List of Publications

Marco Miniaci

Journal Papers (57)

1. VF Dal Poggetto, **M Miniaci**. Harnessing normal-shear coupling in metabarriers for deep sub-wavelength underwater noise control. *npj Acoustics*, vol. 2, no. 1, pp. 20, 2026.
2. G Di Chiara, **M Miniaci**, I Farina, A Petrillo, R Luciano, F Fraternali. Mechanical behavior and wave-mitigation potential of metaconcretes with solidified/stabilized soil aggregates. *Mechanics Research Communications*, pp. 104656, 2026.
3. F Nistri, RM Cosentini, VF Dal Poggetto, **M Miniaci**, P Charkaluk, NM Pugno, AS Gliozzi, F Bosia. Attenuation of bulk waves using locally resonant soil-coupled metabarriers. *Journal of Physics D: Applied Physics*, vol. 58, no. 4, pp. 045502, 2025.
4. F Ongaro, PH Beoletto, F Bosia, **M Miniaci**, NM Pugno. Closed-form solutions for wave propagation in hexagonal diatomic non-local lattices. *International Journal of Mechanical Sciences*, vol. 291, pp. 110095, 2025.
5. SAR Kuchibhatla, A Gupta, **M Miniaci**, MJ Leamy. Experimental demonstration of tunable spectral flow of elastic localized modes. *Applied Physics Letters*, vol. 127, no. 19, 2025.
6. VF Dal Poggetto, F Nistri, NM Pugno, **M Miniaci**, AS Gliozzi, F Bosia. Longitudinal-flexural wave mode conversion via periodically undulated waveguides with constant and graded profiles. *Physical Review Applied*, vol. 24, no. 6, pp. 064050, 2025.
7. S Kuznetsova, F Allein, V Dal Poggetto, F-X Bécot, **M Miniaci**. Sierpiński carpet-inspired hierarchical patterning of porous materials for sound absorption. *npj Acoustics*, vol. 1, no. 1, pp. 25, 2025.
8. P Kudela, M Radzienski, **M Miniaci**, P Fiborek, W Ostachowicz. The design and testing of an ultrasensitive device with embedded phononic crystals for the detection and localisation of nonlinear guided waves. *Journal of Sound and Vibration*, vol. 611, pp. 119155, 2025.
9. GA Esposito, D Tallarico, MS Ahmed, **M Miniaci**, S Shahab, A Bergamini. Bioinspired Fano-like resonant transmission: frequency selective impedance matching. *Journal of Physics D: Applied Physics*, vol. 57, no. 15, pp. 155402, 2024.
10. F Nistri, F Bosia, AS Gliozzi, L D'Alessandro, S Caverni, P Charkaluk, A Corigliano, **M Miniaci**, A Colombi, NM Pugno. Design and in field validation of a modular metamaterial for mitigation of railway induced vibrations. *Soil Dynamics and Earthquake Engineering*, vol. 180, pp. 108594, 2024.
11. L Carpentier, A Gueddida, G Lévêque, R Alcorta-Galvan, C Croënne, **M Miniaci**, B Djafari-Rouhani, Y Pennec. Elliptic pillars based metasurface for elastic waves focusing in a plate. *APL Materials*, vol. 12, no. 4, 2024.
12. S Kuznetsova, S Deleplanque, F Allein, B Dubus, **M Miniaci**. Hierarchical meta-porous materials as sound absorbers. *Proceedings A*, vol. 480, no. 2301, pp. 20230831, 2024.
13. V Dal Poggetto, D Urban, F Nistri, PH Beoletto, E Descrovi, **M Miniaci**, NM Pugno, F Bosia, AS Gliozzi. Selective dynamic band gap tuning in metamaterials using graded photoresponsive resonator arrays. *Philosophical Transactions A*, vol. 382, no. 2279, pp. 20240150, 2024.
14. VF Dal Poggetto, RK Pal, NM Pugno, **M Miniaci**. Topological bound modes in phononic lattices with nonlocal interactions. *International Journal of Mechanical Sciences*, vol. 281, pp.

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15. M Morvaridi, F Bosia, M Brun, V Dal Poggetto, AS Gliozzi, **M Miniaci**, C Croënne, NM Pugno, G Carta. Tunable topologically protected waveguiding in auxetic nonlinear metamaterials. *Physical Review Applied*, vol. 21, no. 3, pp. 034024, 2024.

