



Fig. 12. 3D view (a) and mid-cross section (b) of the L-20-Al sample; and 3D view (c) together mid-cross section (d) of the L-34-Al sample.

## Professor Gabriella Epasto

**The black and white images above are from:** Gabriella Epasto, Fabio Distefano, Linxia Gu, Hozhabr Mozafari and Emanoil Linul, "Design and optimization of metallic foam shell protective device against flying ballast impact damage in railway axles", *Materials and Design*, Vol. 196, Article ID 109120, 2020

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### Summary:

My interests: lightweight structures, aluminium foam sandwich, aluminium honeycomb sandwich, microlattice structures, computed tomography, non-destructive evaluation

### Selected Publications:

- V. Crupi, G. Epasto, and E. Guglielmino. Impact response of aluminum foam sandwiches for light-weight ship structures. *Metals*. 2011;1:98–112.
- V. Crupi, G. Epasto, E. Guglielmino. Low-velocity impact strength of sandwich materials. *J Sandw Struct Mater*. 13; 409 - 426, 2011.
- V. Crupi, G. Epasto, E. Guglielmino. Collapse modes in aluminium honeycomb sandwich panels under bending and impact loading. *Int J Impact Eng*, 43; 6 – 15, 2012.
- V. Crupi, G. Epasto, E. Guglielmino. Comparison of aluminium sandwiches for lightweight ship structures: Honeycomb vs. foam. *Marine Structures*, 30; 74-96, 2013.
- V. Crupi, G. Epasto, E. Guglielmino, H. Mozafari, S. Najafian. Computed tomography-based reconstruction and finite element modelling of honeycomb sandwiches under low-velocity impacts. *J Sandw Struct Mater*, 16; 377-397, 2014.
- V. Crupi, E. Kara, G. Epasto, E. Guglielmino, H. Aykul. Prediction model for the impact response of glass fibre reinforced aluminium foam sandwiches. *Int J Impact Eng*, 77; 97 – 107, 2015.

H. Mozafari, H. Molatefi, V. Crupi, G. Epasto, E. Guglielmino. In plane compressive response and crushing of foam filled aluminum honeycombs. *J Compos Mater*, 4; 3215–3228, 2015.

H. Mozafari, S. Khatami, H. Molatefi, V. Crupi, G. Epasto, E. Guglielmino. Finite element analysis of foam-filled honeycomb structures under impact loading and crashworthiness design. *Int J Crashworthiness*, 21; 148-160, 2016.

V. Crupi, G. Epasto, E. Guglielmino. Internal damage investigation of composites subjected to low-velocity impact. *Exp Tech*, 50; 555 - 568, 2016.

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P. Corigliano, V. Crupi, G. Epasto, E. Guglielmino, N. Maugeri, A. Marinò. Experimental and theoretical analyses of Iroko wood laminates. *Composites Part B*, 112; 251-264, 2017.

V. Crupi, E. Kara, G. Epasto, E. Guglielmino, H. Aykul. Static behavior of lattice structures produced via direct metal laser sintering technology. *Mater Des*, 135; 246-256, 2017.

V. Crupi, E. Kara, G. Epasto, E. Guglielmino, H. Aykul. Theoretical and experimental analysis for the impact response of glass fibre reinforced aluminium honeycomb sandwiches. *J Sandw Struct Mater*, 20; 42-69, 2018.

S. Abrate, G. Epasto, E. Kara, V. Crupi, E. Guglielmino, H. Aykul. Computed tomography analysis of impact response of lightweight sandwich panels with micro lattice core. *Proc Inst Mech Eng C*, 232; 1348-1362, 2018.

H. Mozafari, A. Eyvazian, A.M. Hamouda, V. Crupi, G. Epasto, E. Guglielmino. Numerical and experimental investigation of corrugated tubes under lateral compression. *Int J Crashworthiness*, 23(4), 461-473, 2018.

G. Palomba, G. Epasto, V. Crupi, E. Guglielmino. Single and double-layer honeycomb sandwich panels under impact loading. *Int J Impact Eng*, 121, 77-90, 2018.

G. Epasto, G. Palomba, D. D'Andrea, E. Guglielmino, S. Di Bella, F. Traina. Ti-6Al-4V ELI microlattice structures manufactured by electron beam melting: Effect of unit cell dimensions and morphology on mechanical behaviour. *Mat Sci Eng A-Struct*, 753, 31-41, 2019.

Giulia Palomba, Vincenzo Crupi and Gabriella Epasto, "Collapse modes of aluminium honeycomb sandwich structures under fatigue bending loading", Article 106363, *Thin-Walled Structures*, Vol. 145, December 2019

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