

## Analysis of FGM Actuator Structure Using New Multiphysical Finite Elements

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**Abstract.** The paper deals with a new approach in analysing of the systems made of FGM using our new beam finite elements. Multiphysical analysis (weak coupled electro-thermo-mechanical analysis) and spatial continuous variation of material properties are supported. The analysis of the micro actuator with constant cross section made of FGM is presented in the paper. This simple-shaped actuator is supplied by electric current and the efficiency of the actuator is optimised. The solution results will be compared with those obtained by using solid elements of a FEM commercial program.