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Title: Recent developments and performance review of metal working fluids

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Abstract: There have been continues efforts in developing novel metal working fluids (MWF) to replace the conventional mineral oil based MWF. This paper reviews recent developments in cutting fluids performance and tribological studies of different MWF formulation including the application of vegetable oils, fatty acid methyl ester, ionic liquids and nanolubricants. It was concluded that more studies should be focused on obtaining theoretical models which can predict the performance of a MWF based on its physical properties. In order to have a holistic view on the overall feasibility and possibility of large scale industrial application, further studies on the stability and life cycle assessment of the novel MWF are required.

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