SE-JRA: Short Update

Gas sorption - Aerodynamic levitation

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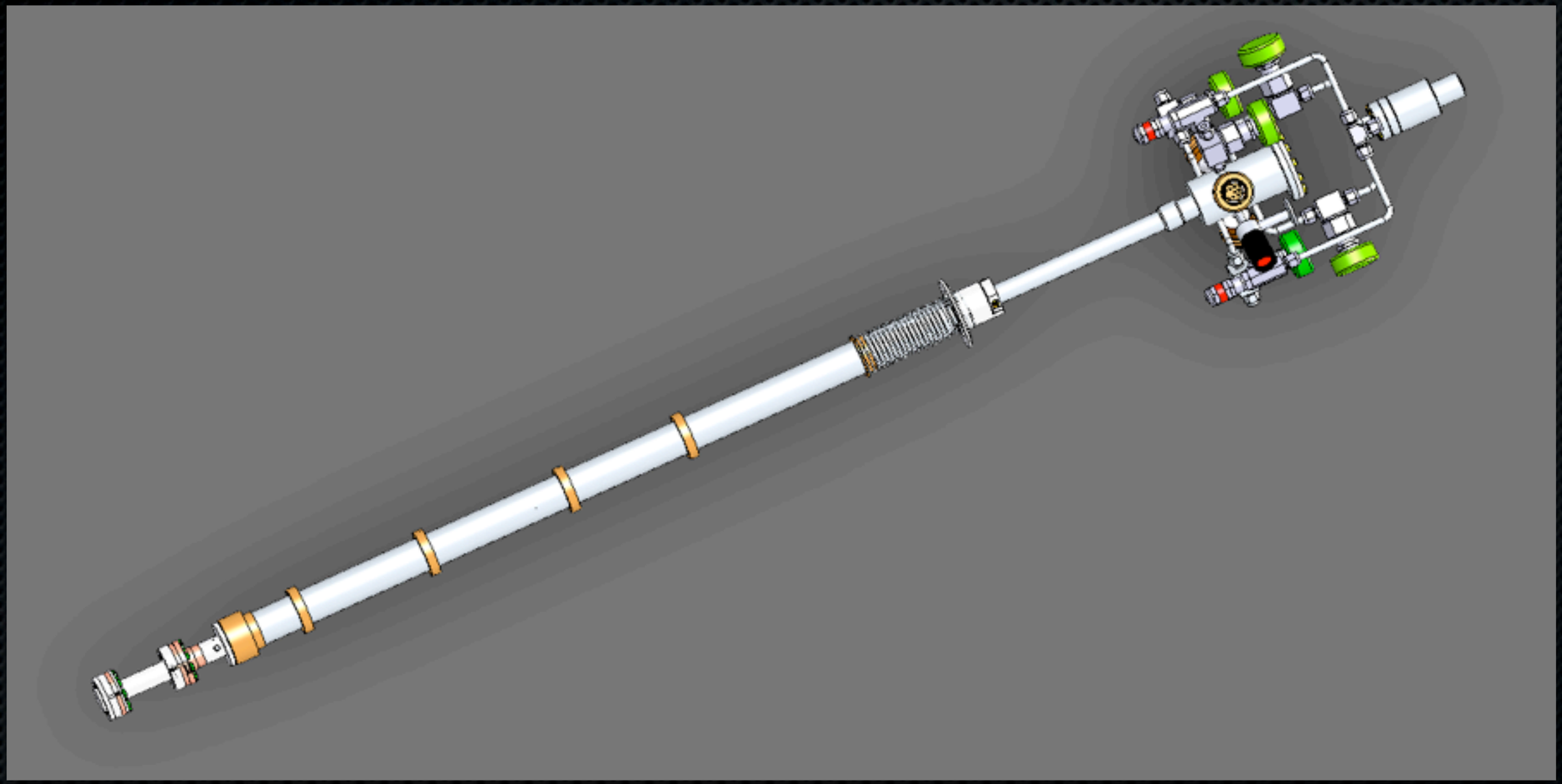
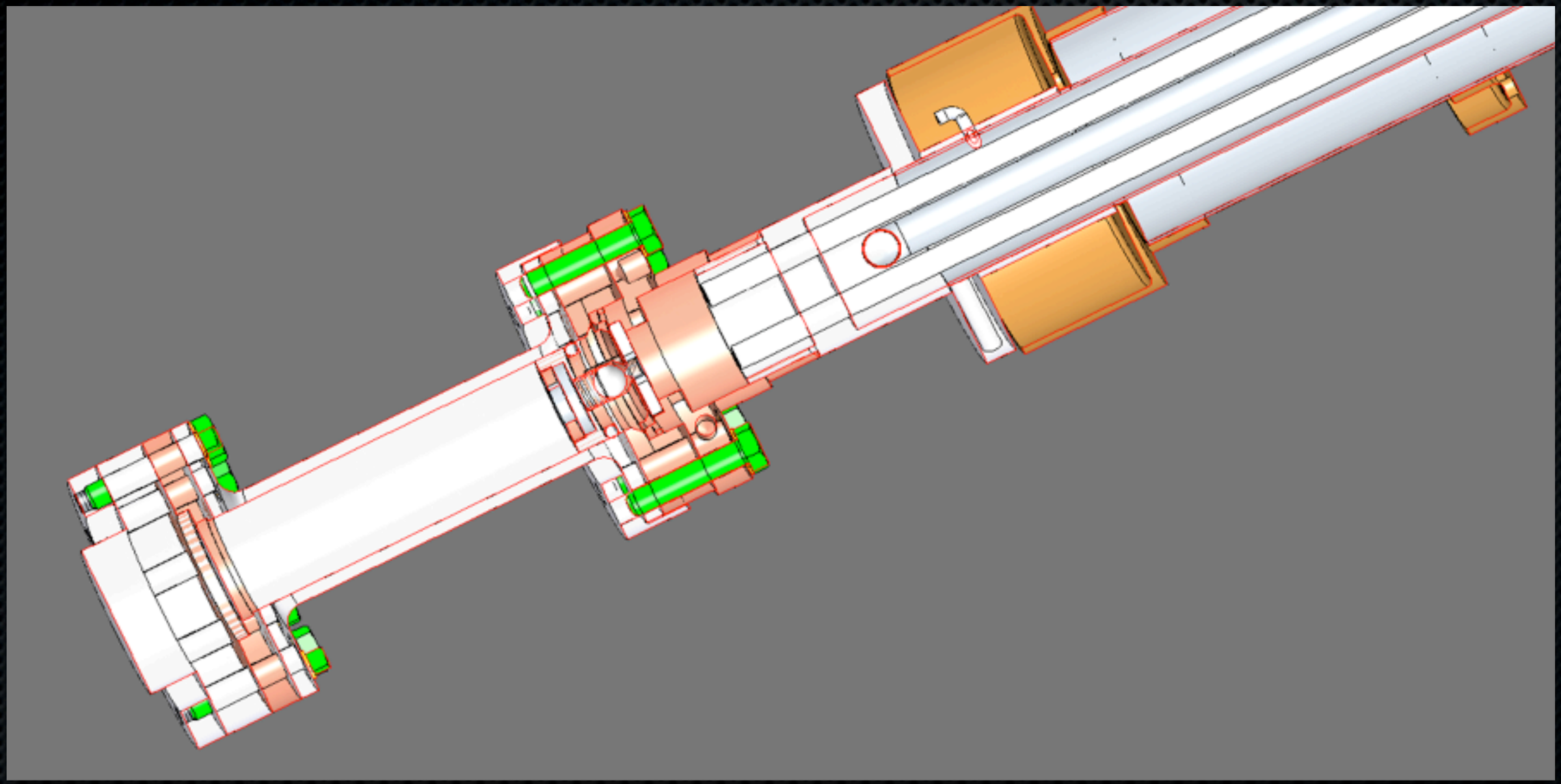
Gas Sorption



