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Award-winning paper in 2022.

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Announcement

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Award-winning paper in 2022

Papers published in *Emerging Materials Research* are eligible for awards from the Institution of Civil Engineers. Papers from any of the ICE journals can be nominated for several awards. In addition, each journal has awards dedicated to their specific subject area.

On Friday 13 October 2023, ICE president Keith Howells presented an award to the following paper published in *Emerging Materials Research* in 2022. The editorial panel nominated their best papers and an awards committee chaired by Tim Broyd allocated the awards.

Emerging Materials Research Prize

The Emerging Materials Research Prize, presented to the best paper published in *Emerging Materials Research*, was awarded to Li *et al.* (2022).

Abstract

Carbon/carbon (C/C) composites are created through chemical vapor infiltration and precursor infiltration and pyrolysis. The bending, compressive

and tribological properties of C/C composites and graphite materials are compared and studied. The influence of the fiber volume fraction on the mechanical properties of the specimen is investigated. The results reveal that increasing the volume fraction of Z-direction fibers improves the mechanical characteristics of the composites significantly. The bending strength of C/C composites is 66.27–123.18% higher than that of graphite materials, while the compressive strength in the Z-direction is 13–31% greater than that of graphite. The wear is about 33% lower than that in graphite materials. The C/C composites have a more continuous infiltration structure, which promotes the smooth transfer of stress in the composites and enhances their mechanical bearing capacity. Besides, when C/C composites are subjected to friction and wear, it is difficult for the fiber bundles to come off due to the close surrounding of the matrix, resulting in less wear.

REFERENCE

Li F, Ma Y, Xu W *et al.* (2022) Study on the mechanical and tribological properties of C/C composites by CVI and PIP. *Emerging Materials Research* **11(4)**: 438–446, <https://doi.org/10.1680/jemmr.22.00089>.