



INTERNATIONAL OPERATIONS & MAINTENANCE CONFERENCE
IN THE ARAB COUNTRIES

Autonomous Unmanned Aerial Vehicles for Pump Station Predictive Maintenance Works

Mohammed Abdulaziz

PhD, MSc, BSc, LSSBB

CTO - SIMTRAN

Adj. Professor

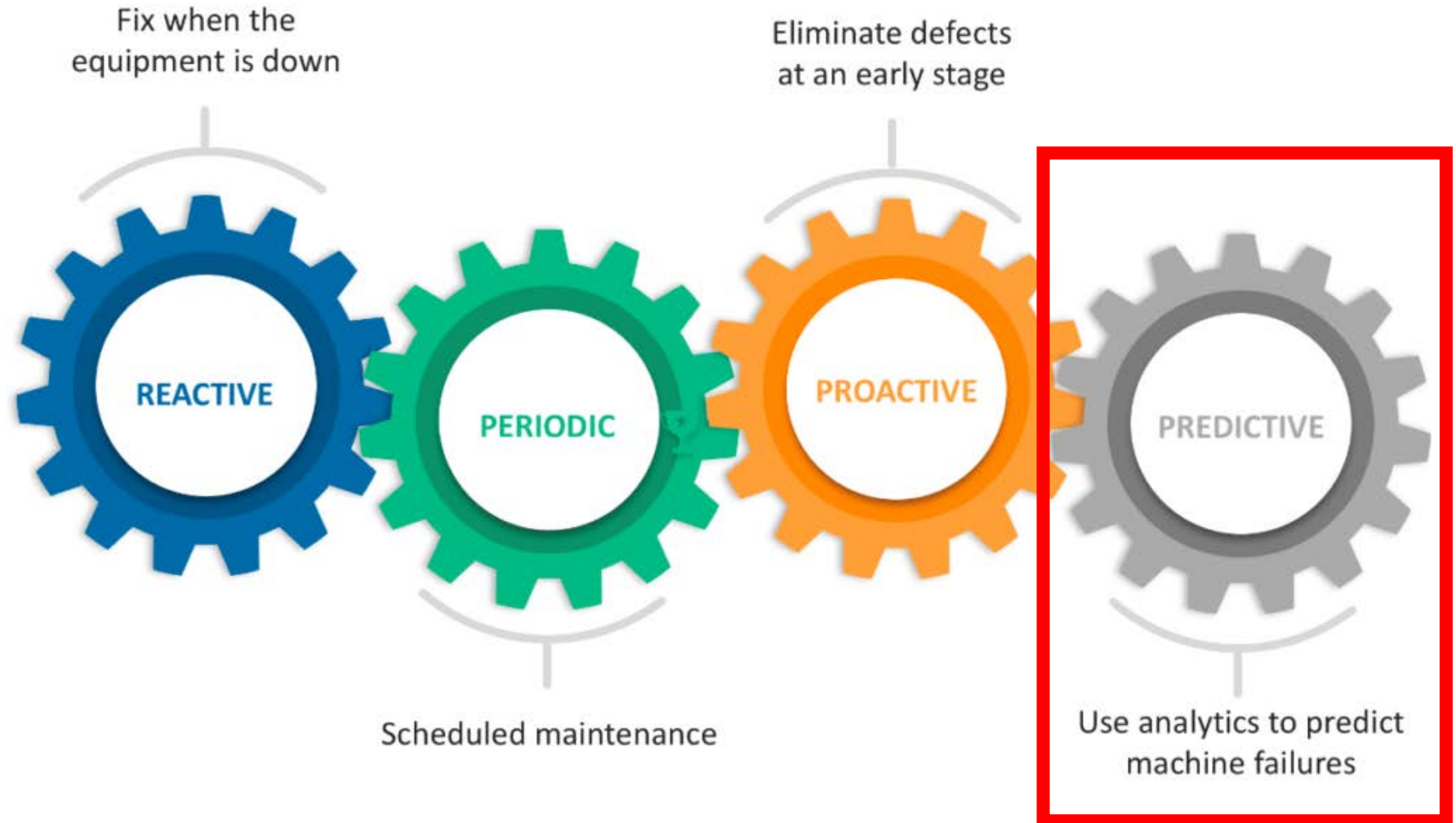
University of applied science Bad Sooden-Allendorf

