Preface

Since 2000, accompany with reformation and opening of China, the Chinese automobile industry has experienced a continuously rapid development and achieved remarkable accomplishment attracting worldwide attention.

In recent years, the automobile output and sales in China have ranked first in the world, China has become the largest automobile production and sale country in the world. In 2013, 22.1 million vehicles were produced in China, the vehicles stock have reached about 130 million, energy saving and emission reduction, safety during the development of automotive industry as a focus and key projects have been widely concerned.

Undoubtedly, automotive light-weight was the most direct and effective choice, hot stamping has become the leading technology for solutions with the aim to lightweight in combination with maintained and increased passenger safety and for acquiring high cost performance automobile parts. So, hot stamping technology achieved a high speed development once entering in China, in which more than 40 hot stamping lines has been built now. Meanwhile, the great market demand for hot stamping products further promotes the related research and application of this new technology, a more market prospect will emerge accompany with deeply understanding of hot stamping technology.

With increased usage of hot stamping technology, there are a lot of challenges in industrial development and research, including the demand for high properties sheet, process and application for components with tailored material properties, typical design method of hot stamping parts, fabrication and numerical simulation of hot stamping tool and die with cooling system, friction and wear characteristics of material at high temperature, the complete set of hot stamping equipments and related processing with intellectual property rights, the prediction and prevention for failure during hot stamping process, nondestructive testing for hot stamping parts, impact simulation during application of hot stamping parts and with tailored material properties in the vehicle, the new technology for hot stamping coupling with Q&PT for getting automotive parts with much higher strength and elongation product, and the expanded application of hot stamping in commercial vehicle, et al.

Under the background and facing to the mentioned focus problem, the international conference on hot stamping of UHSS was hold, the conference arouses great interests and attentions from domestic and foreign researchers in hot stamping field, More than 60 papers have been accepted which almost cover all the current topics of hot stamping, more than 300 people from scientific institutes, universities and companies attended this conference. All the authors of accepted papers gave excellent presentations in this meeting. Participants have exchanged in detail around hot and focus point of hot stamping. On the basis of the conference achievement, we collect and compile these research papers into this conference proceeding, in which the content represents the latest international academic and technological progress of hot stamping. Hereon, we are sincerely grateful to the attendees' interest and support as well as their contributions to the hot stamping development. We are also grateful to the great efforts of the editors, reviewers and publisher engaged in this conference proceeding.

We are look forward to the next international hot stamping conference in China.

Mingtu Ma and Yisheng Zhang

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Organized by:

China Automotive Engineering Research Institute Co., Ltd
State Key Laboratory of Materials Processing and Die & Mould Technology
State Key Laboratory of Rolling and automation

Co-organized by:

Materials Institution, Chinese Mechanical Engineering Society
Materials Committee of SAE-China
China Association of Machinery Manufacturing Technology
Shanghai Society of Automotive Engineers
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