

Title (en)
STEALTH APPLICATIONS OF ACOUSTIC HYPERABSORPTION BY ACOUSTICALLY DARK METAMATERIAL CELLS

Title (de)
VERBORGENE ANWENDUNGEN DER AKUSTISCHEN HYPERABSORPTION DURCH AKUSTISCH DUNKLE METAMATERIALZELLEN

Title (fr)
APPLICATIONS FURTIVES D'HYPERABSORPTION ACOUSTIQUE PAR DES CELLULES EN MÉTAMATÉRIAU ACOUSTIQUEMENT SOMBRES

Publication
EP 3850615 A4 20220615 (EN)

Application
EP 19859064 A 20190913

Priority
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Abstract (en)
[origin: WO2020056337A1] Aspects of the present disclosure include apparatus, systems, and methods for enhancing passive stealth capabilities. Apparatus may include at least one acoustic attenuator comprising a metamaterial matrix having a plurality of cells and configured, upon at least a partial immersion in a fluid, to form an acoustic attenuation system including at least a portion of the matrix and the fluid, the acoustic attenuation system configured to acoustically attenuate acoustic signals incident on the attenuator from the fluid. At least one cell of the plurality of cells may comprise a plurality of sub-cells azimuthally arrayed about an axis of alignment, with at least one sub-cell of the plurality comprising a plurality of solid cell segments substantially oriented in alignment with a mapping geometry comprising an inversion of a canonical tangent circles mapping.

IPC 8 full level
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CPC (source: EP)
G10K 11/165 (2013.01); **G10K 11/172** (2013.01)

Citation (search report)
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• [XAI] US 9324312 B2 20160426 - BERKER ALI [US], et al
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• [XAI] Y. CHENG ET AL: "Ultra-sparse metasurface for high reflection of low-frequency sound based on artificial Mie resonances", NATURE MATERIALS, vol. 14, no. 10, 31 August 2015 (2015-08-31), London, pages 1013 - 1019, XP055288152, ISSN: 1476-1122, DOI: 10.1038/nmat4393
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• See references of WO 2020056337A1

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