

Title (en)
PIEZOCERAMIC COMPOSITION, PIEZOCERAMIC BODY COMPRISING SAID COMPOSITION AND A METHOD FOR PRODUCING SAID COMPOSITION AND SAID BODY

Title (de)
PIEZOKERAMISCHE ZUSAMMENSETZUNG, PIEZOKERAMISCHER KÖRPER MIT DER ZUSAMMENSETZUNG UND VERFAHREN ZUM HERSTELLEN DER ZUSAMMENSETZUNG UND DES KÖRPERS

Title (fr)
COMPOSITION PIEZOCERAMIQUE, CORPS PIEZOCERAMIQUE COMPRENANT CETTE COMPOSITION ET LEURS PROCEDES DE PRODUCTION

Publication
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Application
EP 03729863 A 20030505

Priority
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Abstract (en)
[origin: WO03101946A2] The invention relates to a piezoceramic composition with the general empirical formula $Pb_{1-a}RE_bZr_xTi_yTR_zO_3$, in which RE represents a rare-earth element, selected from a group comprising europium, gadolinium, lanthanum, neodymium, praseodymium, promethium and/or samarium, with a rare-earth element fraction b, TR represents at least one transition metal, selected from the group comprising chromium, iron and/or manganese, with a transition metal valency WTR and a transition metal fraction z and whereby the following interrelation is valid: $z > b/(4 - WTR)$. Homogenous PZT crystals with a maximum particle size are obtained even at low sintering temperatures by a non-stoichiometric dosing ratio of transition metal dosage to rare-earth element dosage. By varying the dosages, the piezoelectric characteristics of a PZT ceramic with said composition can be modified from those of a classic soft PZT to those of a classic hard PZT. The piezoceramic body is for example a monolithic, multi-layer piezoactuator, which can be used for multiple injections in the engine of a motor vehicle, as a result of a high d33 coefficient and low internal dissipation in the high-level signal range.

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