.25 = y = 0.75. Also disclosed is a method for producing a piezoceramic component using the piezoceramic material, said method comprising the following steps: a) a green body having a starting piezoceramic composition of the piezoceramic material is provided, and b) said green body is subjected to a thermal treatment, wherein the piezoceramic material of the component is produced from the starting piezoceramic composition. The piezoceramic component is, for example, an ultrasonic transducer or a piezoceramic bending transducer. In particular, the piezoceramic component is a multilayer piezo actuator used for actuating a fuel valve of an internal combustion engine of a motor vehicle.

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Citation (search report)

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