Gas Sorption

New injection stick designed with HZB, ANSTO.



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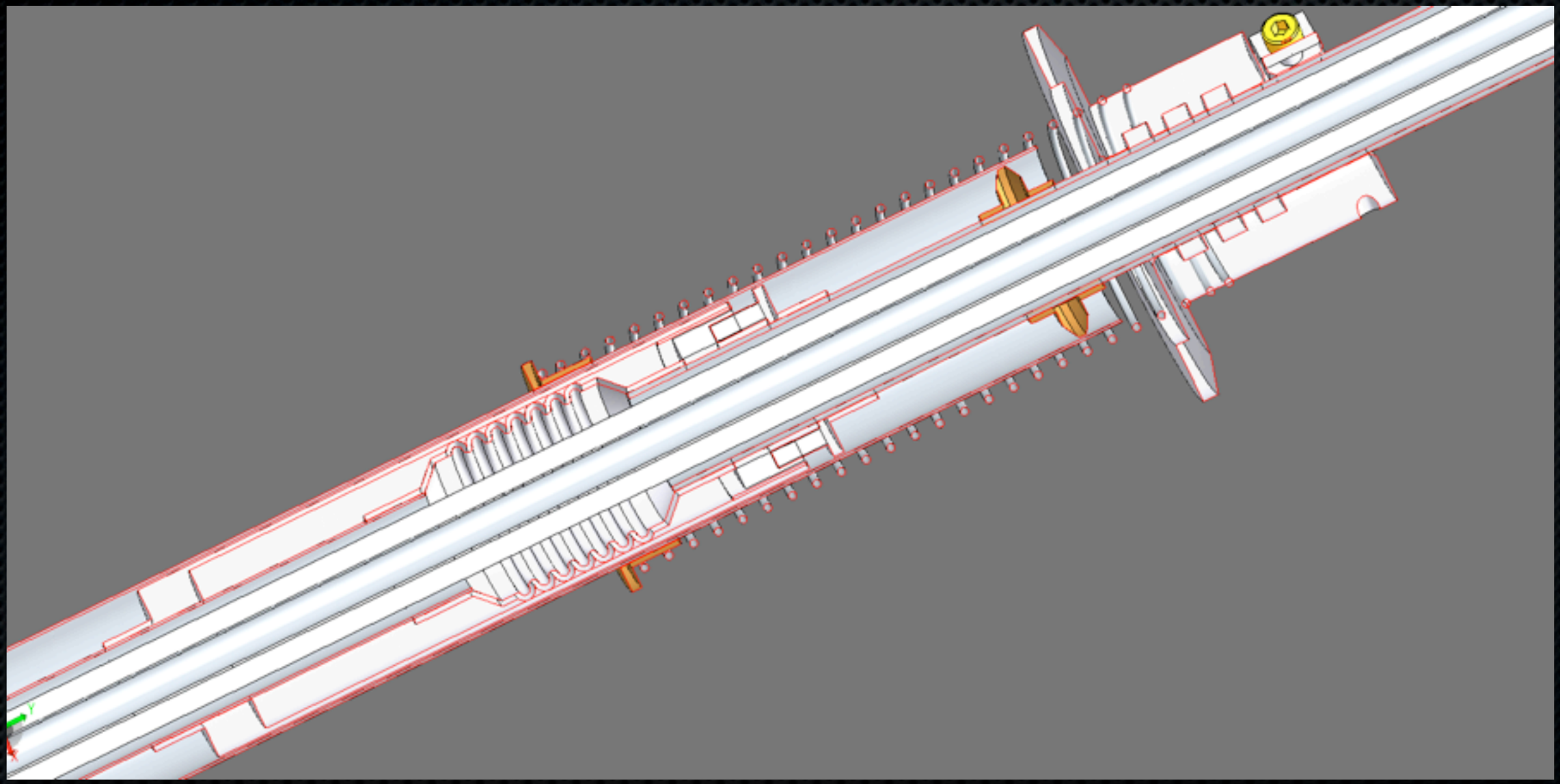

