



Gear Load-Independent Power Losses

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Message from the Guest Editor

Gear systems are currently widely used in all fields of industry. Generally speaking, classic oil sump and splash lubrication are exploited at a low and moderate speed, while oil jet lubrication is for high-speed conditions. The former is related to churning phenomena, and the latter is with windage behavior.

In the last few decades, important research on gear load-independent power losses for various types of gear has been extensive, especially for gear drag power losses (churning power losses, windage power losses, etc.). However, the transition between churning and windage phenomena for an isolated gear or a gear pair is relatively unexplored. Furthermore, no clear criterion is defined and published for suggesting which lubrication method for gears to select and which drag power losses model to use in different speed ranges.

The current Special Issue is aimed at the latest developments concerning gear-load-independent power loss mechanisms (such as churning power losses, windage power losses, pocketing power losses, and impacting power losses) and lubrication technology and the effect of gear working parameters upon their lubrication behavior.

