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On the benefits of sub-zero air supplemented minimum quantity lubrication systems: An experimental and mechanistic investigation on end milling of Ti-6-Al-4-V alloy

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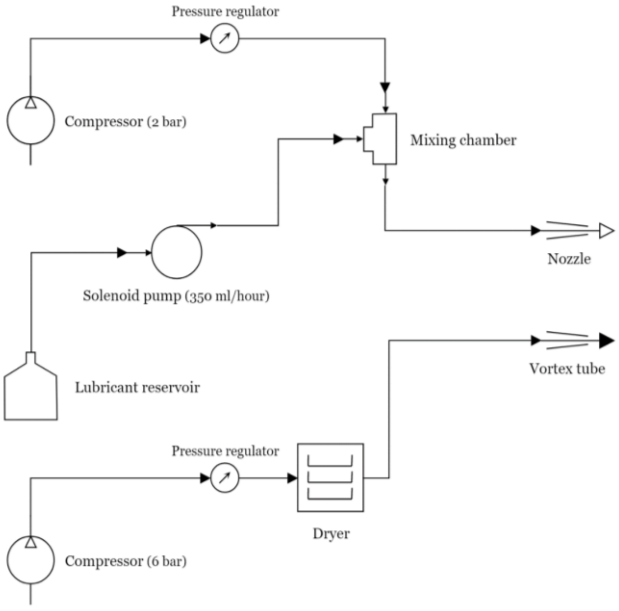
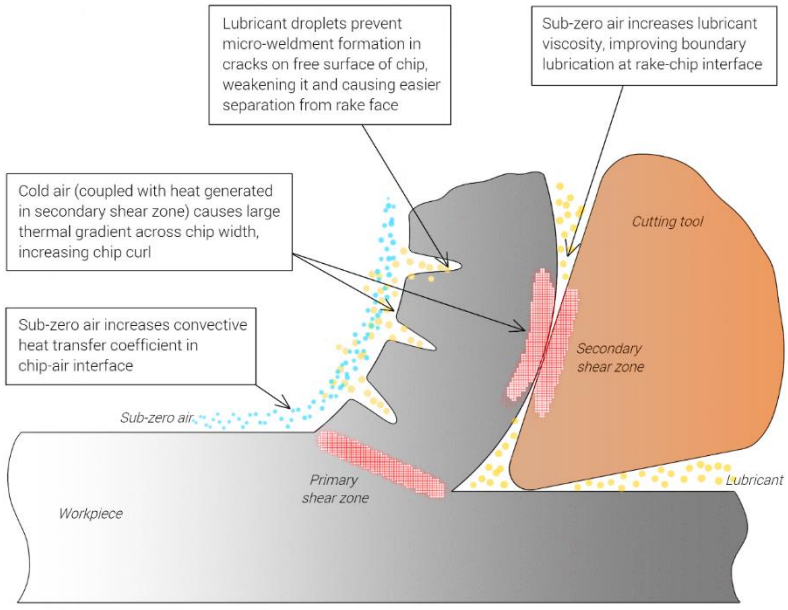
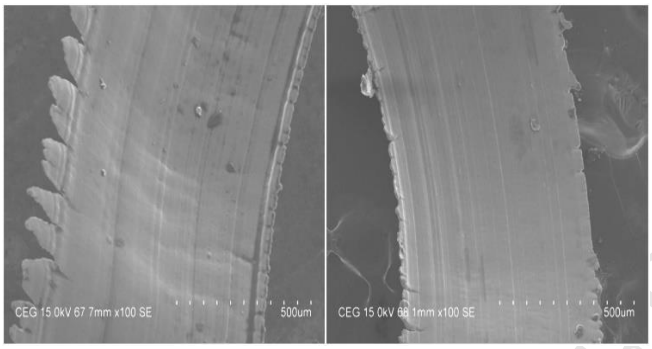
Schematic of MQCL system

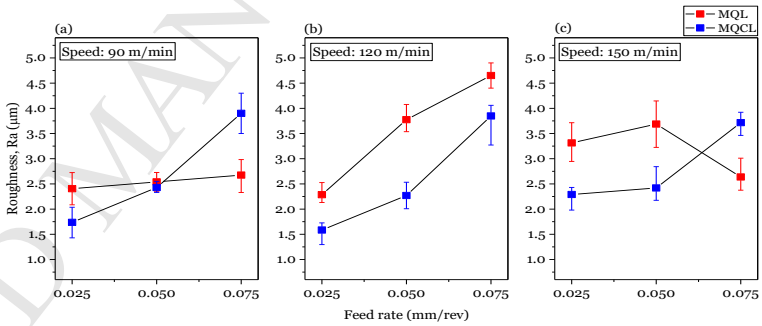


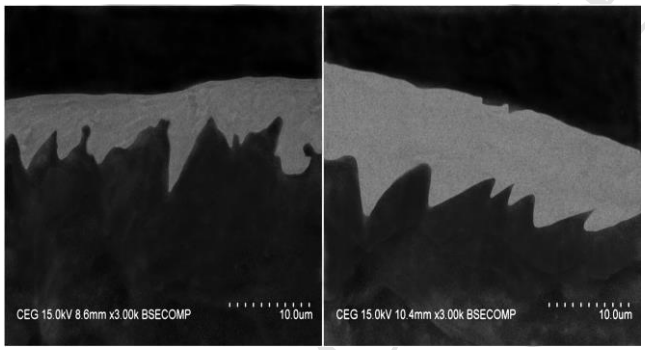
Mechanism of cooling and lubrication in MQCL

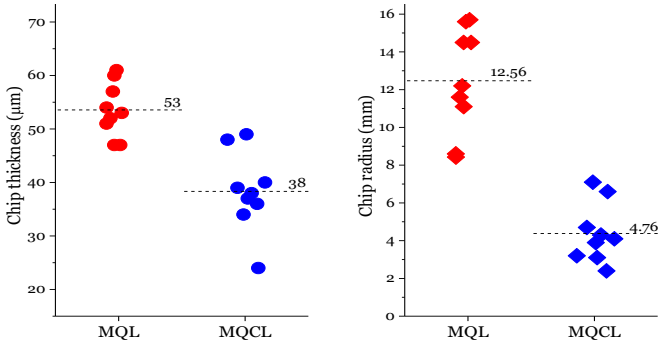


Comparison of chip free surface, underside roughness, segmentation, thickness and radii for MQL and MQCL









Tool rake-chip friction coefficient values for MQL and MQCL