

3<sup>rd</sup> Euro Congress on

# STEEL AND STRUCTURAL ENGINEERING

November 16-17, 2017 | London, UK

## Novel lightweight sandwich panels with fire resistant core and a steel shell

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Structural insulated panels (SIP) or insulated sandwich panels are usually three-layer systems that are made of two outer shells of high strength materials with a lightweight, low-density core material separating them. SIPs are ideal for prefabricated (modular) construction. The core of SIPs is generally made of lightweight materials such as polyisocyanurate foam (PIR), expanded polystyrene (EPS) and polyurethane foam (PUR). EPS is still the most common core in the market and one of the disadvantages of the polymeric core in SIPs is its susceptibility to elevated temperatures as most of these foams are combustible. The recent significant fire events in high-rise buildings highlight the pressing need for developing low-cost fire-resistant sandwich panels, which can replace existing combustible panels. A novel sandwich panel with lightweight fire-resistant core and a thin steel skin has been developed.

### Biography

Ailar Hajimohammadi has completed her PhD from the University of Melbourne in 2011. Her thesis which has been converted into eight high impact journal papers, attracted more than 300 citations. Her research citation is 229% more than the global average in this field. After completing her PhD, she worked in a US-based global company as a consultant working with global construction companies and engineering consultancies. In this capacity, she received the Global Award of Excellence in 2013. Since June 2015, she has taken up a Postdoctoral position collaborating with an industry partner to bridge the gap between experimental research and practical applications of lightweight composite panels.

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