Germany

40



Introduction



Introduction



✓ Reduces equipment costs

✓ Reduces repair costs

✓ Increases safety

✓ Increases revenue

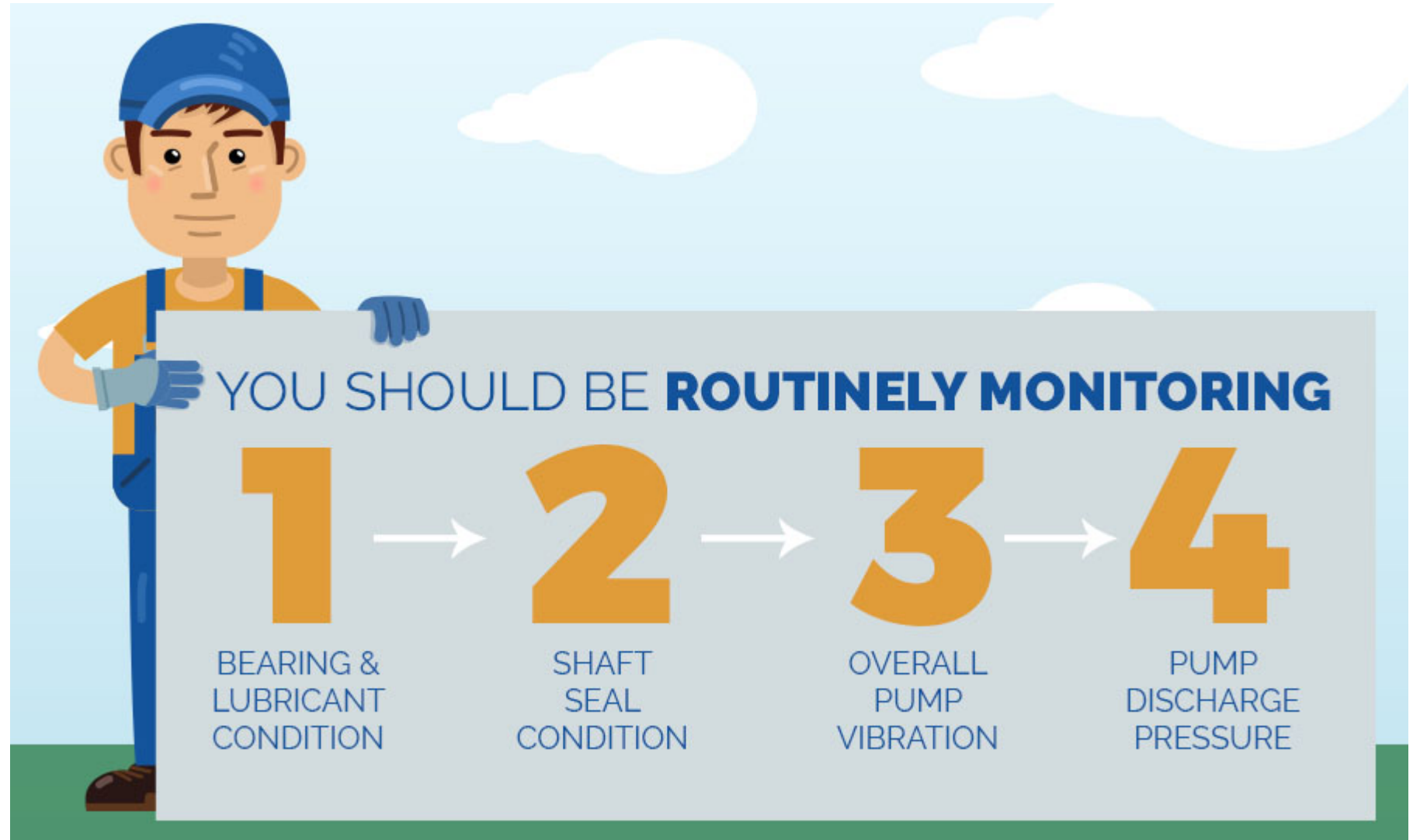
✓ Reduces lost production time

✓ Increases employee time

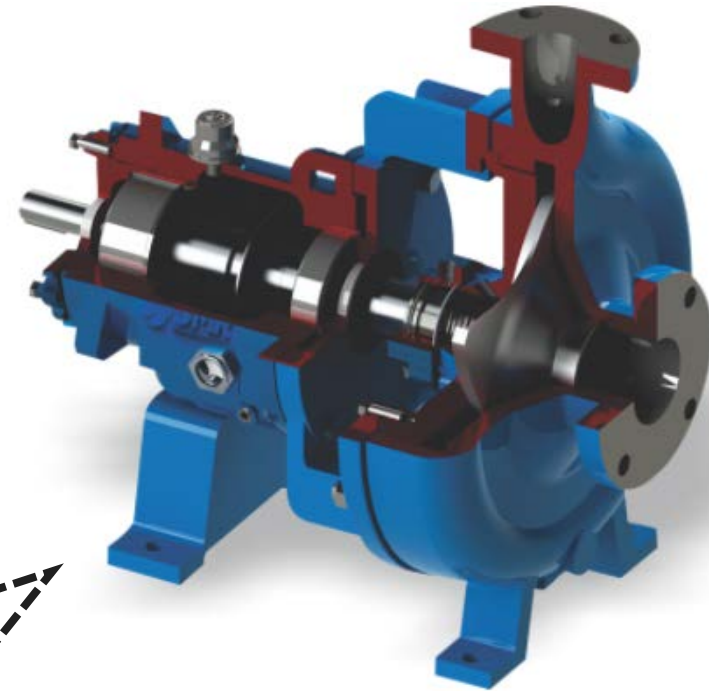
The benefits of
predictive maintenance

Bosch

Introduction



