PhD notebook

Hugo REYMOND

Contents

1 Administration

→ Create tax card, need contract information as salary

⇒ link is here and go to Forskudsopgørelse

→ Webinar "moving to Denmark and PhD at DTU

⇒ take the session 2026/02/20 from 1pm to 2 pm

→ Mandaroty introduction culture day

⇒ Chose the option 10 March from 10:45 am to 2 pm

→ Introduction to responsible conduct of research and research data management for new employees

⇒ chose 6 April from 9am to 1 pm

2 Teaching

2.1 Course Preparation

3 Bibliography

3.1 Powder production processes

3.1.1 Gas atomization

3.1.2 Water atomization

3.1.3 Centrifugal atomization

3.1.4 Plasma atomization

3.1.5 Mechanical attrition and alloying

3.1.6 Melt spinning

3.1.7 Rotating electrode process (REP)

3.1.8 Chemical processes

3.2 Factors influencing metallic powder size and quality during gas atomization

3.2.1 Feedstock melting

Feedstock property and geometry (powder, scrap, wire, metal alloy elements or pre-alloyed) impact the powder quality. If possible, taking a sample of the homogenous melted material allowing to analyze the chemistry can help to decide whether an alloying element is needed to be added [1].

Both opened and closed melting systems are used in gas atomization.

3.2.2 Gaz environment

3.2.3 Nozzle geometry

TO-DO LIST

References

[1] Kazybek Kassym and Asma Perveen. Atomization processes of metal powders for 3D printing. *Materials Today: Proceedings*, 26:1727–1733, 2020.