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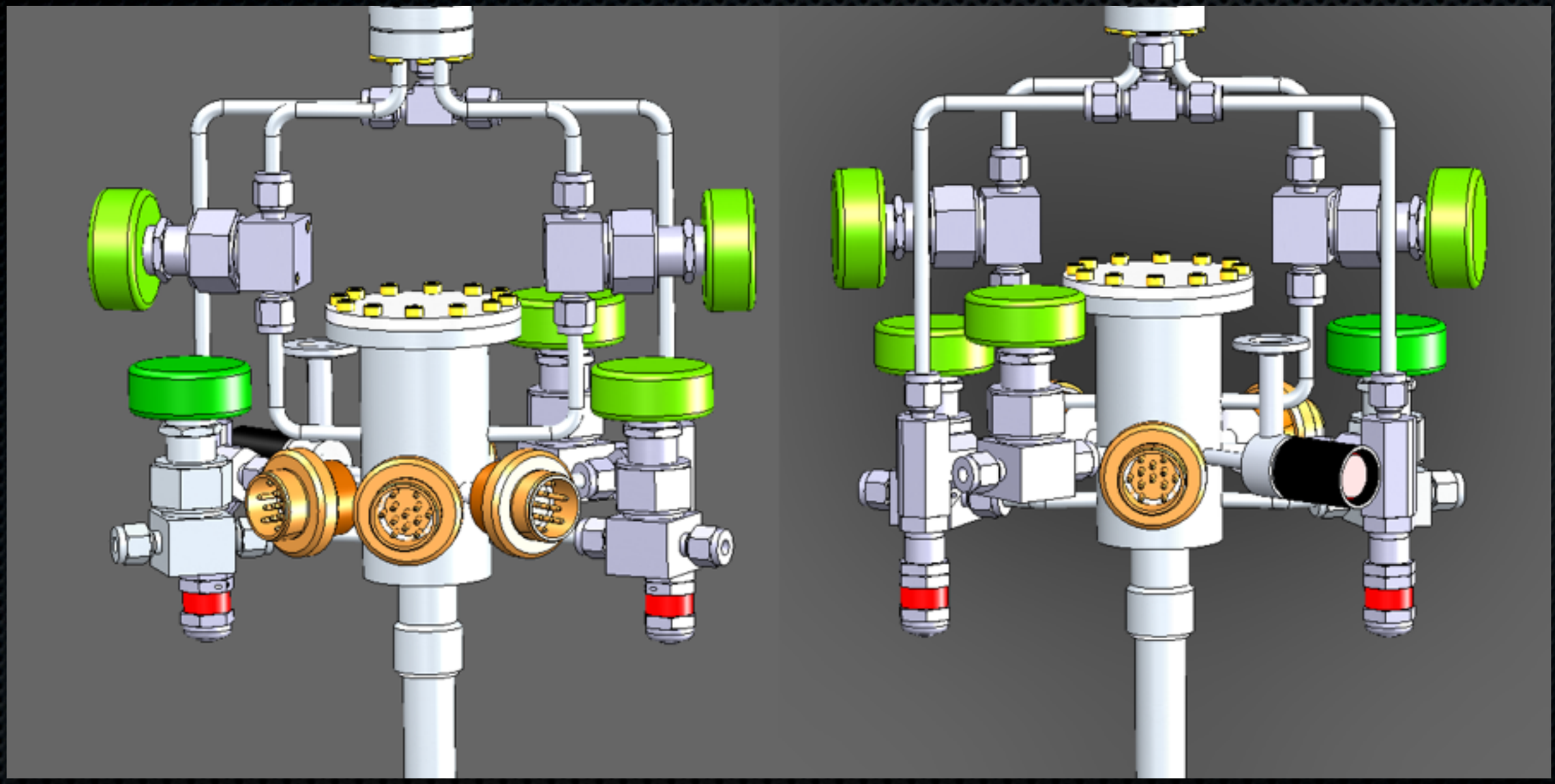