Introduction



Bearing and lubricant condition

Monitor bearing temperatures, lubricant level and vibration. The lubricant should be clear with no signs of frothing. Excessive vibration and an increase in bearing temperature may indicate imminent failure.

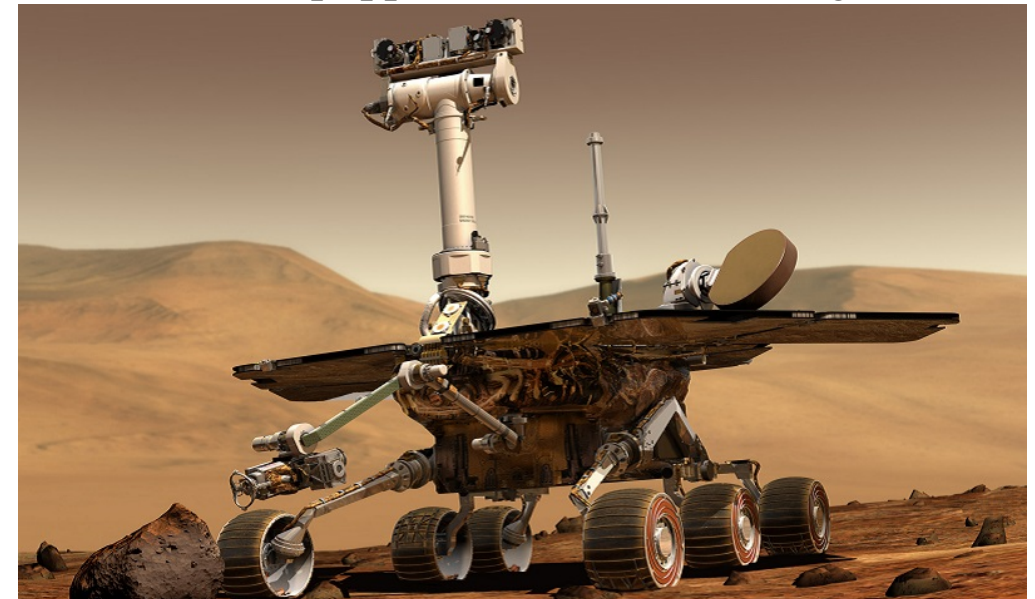
Drones as an industry 4.0 maintenance solution



