

Invited Paper

## Origami for designing advanced structures

\*Jinkyu Yang<sup>1)</sup>

<sup>1)</sup> Department of Mechanical Engineering, Seoul National University, Seoul 08826,  
Korea

<sup>1)</sup> jkyang11@snu.ac.kr

### ABSTRACT

Advanced structures are a key enabling technology in many engineering fields, such as aerospace, automotive, biomedical, civil engineering, and robotics. In this talk, I will demonstrate how origami can be used as a design principle to realize such advanced structural systems. Specifically, I will show some examples, such as reconfigurable origami tessellations with tailorable mechanical properties; origami-based waveguide with a counter-intuitive impact mitigation mechanism; and composite origami tube for enhanced crashworthiness. Computational simulation and experimental demonstration results will be presented along with the discussion on the target engineering applications.

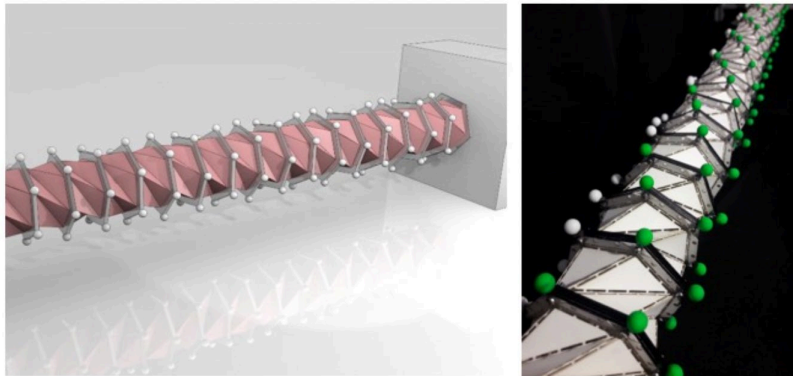


Fig. 1. Impact mitigating tube based on Kresling origami pattern.

### REFERENCES

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<sup>1)</sup> Professor

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