

## **Recent Trend of Research and Development on Materials for Railway**

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Services offered by railway operators, as a prerequisite on assured safety, responding to diverse requirements satisfying railway users, and superior in economical factors, are indispensable for promoting competitions and collaboration with other transport modes. In addition to the above factors recently, dealing with global risks of resource shortage and supply insecurity is recognized. R&D items on railway materials have been focused not limited to conventional high-efficiency, high-performance and high economical performance, also on ecological performance, such as a low environmental load, new energy and energy saving. The introduction of new materials, such as eco-materials, intelligent materials, and nano-materials are essential for railway area to promote innovative changes in the railway field.