FluX AM | Use of Fluids in Material-Extruding Additive Manufacturing

Enabling Industries Through Cost-Efficient Small-Scale Pellet Extrusion

Motivation and Relevance

- Filament-based technologies are characterized by a low melting rate, high material costs and low layer bonding
- Current pellet-based processes are characterized by low extrusion accuracy, high extruder weight and high extruder cost

Approach

- Evaluation of patent application from RWTH Aachen:
  - Extruder with melting pot instead of extrusion screw
  - Secondary fluid with low density to heat up pellets within liquid

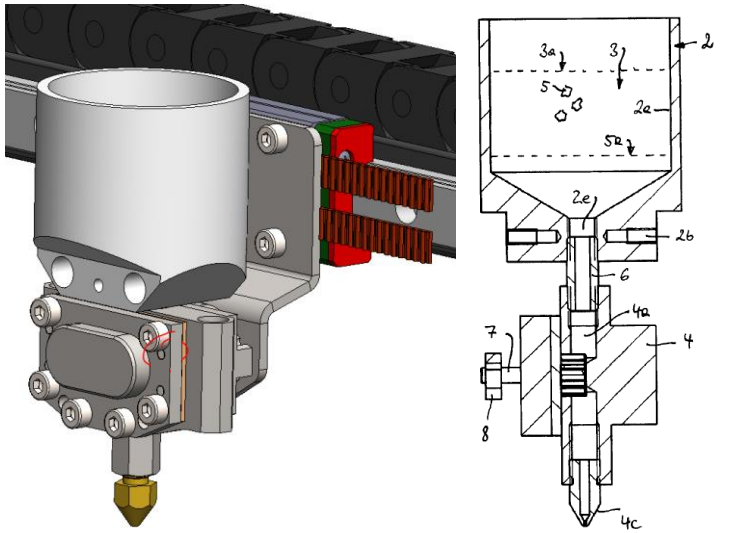
Results

- Temporary extrusion rates up to 2.4 kg/h @ 0.4 mm nozzle (melting rate lower)
- Printed parts in filament quality with no negative effect if shredded material or bigger material chunks are used

Research Area

- Pellet extrusion
- Productivity
- Print Quality
- Recycling

Picture



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