

Abstract

Formation of magnetic elements on a substrate, and MEMS devices including such elements

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Magnetic elements 15 are formed on the surface of a substrate 7 by (i) treating a first surface of an Al foil 1 to form an AAO region 2 containing elongate pores 12 extending through the foil, (ii) adhering the foil 1 to the substrate 7 with the AAO region 2 facing the substrate 7, (iii) etching the foil 1
10 to expose the AAO 2, (iv) opening the pores 12, and (v) filling the pores 12 with magnetic material 11. The magnetic material 11 is firmly attached to the matrix of AAO, which is in turn adhered firmly to the substrate 7. The amount of magnetic material can be high if the pores 12 are long. The thickness of the magnetic material does not depend on the initial thickness of the Al foil, so a
15 foil at least 0.1mm thick, which is easy to handle, may be used, and the pores can be produced by a straightforward process.

[Fig. 1(b)]

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