



TECHNOLOGY

Collapsible Bicycle Helmet with Improved Crash Protection

OVERVIEW

Background:

Bike helmets are well known and widely used devices for protecting a bicycle rider's head from injuries. Furthermore, riding bicycles without wearing a helmet increases the risk of senior injury by 50%. Many bicycle riders in today's world don't wear helmets because they are cumbersome to carry around and aren't very visually attractive among other reasons. The use of expanded polystyrene (EPS) in current bicycle helmets makes for clunky and large areas in the helmet itself. There is an interest in using polyurea in place of EPS in order to potentially make the bike helmet collapsible, take up a smaller area, and even provide superior impact protection.

Innovation:

Researchers at the University of Maryland have come up with an energy absorbing polyurea material that is to be used in conjunction with bicycle helmets for superior protection/shock absorption displaying a tensile strength of 6671 psi and elongation of 506%. This material also displays the ability to retain shape and be put into a more compact area. The use of polyurea, in this specific application, also allows for higher durability while still being able to maintain a lighter weight and comfort level.

APPLICATIONS

- Helmets
- Shock absorbing

ADVANTAGES

- Better shock absorbing performance
- Smaller space needed
- Faster/ more accurate manufacturing and installation

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Additional Information

INSTITUTION

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PATENT STATUS

Pending

EXTERNAL RESOURCES

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