Additive Manufacturing of a Force/Displacement Sensor Based on Electromagnetic Field Principle

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Abstract. In this work, design, simulation and experiments of a novel wireless force/displacement sensor are described. Aconcept is described where the sensor's deformation part and parallel capacitor-inductor (LC) resonant circuit are produced together in one technological step. The measurements on the produced laboratory samples can indicate if such an approach is suitable for the proposed wireless force sensor which utilizes changes in electromagnetic field around sensor's deformable part to measure the quantity of the acting load.