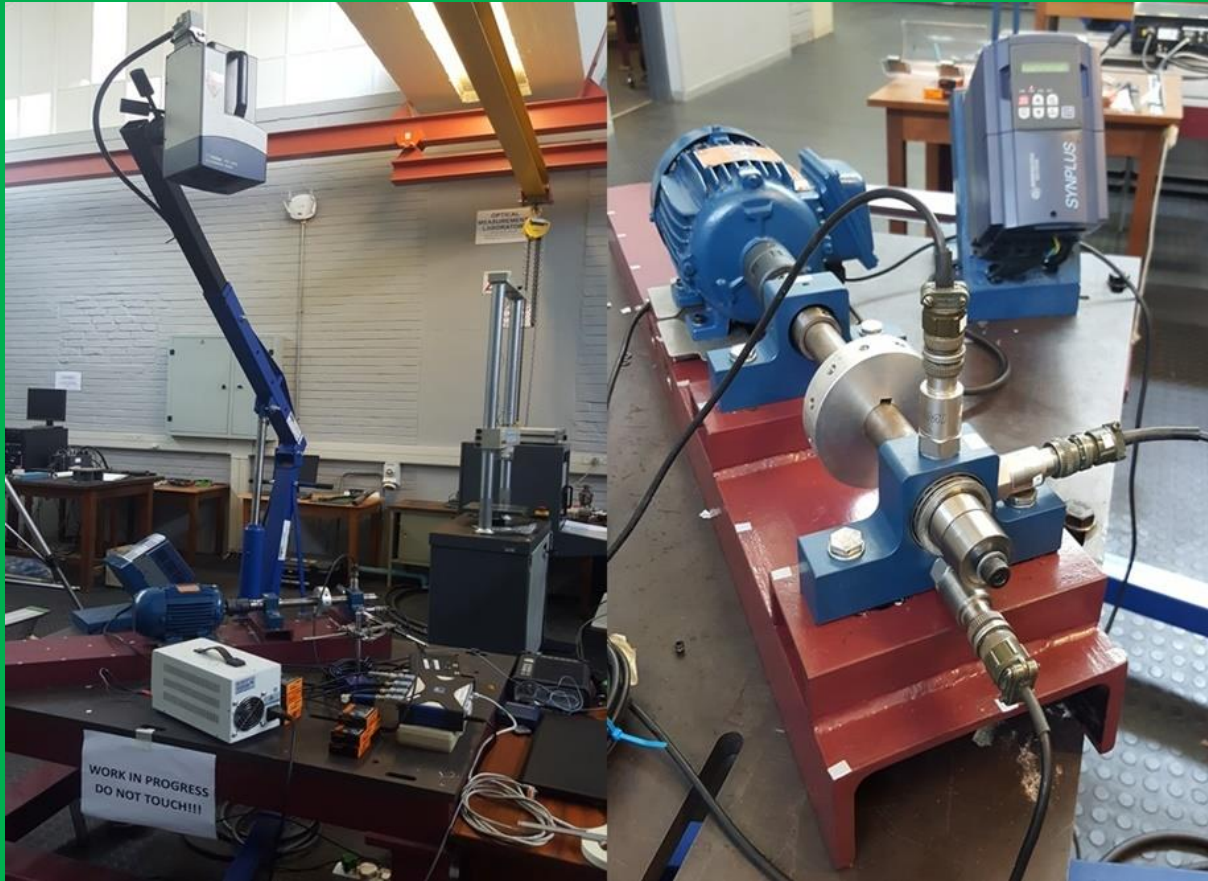# New SAG MILL experimental test bench
Ready for use

Rock drill (Smart drill) Testbench

New Bearing test bench to replace old

The old "bench grinder" bearing test bench had reached its end of life and was replaced by a new and more practical test bench that can accommodate bearing pre-load, unbalance and shaft misalignment.

New Modular Gears Test Bench in an advanced design stage

A new Gears test bench that will replace the current CVT test bench will soon be manufactured.

Dr Stephan Schmidt is finalising the design based on the concept of a modular test bench that will allow for various load conditions to be implemented such as connecting a mini crusher to the drive. Initialy the load will be applied via a secondary electric motor.

