

Subjects on Track Technology focussed on from Tribological Point of View

Makoto ISHIDA

Currently some subjects on track technology are focused on from the tribological point of view. Basically rail problems related to wheel/rail contact are typical tribological issues. Besides rail problems, there are some tribological subjects in the field of track technology. Regarding various interfaces between rail and spring clip of rail fastener, rail and track pad, rail and fish plate, sleeper and ballast, and others involved in track structures, there are many problems or important subjects in order to understand their friction mechanisms and to improve the efficiency of maintenance. However, those subjects have not been tribologically studied enough except wheel/rail interface. On the other hand, track structures and components have been so far designed ensuring some appropriate safety margin under the consideration of large variation of tribological phenomena. In the latest decade, the coefficient of friction of wheel/rail interface has been broadly investigated since a typical wheel flange climb derailment was caused some years ago. Since then the tribological approach has been recognized as a helpful measure to investigate rolling and/or sliding phenomena of wheel/rail systems. This paper describes the current status of research subjects of track technology related to tribological aspects.