

Rolling Bearing Lubrication With Oil/Refrigerant Mixtures: A Review with Contributions

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In this talk aspects related to rolling bearing lubrication with oil/refrigerant fluids is treated. This is relevant for heat pumps and refrigerant compressors, where a simple reduction of viscosity to account for the refrigerant dilution in oil is not sufficient. The refrigerant will modify the pressure viscosity and compressibility as well. This topic has gained importance with the increasing usage of high temperature heat pumps combined with more environmentally friendly refrigerants, aspects which not necessarily are rolling-bearing friendly. Lubricant mixture laws, effects of dilution and potential failure modes of bearings lubricated in these conditions are discussed. All this considering literature information equally as own development work.