

## **Publications**

### **Patents**

P2: Ardito, A. Corigliano, F. Braghin, J. M. De Ponti, R. V. Craster, A. Colombi, Piezoelectric multi-resonator device for energy harvesting or actuating, PCT/IB2022/060275

P1. R. Ardito, A. Corigliano, F. Braghin, J. M. De Ponti, R. V. Craster, A. Colombi, Dispositivo multi-risonatore per uso in sistemi di raccolta energia o in un sistema di azionamento, n. 102021000027965 (2021).

### **Chapters in International books**

C1. J.M. De Ponti, Autonomous Wireless Sensors via Graded Elastic Metamaterials, Civil and Environmental Engineering for the Sustainable Development Goals, pag. 55-66, Springer Nature Switzerland, ISBN: ISBN: 978-3-030-99592-8 (2022).

### **International books**

B1. J. M. De Ponti, Graded Elastic Metamaterials for Energy Harvesting, Springer Nature Switzerland, ISBN: 978-3-030-69059-5 (2021).

### **Papers in international journals**

P21: L. Iorio, J.M. De Ponti, A. Corigliano, R. Ardito, Bandgap widening and resonator mass reduction through wave locking, Mech. Res. Comm. 104200, doi.org/10.1016/j.mechrescom.2023.104200 (2023).

P20: F. Maspero, J. M. De Ponti, L. Iorio, A. Esposito, R. Bertacco, A. di Matteo, A. Corigliano, R. Ardito, Phononic Graded Meta-MEMS for Elastic Wave Amplification and Filtering, JMEMS, doi: 10.1109/JMEMS.2023.3320198, pp. 1-7 (2023).

P19: R. Wiltshaw, J. M. De Ponti and R.V. Craster, Analytical solutions for Bloch waves in resonant phononic crystals: deep-subwavelength energy splitting and mode steering between topologically protected interfacial and edge states, Q. J. Mech. Appl. Math. (2023)

P18: J. M. De Ponti, L. Iorio, G.J. Chaplain, A. Corigliano, R.V. Craster and R. Ardito, Tailored topological edge waves via chiral hierarchical metamaterials, Phys. Rev. Appl. 19, 034079 (2023).

P17: L. Rosafalco, J. M. De Ponti, L. Iorio, R. Ardito and A. Corigliano, Optimised graded metamaterials for mechanical energy confinement and amplification via reinforcement learning, Eur. J. Mech. A Solids 99, 104947 (2023).

P16 G. J. Chaplain, J. M. De Ponti, T. A. Starkey, Elastic orbital angular momentum transfer from an elastic pipe to a fluid, Commun. Phys. 5, 279 (2022).

RI15 B. Zhao, H. R. Thomsen, J. M. De Ponti, E. Riva, B. Van Damme, A. Bergamini, E. Chatzi, A. Colombi, A graded metamaterial for broadband and high-capability piezoelectric energy harvesting, Energy Conv. Manag. Vol. 269, 116056 (2022).

P14 J.M. De Ponti, L. Iorio, R. Ardito, Graded elastic meta-waveguides for rainbow reflection, trapping and mode conversion, EPJ Appl. Metamat. Vol. 9, n. 6 (2022).

P13 G. J. Chaplain, J. M. De Ponti, R. V. Craster, Elastic Orbital Angular Momentum, Phys. Rev. Lett. 128, 064301 (2022).

P12 G. J. Chaplain, J. M. De Ponti, The elastic spiral phase pipe, J. Sound Vib. 523, 116718 (2022).

P11 J. M. De Ponti, E. Riva, F. Braghin, R. Ardito, Elastic three-dimensional metaframe for selective wave filtering and polarization control, *Appl. Phys. Lett.* 119, 211903 (2021).

P10. J.M. De Ponti, L. Iorio, E. Riva, F. Braghin, A. Corigliano, R. Ardito, Enhanced Energy Harvesting of Flexural Waves in Elastic Beams by Bending Mode of Graded Resonators, *Front. Mater.* 8 (2021).

P9 J. M. De Ponti, L. Iorio, E. Riva, R. Ardito, F. Braghin, A. Corigliano, Selective Mode Conversion and Rainbow Trapping via Graded Elastic Waveguides, *Phys. Rev. Applied* 16, 034028 (2021).

P8. G. J. Chaplain, J. M. De Ponti, G. Aguzzi, A. Colombi, R. V. Craster, Topological Rainbow Trapping for Elastic Energy Harvesting in Graded Su-Schrieffer-Heeger Systems, *Phys. Rev. Appl.* 14, 054035 (2020).

P7. G. J. Chaplain, D. Pajer, J. M. De Ponti, R. V. Craster, Delineating rainbow reflection and trapping with applications for energy harvesting, *New J. Phys.* 22 063024 (2020).

P6. G. J. Chaplain, J. M. De Ponti, A. Colombi, R. Fuentes-Dominguez, P. Dryburg, D. Pieris, R. J. Smith, A. Clare, M. Clark, R.V. Craster, Tailored elastic surface to body wave Umklapp conversion, *Nat. Commun.* 11 3267 (2020).

P5. J.M. De Ponti, E. Riva, R. Ardito, F. Braghin, A. Corigliano, Wide low frequency bandgap in imperfect 3D modular structures based on modes separation, *Mech. Res. Commun.* 105 103512 (2020).

P4. J. M. De Ponti, A. Colombi, E. Riva, R. Ardito, F. Braghin, A. Corigliano, R. V. Craster, Experimental investigation of amplification, via a mechanical delay-line, in a rainbow-based metamaterial for energy harvesting, *Appl. Phys. Lett.* 117, 143902 (2020).

P3. J.M. De Ponti, A. Colombi, R. Ardito, F. Braghin, A. Corigliano, R.V. Craster, Graded elastic metasurface for enhanced energy harvesting, *New J. Phys.* 22 013013 (2020).

P2. J.M. De Ponti, N. Paderno, R. Ardito, F. Braghin, A. Corigliano, Experimental and numerical evidence of comparable levels of attenuation in periodic and a-periodic metastructures, *Appl. Phys. Lett.* 115 031901 (2019).

P1: M. Banfi, P. Aceti, C. Arena, G. Bianciardi, G. Bonaventura, M. Chiappini, G. Corfini, J.M. De Ponti, E. Lo Savio, F. Lucidi, A. Marchini, G. Marino, M. Martinengo, H. Nasimi, L. Pesenti, F. Prandoni, N. Ruocco, F. Salvaggio, M. Vincenzi, R. Zambelli, Minima of eclipsing binaries and new ephemerides for GSC 03881-00579 and EZ Lacertae, *Information Bulletin on Variable Stars*, No. 6033 (2012).