



Bond3D has developed a revolutionary printing technology to produce parts made from high-performance polymers through additive manufacturing. The products have the same characteristics as products that are currently produced with conventional production technologies such as machining or injection molding. Since the foundation in 2014, Bond3D has been developing the 3D printer to put the innovative concepts into practice. The new generation of printers that are currently being developed can print the parts quickly, in high quality and reproducibly.

Does High Tech appeal to you? And an environment in which multidisciplinary insight is self-evident? Do you seize such a technical challenge with both hands and do you want to work with your colleagues to develop concepts for this? Take your chance now and get started with Bond3D and make an important contribution to the development of this revolutionary printer.

## Internship: transient CFD Modelling of PEEK deposition by a 3D printer

To gain more insight into the deposition of a material by a 3D printer, a 3D Computational Fluid Dynamics (CFD) model has to be built. The goal of the assignment is to improve the controlled deposition of material during starts/stops. More specifically:

- Understanding of dynamics flow behavior inside and outside the nozzle
  - What is the transfer function from feeder motion to material flow out of the nozzle?
  - With which accuracy can the flow be predicted and thus controlled?
- Understanding of extrudate temperature in dynamic situations
  - What is the influence of feed rate changes on the temperature of the material that flows out of the nozzle?
  - If significant, how can we reduce variations in extrudate temperature?

The internship is a combination of fluid-, thermal- & control dynamics.

### Responsibilities and duties

- The CFD model should be simulated with Ansys. The intern should determine how the model is built and which effects and parameters should be taken into account;
- Tests should be carried out on the test machine to validate the model;
- Communicate with relevant stakeholders to pursue the goal.

### Expectations

- Studying to get a master's degree in Applied Physics, Mechanical Engineering or similar;
- Familiar with Ansys is a benefit;
- Affinity with 3D printing is a benefit;
- Fluent command of both written and spoken English;
- You're creative, driven, proactive, pragmatic, communicative and a team player. You enjoy working together with various disciplines within the organization where communication with colleagues is non-hierarchical and direct.

Does this internship job description appeal to you? Send your motivational letter and your CV to [recruitment@bond3d.com](mailto:recruitment@bond3d.com), attn. Arry Wegdam