X-47B UCAS-D semi-autonomous

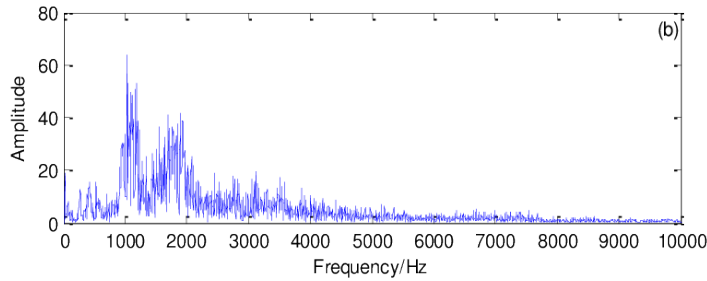
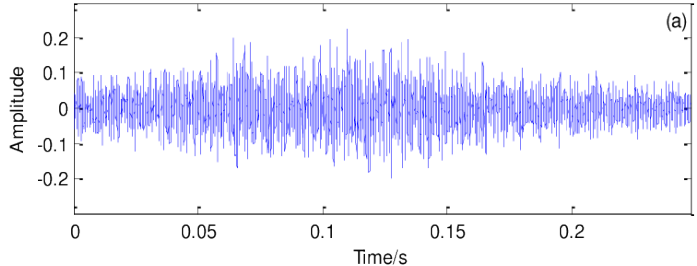
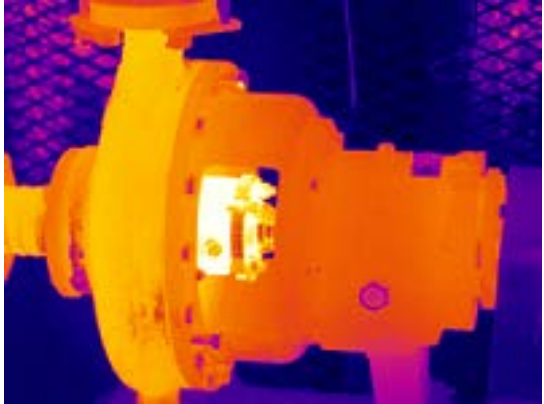
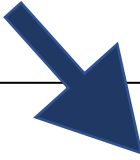
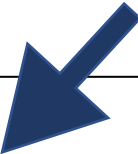