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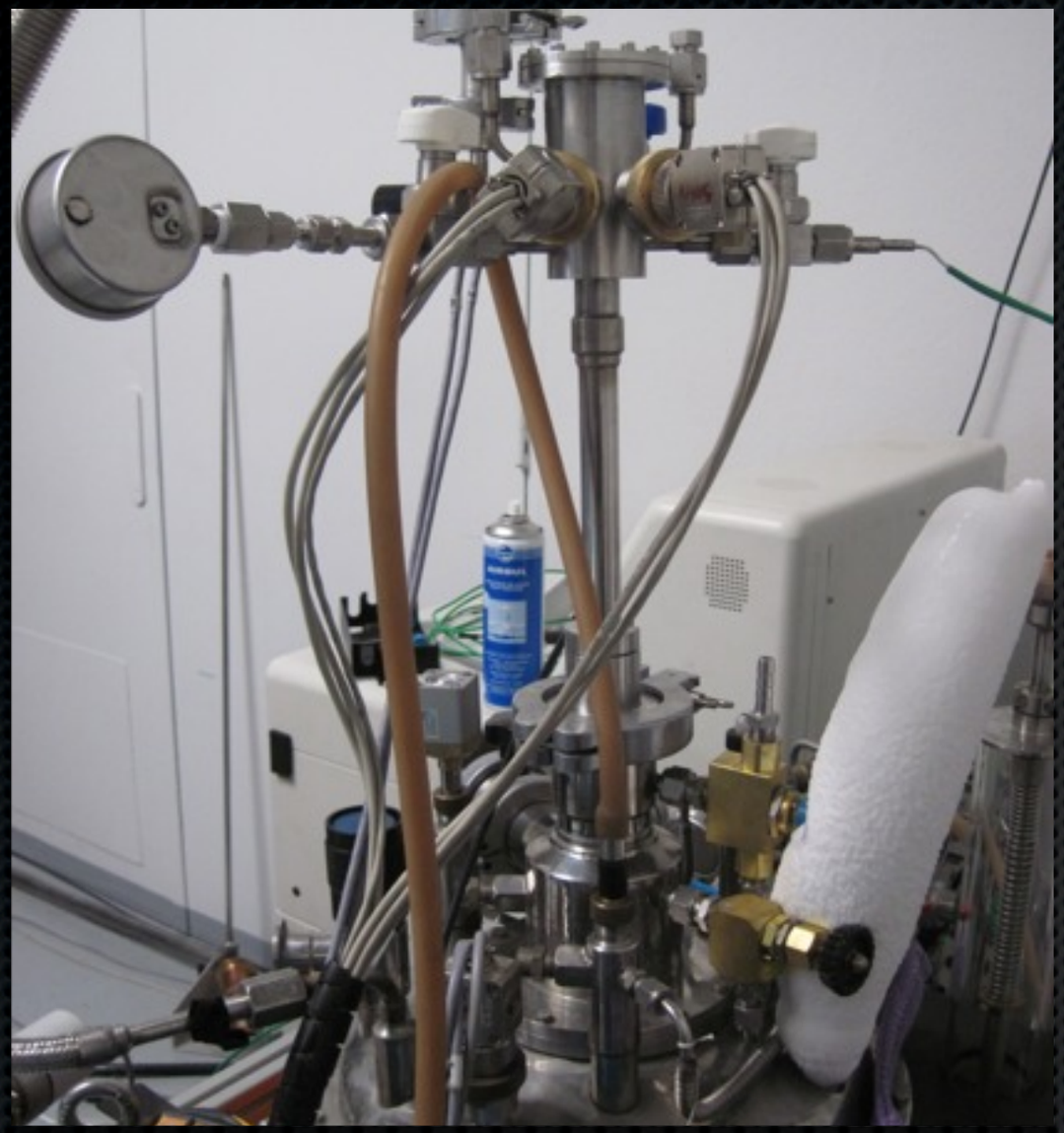