16. L Shtrepi, VF Dal Poggetto, C Durochat, M Dubois, D Bendahan, F Nistri, **M Miniaci**, NM Pugno, F Bosia. Acoustic noise levels and field distribution in 7 T MRI scanners. *Frontiers in Physics*, vol. 11, pp. 1284659, 2023.

17. M Mazzotti, A Foehr, OR Bilal, A Bergamini, F Bosia, C Daraio, NM Pugno, **M Miniaci**. Bio-inspired non self-similar hierarchical elastic metamaterials. *International Journal of Mechanical Sciences*, vol. 241, pp. 107915, 2023.

18. P Kudela, A Ijjeh, M Radzienski, **M Miniaci**, N Pugno, W Ostachowicz. Deep learning aided topology optimization of phononic crystals. *Mechanical Systems and Signal Processing*, vol. 200, pp. 110636, 2023.

19. **M Miniaci**, F Allein, RK Pal. Spectral flow of a localized mode in elastic media. *Physical Review Applied*, vol. 20, no. 6, pp. 064018, 2023.

20. FA Santos, C Caroço, A Amendola, **M Miniaci**, F Fraternali. 3D tensegrity braces with superelastic response for seismic control. *International Journal for Multiscale Computational Engineering*, vol. 20, no. 5, 2022.

21. F Bosia, VF Dal Poggetto, AS Gliozzi, G Greco, M Lott, **M Miniaci**, F Ongaro, M Onorato, SF Seyyedizadeh, M Tortello, NM Pugno. Optimized structures for vibration attenuation and sound control in nature: A review. *Matter*, vol. 5, no. 10, pp. 3311–3340, 2022.

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24. **M Miniaci**, M Mazzotti, A Amendola, F Fraternali. Effect of prestress on phononic band gaps induced by inertial amplification. *International Journal of Solids and Structures*, vol. 216, pp. 156–166, 2021.

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26. **M Miniaci**, N Kherraz, C Cröenne, M Mazzotti, M Morvaridi, AS Gliozzi, M Onorato, F Bosia, NM Pugno. Hierarchical large-scale elastic metamaterials for passive seismic wave mitigation. *EPJ Applied Metamaterials*, vol. 8, pp. 14, 2021.

27. VF Dal Poggetto, F Bosia, **M Miniaci**, NM Pugno. Optimization of spider web-inspired phononic crystals to achieve tailored dispersion for diverse objectives. *Materials & design*, vol. 209, pp. 109980, 2021.

28. D Tallarico, G Hannema, **M Miniaci**, A Bergamini, A Zemp, B Van Damme. Superelement modelling of elastic metamaterials: Complex dispersive properties of three-dimensional structured beams and plates. *Journal of Sound and Vibration*, vol. 484, pp. 115499, 2020.

29. AS Gliozzi, **M Miniaci**, A Chiappone, A Bergamini, B Morin, E Descrovi. Tunable photo-responsive elastic metamaterials. *Nature communications*, vol. 11, no. 1, pp. 2576, 2020.

30. M Mazzotti, **M Miniaci**, I Bartoli. A numerical method for modeling ultrasonic guided waves in thin-walled waveguides coupled to fluids. *Computers & Structures*, vol. 212, pp. 248–256, 2019.

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32. M Mazzotti, I Bartoli, **M Miniaci**. Modeling Bloch waves in prestressed phononic crystal plates. *Frontiers in Materials*, vol. 6, pp. 74, 2019.

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35. **M Miniaci**, RK Pal, R Manna, M Ruzzene. Valley-based splitting of topologically protected helical waves in elastic plates. *Physical Review B*, vol. 100, no. 2, pp. 024304, 2019.

36. F Bosia, AO Krushynska, **M Miniaci**, B Morvan, NM Pugno. advances in mechanical metamaterials. *Frontiers in Materials*, vol. 5, pp. 56, 2018.

37. **M Miniaci**, A Krushynska, AS Gliozzi, N Kherraz, F Bosia, NM Pugno. Design and fabrication of bioinspired hierarchical dissipative elastic metamaterials. *Physical Review Applied*, vol. 10, no. 2, pp. 024012, 2018.

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