



Remarks on Special Issue on Solutions for Future Automobile Design

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We are pleased to announce the publication of this special issue on automotive technologies, the first in six years. Through close collaboration with its surrounding industries, the Japanese automotive industry has continued to develop, maintaining strong competitiveness in the global market while serving as a key driver of Japan's economic growth. In parallel, the steel industry has continuously evolved in response to changes in the automotive sector.

Reflecting on the technological evolution of automotive steel sheets during a period of rapid economic growth, it is clear that integrated steelmaking technologies, including continuous processing, were developed to enable mass production. This enabled the stable supply of high-quality, large-volume materials. In the 2000s, as vehicle safety regulations became more stringent and efforts to improve fuel efficiency intensified, our company focused on developing high-tensile-strength steel materials. These trends continue today. At the same time, new expectations have emerged, including the need to achieve carbon neutrality and proposals to address vehicle electrification. Furthermore, the industry now faces additional challenges, such as population decline and labour shortages, which highlight the need for further advancements in manufacturing technology.

This special issue therefore focuses on technologies that address these challenges in the automotive industry through close collaboration with our customers.

As is well known, steel is a material that enables closed-loop recycling and excels in reducing CO₂ emissions across its entire life cycle, making it indispensable to the circular economy. NSCarbolex™ Neutral is GX steel to which verified greenhouse gas emission reductions, achieved in Nippon Steel's manufacturing processes, are allocated through a GX mass balance approach. This enables customers to contribute to CO₂ emission reductions while maintaining equivalent product quality.

We will also introduce our recent R&D activities, including the next-generation automotive concept, 'NSafe™ -AutoConcept ECO³', which is a key component of the 'NSCarbolex™ Solution'. This solution enables us to offer our automotive customers more than just materials, providing them with comprehensive proposals for optimized materials and solutions.

The strength of Japanese manufacturing lies in its ability to integrate materials, structures, processing methods and evaluation technologies through cross-functional collaboration that transcends organizational boundaries. In collaboration with the automotive industry, which is currently undergoing profound transformation, we will continue to pursue technological advancement and value creation. Our aim is to design the grand vision of next-generation mobility through materials innovation. We hope that readers will see this special issue as evidence of our strong commitment and aspirations.