

## Numerical investigation of dense condensing flows for next-generation power units

Azzini, Lucia

**DOI**

[10.4233/uuid:6c84e51e-4111-4638-ae70-24a510db3ca5](https://doi.org/10.4233/uuid:6c84e51e-4111-4638-ae70-24a510db3ca5)

**Publication date**

2019

**Document Version**

Final published version

**Citation (APA)**

Azzini, L. (2019). *Numerical investigation of dense condensing flows for next-generation power units*. [Dissertation (TU Delft), Delft University of Technology]. <https://doi.org/10.4233/uuid:6c84e51e-4111-4638-ae70-24a510db3ca5>

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# Propositions

accompanying the dissertation

## NUMERICAL INVESTIGATION OF DENSE CONDENSING FLOWS FOR NEXT-GENERATION POWER UNITS

by

**Lucia AZZINI**

1. The development of a general, detailed nucleation theory is not the key for an efficient component design. *This proposition pertains to this dissertation.*
2. The Wilson temperature is a function of the activation time, defined as the physical time from saturated conditions to the onset of stable condensation. *This proposition pertains to this dissertation.*
3. The dimensionless degree of subcooling does not depend on the molecule dipole momentum. *This proposition pertains to this dissertation.*
4. Discrete adjoint optimization can be applied to two-phase components with a relatively low computational cost and a considerable performance improvement. *This proposition pertains to this dissertation.*
5. Every form of scientific knowledge is equally valuable. Everyone says it, but very few truly believe it. Too often, we create our own ranking among disciplines, and believe that some have a more noble purpose than others. This damages research.
6. The ability to defend, or refute, a theory is not anymore one of the main skills required to complete a PhD.
7. Reserving more positions for women in the engineering faculties is only a short-term solution to increase the female percentage of the staff. The main issue that has to be addressed is the cultural stereotype of topics "for boys" and "for girls".
8. The 'world happiness ranking' is not objective, not repeatable, not measurable. It has no meaning. Too bad for the Danes.
9. It is pointless to print so many copies of a PhD thesis. There are much better solutions to regulate the monitor's height on someone's desk.
10. PhD candidates should not be constrained to write at least six propositions not related to their research. It is not wise to make statements on topics that are far from your expertise, especially when you are supposed to defend them against an expert committee.

These propositions are regarded as opposable and defensible, and have been approved as such by the promotor prof. dr. P. Colonna and the co-promotor dr. M. Pini.