**Title:** Cryogenic machining process of difficult-to-machine materials

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**Abstract:**

Cryogenic machining is a cutting process applying cryogenic coolants including the liquid nitrogen (LN2). When the cryogenic coolants are sprayed, reduced cutting temperature can improve the tool life during machining. In many researches, the cryogenic machining process has been applied to difficult-to-machine materials. Materials, that cause low machinability, are classified as difficult-to-machine materials. The materials have been widely used in industries due to their great mechanical properties, so the machinability is required to be improved by cryogenic machining. The numerical/experimental analyses on the cryogenic machining of difficult-to-machine materials have been studied, focusing on the improvement of machinability and understand of machining mechanism.