Drone equipped with remote sensing unit



NASA autonomous navigated mars rover

Drones as an industry 4.0 maintenance solution



Drones as an industry 4.0 maintenance solution

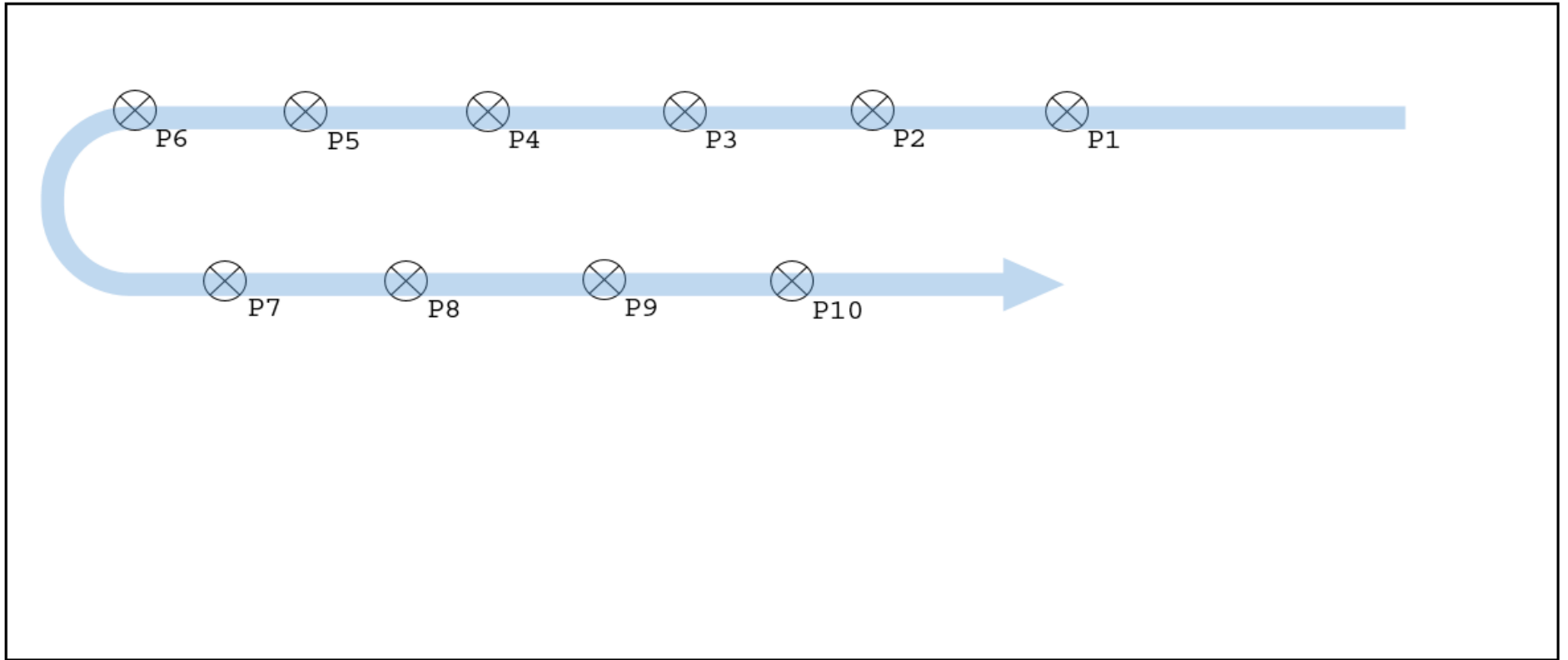
Text

Rail Safety IDEA Project – July 2018
University of New Mexico

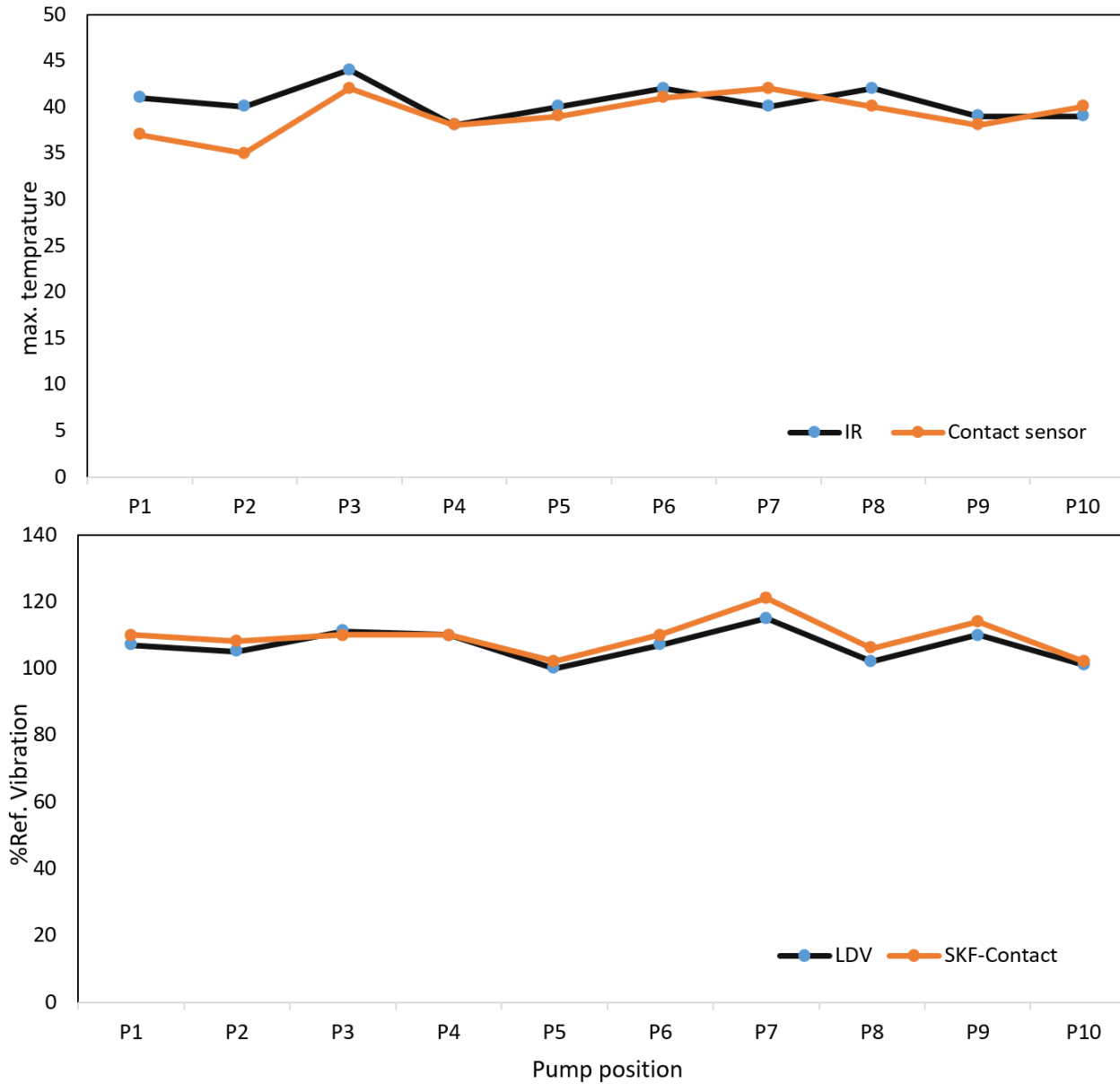


4.0

Case Study



Results



Conclusions



- The time consumed was reduced by 40% if compared by classic measurements.
- The cost was reduced as well.
- The measurement method has a good accuracy.

Thank you for your attention!

Danke für Ihre Aufmerksamkeit!

Mohammed Abdulaziz

mohammed.abdulaziz@stud.uni-due.de

+4917655458664