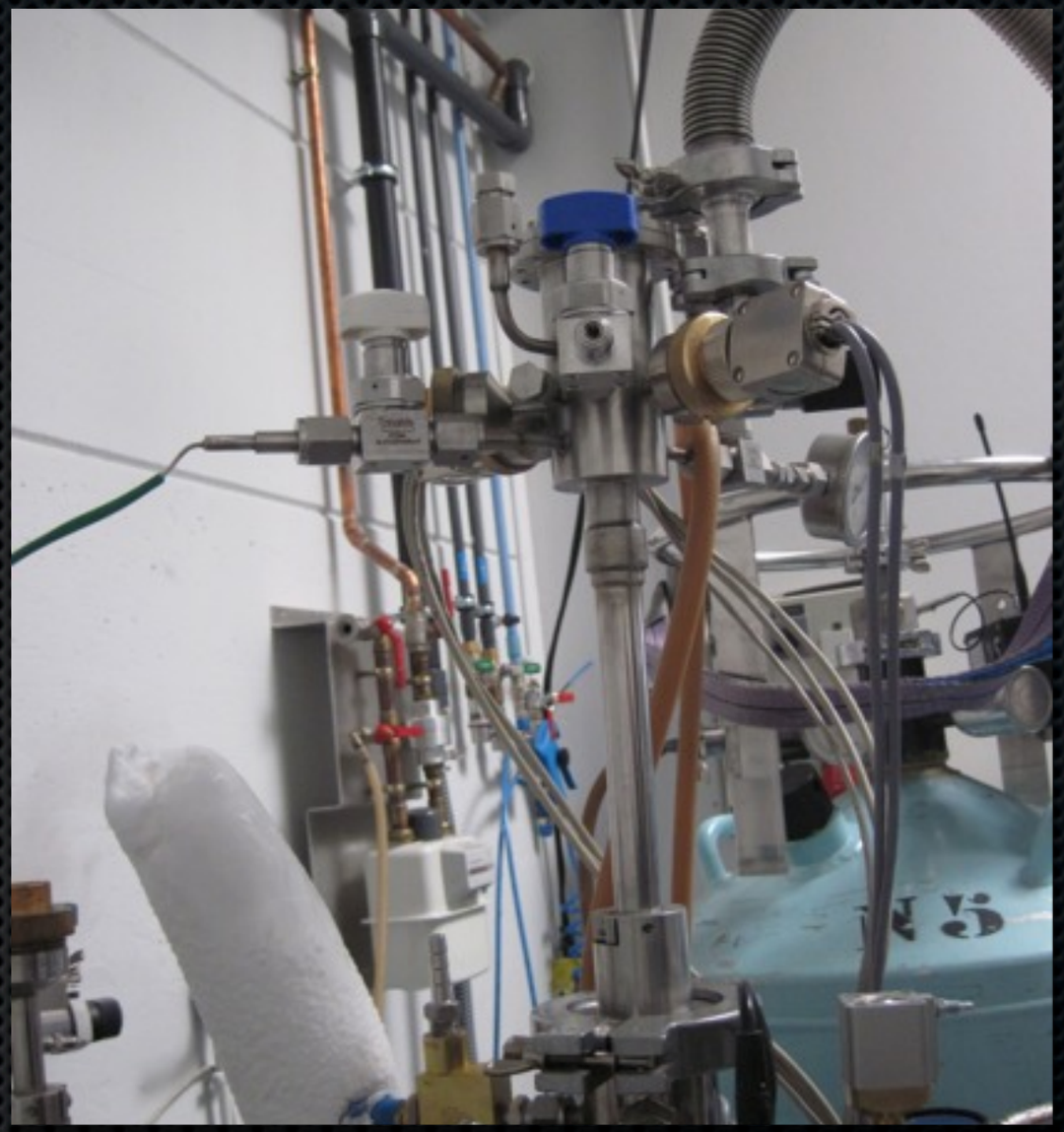

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