

NIKE GOES AUXETIC. WHY?

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Keywords: auxetic materials, topology optimization, vibration suppression

ABSTRACT

Auxetic structures are mechanical metamaterials that have a negative Poisson's ratio. Recent developments in the area of topology optimization give us the ability to design the microstructure of auxetic materials [1]. Their dynamic behavior is interesting and leads to useful applications. Auxetics show enhanced damping properties and can be used as passive damping materials [2]. Industry, including Nike [3], have submitted a number of patents for novel structures including auxetics. In the plenary lecture we will review theory and possible applications of auxetics, taking as starting point the newly launched athletic shoes of Nike with auxetic soles.

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coorganised by the Schools of Engineering
of Jordan University of Science and Technology (JUST), the Aristotle University of
Thessaloniki (AUTH) and the University of Birmingham (UoB)*