Concept
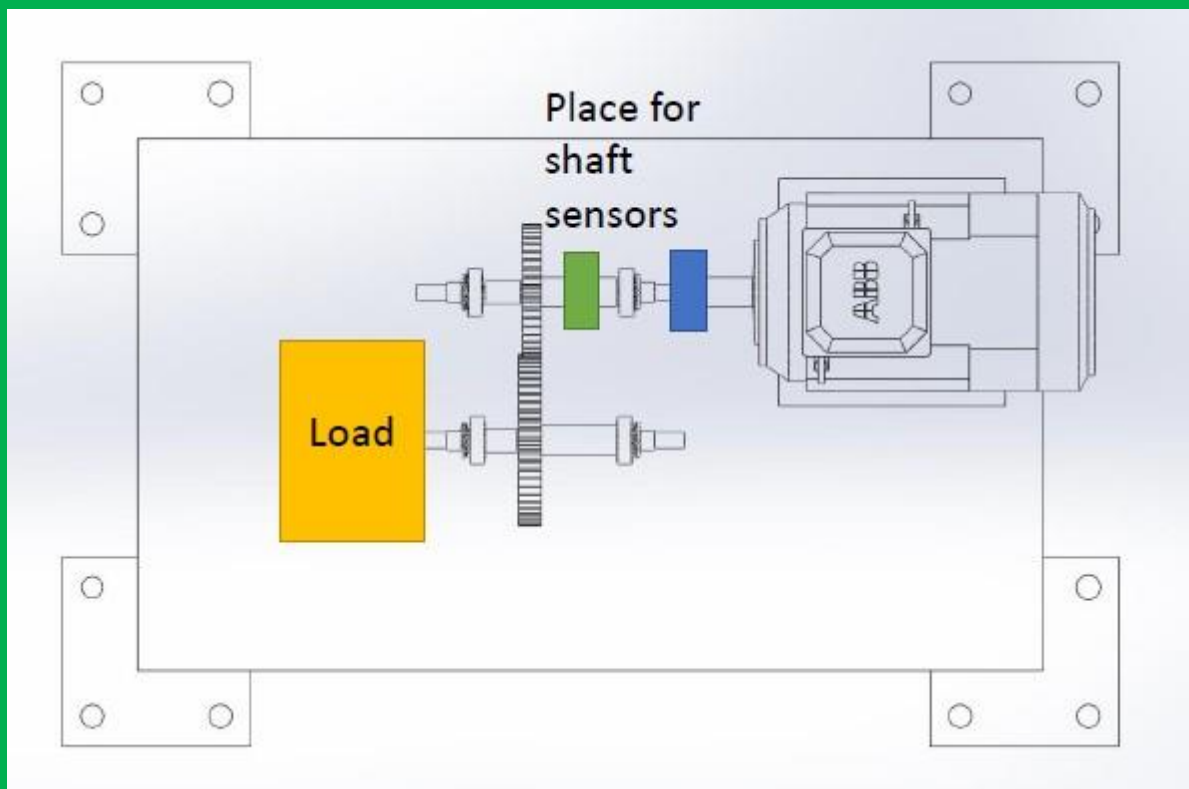
Wind Turbine Test bench in creation

In March 2015 Paul Van Niekerk started building on the first wind turbine test facility in the ELRE Lab. Paul, a graduate student under the supervision of prof. Heyns, is developing this facility for his master's degree studies. The 1.6 m turbine rotor will be driven by a 7.5 Kw electric fan through a custom designed tunnel with 1.8 m diameter. Completion is scheduled for end of May 2015 at which time vibration characteristic measurements will start in full earnest.

Images showing the Turbine and Fan blades and construction of the tunnel intake

The tunnel intake and turbine rotor in position

Lesser known technology investigated

Post graduate student Dawie Diamond is currently conducting research into Eulerian video analysis, a technique that can be used as a tool for investigating the dynamic behaviour of structures. In contrast to conventional video measurement methods, such as Digital Image Correlation (DIC), Eulerian video analysis requires no surface preparation of the structure being measured. This opens up a whole new field of practical applications. The method employ's the use of high speed video footage and phase based image processing. The graph below shows the method's accuracy as a function of image resolution. More on the subject coming soon.