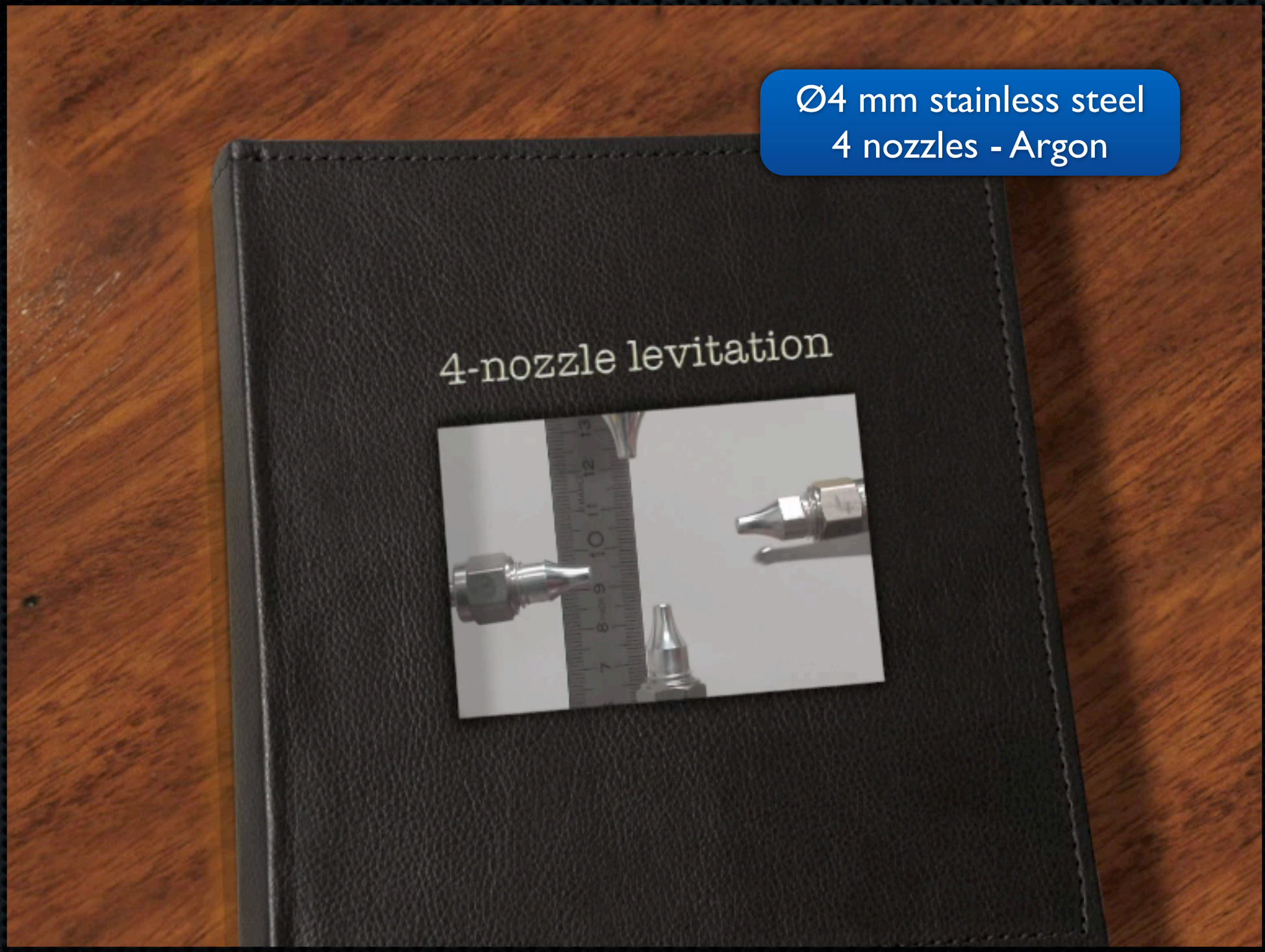
Containerless Furnaces

