EXPERIMENTAL INVESTIGATION **ON FUNDAMENTALS OF ROCK-BIT INTERACTIONS USING IMPREGNATED DIAMOND BITS**

MINEX CRC PROGRAM 1

Drilling Technologies

PHD PROJECT

Curtin University

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RESEARCH PROJECT

Fundamentals of rock-bit interactions were outlined and reviewed but there were some concerns remained to be solved. Bit-rock interaction needs to be quantitatively characterised to achieve drilling automation, not to mention impregnated diamond coring bits are still a favourable option during mineral explorations. Undoubtedly, the project will contribute in MinEx CRC's Drilling Optimisation project, as well as provide analytical tools in decision making which is related to MinEx CRC's Program 2 research.

The goal of this project is to reveal the intrinsic variables governed by both rock properties and matrix properties. The friction coefficient between tungsten carbide matrix and the rock being drilled, as well as a wear related property.

Besides that, these unknowns are highly linked with the heterogeneity of the rock, thus the aim of this project is to address the difference in it which can be later on to be stored as input materials for drilling automation.