

In silico investigation of cellular composites inspired by Liquidambar formosana

Yuan Chiang¹⁾ and *Shu-Wei Chang²⁾

^{1), 2)} *Department of Civil Engineering, National Taiwan University, Taipei, Taiwan*

²⁾ changsw@ntu.edu.tw

ABSTRACT

Cellular composites found in nature have provided fruitful inspirations for their exceptional toughness. In this work, we propose a Fibonacci composite inspired by Liquidambar formosana. The mechanical properties of the bioinspired cellular composites are simulated to understand how the structural geometry of stiff and soft materials governs the toughening performance of cellular composites. Our results provide fundamental understandings on the toughening mechanisms of cellular composites.

REFERENCES

Y. Chiang, C.C. Tung, X.D. Lin, P.Y. Chen, C.S. Chen, and S.W. Chang (2020, Nov). Geometrically toughening mechanism of cellular composites inspired by Fibonacci lattice in Liquidambar formosana. Composite Structures.

¹⁾ Graduate Student

²⁾ Professor