



全球汽车轻量化材料交流会

GLOBAL AUTOMOTIVE
LIGHTWEIGHT MATERIALS ASIA

2018

"Where the Lightweighting and Body In White Communities Meet in Asia"

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Board Member
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Can you please tell us a bit about yourself and your current scope of work?

As a professor at Dong-Eui University in Korea, teaching and research development are my main scope of work. Also, I am serving as a board member of Korean Welding and Joining Society and has been appointed as a director of Center for Education of Welding Engineering. At the same time I am a CEO of venture company(WCW), which develop innovative welding technology for car-body.

With more use of light materials for car bodies, what would be a major joining technology for carbody manufacturing?

The techniques for joining lightweight dissimilar materials, particularly aluminum, steel and plastics are becoming increasingly important in the manufacturing of hybrid structures. Therefore, including conventional welding and joining technology, various joining techniques (mechanical fastening and friction stir spot welding and so on) can be used by multi material concept in car designing due to diverse joining and geometrical configurations.

To join aluminum alloys for car bodies, which one will be more dominant process; resistance spot welding or mechanical fastening?

Currently the mechanical fastening is the dominant joining process for aluminum alloys body structure, but more use of resistance spot welding for aluminum alloys has been reported due to its cost effectiveness, improved welding quality and process feasibility.

To maintain the high quality of resistance spot weldability for high strength steels like hot stamping steels, what would be critical factors, which need to be considered?

More use of UHSSs for car-body structure, obtaining the high quality of resistance spot welding become more challenging task. Understanding of materials properties such as coating, strength, bulk resistance and contact resistance will help to optimize welding parameters (electrode force, current and weld time).

What do you see as the biggest challenge for the automotive industry?

Welding and joining point of view, development in reliable welding and joining technologies (or process) for multi-material assembly will be most challenging task.

What materials and technologies do you see having the most potential in delivering cost efficient automotive lightweighting?

More use of UHSS in multi-material car body structure will be cost effective with achieving lightweighting at the same time.

Without revealing the full details of your full presentation, with 50-100 words can you describe your presentation and how it will help your fellow colleagues?

My presentation will cover the research activities of Multi-Materials Integration (including welding and joining solution) to reduce the 15% of front body weight. Also, introduction of the case studies of smart solution by optimizing resistance spot welding parameters (Multi-pulse) to reduce the spatter and obtain high welding quality for light weight BIW will be helpful contents for OEM participants.

At the **3rd Global Automotive Lightweight Materials Asia Summit** in July, Yeongdo will be presenting a case study on Welding Technology Innovations For High Strength Steels And Light Weight Materials. For more information, visit: www.galm-asia.com/eng/