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Kanto, P. & Huhtanen, S. (2025) Insights from Rheology Power Week 2025. TAMK International, 11.3.2025.

URL: <https://blogs.tuni.fi/tamk-international/education/insights-from-rheology-power-week-2025/>

## Insights from Rheology Power Week 2025

11.3.2025 — Riikka Kramer



Simo Huhtanen and Piia Kanto from TAMK together with Markus Nemeth from Anton Paar Germany GmbH Nordic AB.

Last week, we had the opportunity to participate in Rheology Power Week 2025, which was organised by Anton Paar Nordic AB in Malmö, Sweden. The event provided a good overview of various aspects of rheology, which is the study of material flow and deformation (Mezger 2014). The event had international participants from both industry and universities.

### Why We Participated

Our main motivation for attending was to enhance our understanding of rheology and analytical applications in the context of Selective Laser Sintering (SLS) powder analysis. The quality of SLS powder significantly affects the processability of powder as well as the final properties of printed parts, and rheological characterisation is one way for optimising material behavior (Yang et al 2023). By attending this event, we gained knowledge that would support our research and industrial applications.

### Program Highlights

The program covered a broad range of rheology-related topics, starting with fundamental principles, e.g. viscosity, shear stress, and viscoelastic behavior. In addition to general rheology, the event featured e.g. specialised session focusing on polymer rheology. This session was relevant for us, as it explored methods for characterising material properties such as melting and glass transition

temperature, average molar mass and molar mass distribution, zero-shear viscosity, which are important aspects for ensuring high-quality SLS powder performance.

### **Key Takeaways**

The training provided a comprehensive overview of rheology's fundamental concepts and techniques, covering what can be studied, how measurements are conducted, and how to interpret the results. Beyond technical learning, the event provided valuable networking opportunities with experts from academia and industry.

### **Conclusion**

Rheology Power Week 2025 was an intensive experience, equipping us with knowledge to enhance our work with SLS powder quality assessment. We are excited to apply these learnings in our research and look forward to future developments in the field.

### References:

Mezger, T.G., 2014, Applied Rheology With Joe Flow on Rheology Road, Anton Paar GmbH [2014] 1st ed. Jan., 2015

Yang, F., Zobeiry, N., Mamidala, R. and Chen X. 2023. A review of aging, degradation, and reusability of PA12 powders in selective laser sintering additive manufacturing, Materials Today Communications, [Volume 34](#), March 2023, 105279, <https://doi.org/10.1016/j.mtcomm.2022.105279>

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