FOREWORD

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In the midst of large changes in the environment surrounding automobiles and steel industries, including the problem of global warming (CO_2), the new era of global mega-competition, and the need to build people-friendly automobiles, a number of urgent and important challenges now face the automobiles and steel industries. The concrete issues are exemplified in the keywords weight reduction, crashworthiness, pedestrian safety, NVH (noise and vibration harshness), corrosion resistance, durability, maneuverability, shortening of the development cycle (speed), and cost.

With the functions required in automobiles becoming increasingly diverse and advanced, as seen here, applications of high tensile materials (high tensile strength steel), which satisfy both weight reduction and crashworthiness requirements, have increased remarkably in recent years, contributing to more efficient fuel economy, protection of the global environment, and improved safety.

JFE Steel does not simply supply a line of high tensile products which respond to diverse needs, but also to participate in new car development from the earliest stage and devotes great effort to EVI (Early Vendors' Involvement) activities in which it develops and proposes parts for auto-making in line with the customer's new vehicle concept, including processing methods and performance evaluation techniques from the material viewpoint.

In particular, because formability generally deteriorates and deviations increase as strength increases, efficient auto-making which considers material performance from an earlier stage, that is, from the stage of auto body design, becomes important in high tensile products. In this sense, JFE Steel believes that EVI activities which propose solutions from both the material viewpoint and the processing/application technology viewpoint will become increasingly important in the future.

JFE Technical Report No. 4, "Special Issue on Materials and Application Technologies for Automotive Use," introduced some of this company's distinctive EVI technologies and product lines. In this issue, No. 16, "Special Issue on High Strength Steel Sheets," we have summarized the current status and future outlook from both the material viewpoint and the processing/application technology viewpoint, focusing on high tensile materials, and also presented papers on the details of various state of the art technologies.

From the material (product) viewpoint, JFE Steel's "Only One" and "Number One" product line of high tensile strength steels for exposed panels, structural parts, and suspension and chassis parts of automobiles are discussed in technical papers, based not only on material performance, but also the manufacturing process and the principles on which the products are based.

In the area of application technologies, this Special Issue includes concrete examples of application of JFE Steel's original welding technologies and inspection technologies, beginning with efforts with customers, particularly in simulation evaluation/prediction techniques.

Six new products/new technologies are also introduced, including JFE Steel's newly-developed and commercialized high lubricity GA steel sheet, JAZ®.

As a reliable partner with the automobile industry, JFE Steel is committed to contributing to vehicle-making with the high functions required by the times through the development of new materials and new technologies in the future, as in the past. We sincerely request the guidance and encouragement of all concerned.