

EXPERIMENTAL STUDY OF THE EFFECT OF BIT WEAR IN PERCUSSION DRILLING

PHD PROJECT

Curtin University

PRIMARY SUPERVISOR

Dr. Thomas Richard

e: Thomas.Richard@curtin.edu.au

t: +61 8 9266 4866

CO-SUPERVISORS

Assoc. Prof. Masood Mostofi and Dr. Yevhen Kovalyshen (Curtin University),
Henna Jussila (Sandvik)

PARTICIPATING ORGANISATIONS



RESEARCH PROJECT

This project is a follow up on the PhD thesis "Experimental study of down-hole percussive drilling". The project aims to further our understanding of the root cause of the sweet spot and explore the effect of bit wear and rock properties on drilling performance. The research will focus first on extending some of the previous results to higher impact energy but also other rock material. The research will then explore how the state of wear of the buttons on the bit face affects the relation between the axial thrust, impact energy and rate of penetration.

One of the practical goals of the research is to develop methodology to infer bit wear and rock strength from drilling data.

Experimental work will be conducted on the state of the art equipment in the Drilling Mechanics Laboratory of DARC. The equipment Woody has been upgraded to allow for different bit design, and higher impact energy.