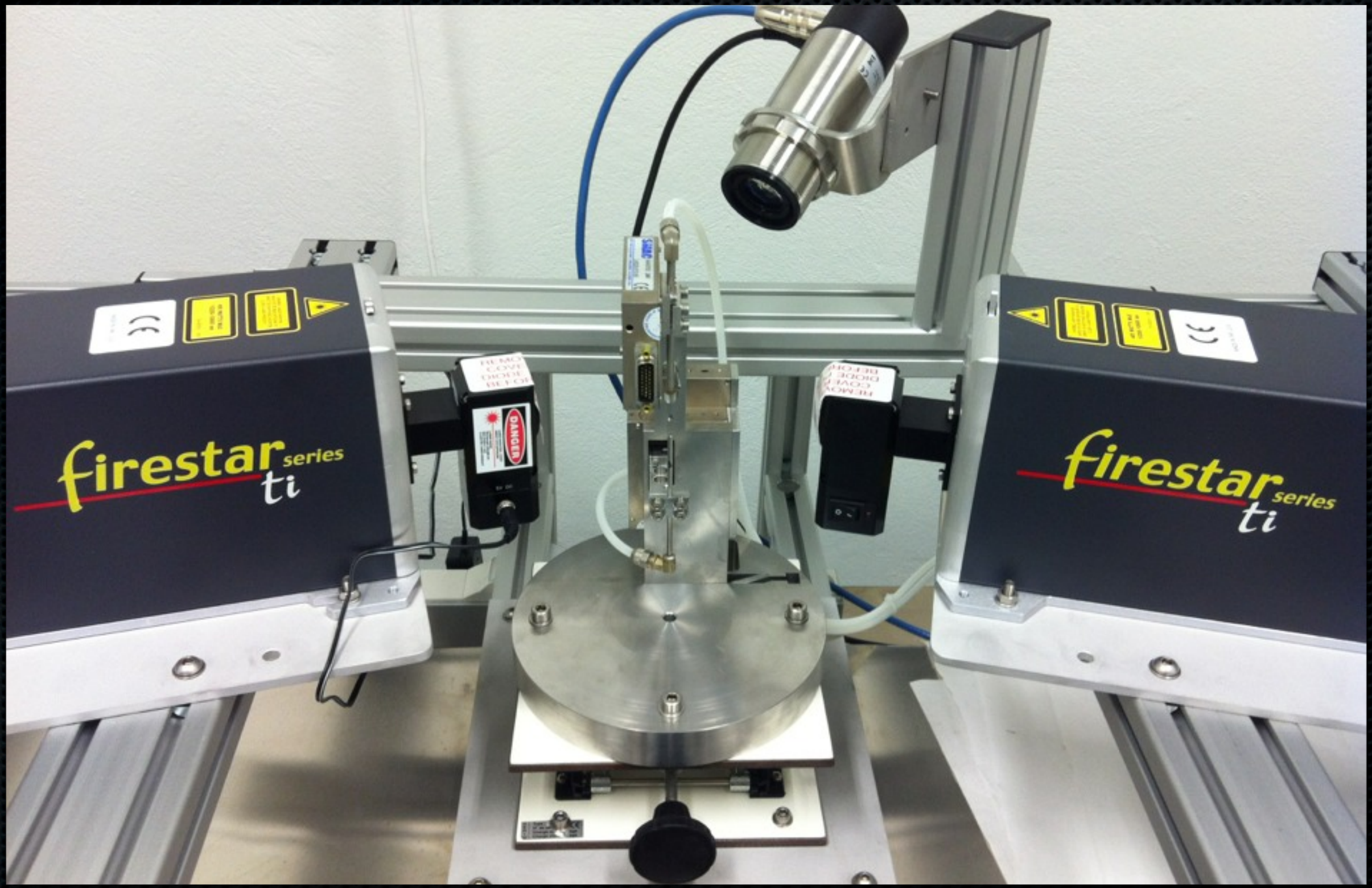
Aerodynamic levitation

- Present status:

1. Large horizontal and vertical accesses,
2. Horizontal movements controlled with top nozzle,
3. Vertical movements decreased with horizontal nozzles,
4. 10 µm CO_2 lasers tested, 1 µm lasers ordered,
5. Electronics delivered, software under development.

Ø4 mm stainless steel
4 nozzles - Argon





Containerless Furnaces

Aerodynamic levitation

- Further improvements ?

  ➡ Can we reduce the turbulence of the main jet ?
  for 5 NL/min Ar at 26°C: Re = 16 460 !

  ➡ Can we make sure that the secondary jets are laminar ? for 0.5 NL/min Ar at 26°C: Re = 1 646 < 2040.

  ➡ We are going to test a flow meter leading to less turbulence from the main nozzle…

Containerless Furnaces

Aerodynamic levitation

- Future steps:

1. Complete the software development,
2. Tests and commissioning of the prototype,
3. Simplify the installation on instruments,
4. Use Schlieren photography to better understand the fluid mechanics properties involved…

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