



GRÄNGES

Lifetime prediction for aluminum alloys with machine learning

BACKGROUND

Gränges is a global producer of aluminum alloys used for making different engineering components. Working efficiency and lifetime prediction of these components is an important and challenging task for Gränges and our customers. These normally required lots of lab trial production which takes months even years to complete. The aim of this work is to reduce the trial period by using machine learning and data science techniques.

LIFETIME PREDICTION FOR ALUMINIUM ALLOYS WITH MACHINE LEARNING

One of the important properties of Gränges aluminum alloys that affect the lifetime is corrosion potential. Corrosion potential can be interpreted as how much an alloy could be resistant to real service life conditions. Thus, the corrosion potentials of an alloy could be correlated with the lifetime of engineering components. Gränges has measured and collected data regarding the production process, chemical composition, and corrosion potential of the alloys that have been produced for more than a hundred years.

The aim of this work is to collect and organize these data. Find the relation between the chemical composition of an alloy and corrosion potential values. These could give insight into important parameters which could affect the corrosion property of an alloy. Also, help to reduce the trial production of new alloys.

Good to have

- Have interest to do experimental work in the laboratory.
- Be organized and enjoy problem solving.
- Be a motivated hands-on experimentalist with a keen eye for communication and teamwork.

Opportunities

- Work on an appealing project for the industry and scientific community
- Learn how to do a high-level research work
- Gain skills in advanced materials characterization techniques
- Visit the production plant and laboratories of Gränges (Sweden)
- Increase your writing and presentation skills

Submit your application [here](#), the selection is ongoing.

