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INTEGRATION OF THREE-DIMENSIONAL HEATING

Daniel Hoppe
Bertrandt Ingenieurbüro GmbH

INTEGRATION OF THREE-DIMENSIONAL HEATING / THREE-DIMENSIONAL HEATING IN SCR-CONTAINERS / AD-BLUE®-CONTAINERS / HWL-CONTAINERS

Technical task:
The task of the technical innovation is to provide a more efficient method for heating an SCR-container, Ad-Blue®- container, HWL-container.

Initial situation:
In SCR (Selective Catalytic Reduction) tanks, Ad-Blue® tanks, HWL tanks, heating systems of various types are integrated.
The current SCR containers, Ad-Blue® containers, HWL containers are manufactured by injection molding. This procedure makes it possible to form contours inside the SCR container, Ad-Blue® container, HWL container. These contours are currently used as baffles / Schwappwände to reduce sloshing and / or used as attachment points for the current heater (sketch 1).

Furthermore, the heating systems are currently running as point heating (see sketch 1) and / or as surface heating (see sketch 2). The point heating is positioned in / on the SCR accumulation pot / SCR delivery unit and connected to it / with this. The surface heating is here flat on the tank bottom and / or positioned on the tank outer walls. Depending on the type of construction, the surface heating is connected to the SCR storage pot / the SCR delivery unit or not. The electrical contacting takes place via the SCR jam pot / the SCR delivery unit or via a separate contacting.
The current heating systems transfer the heating energy (heat) at a point or area in the area of the tank bottom / tank outer walls into the frozen medium.

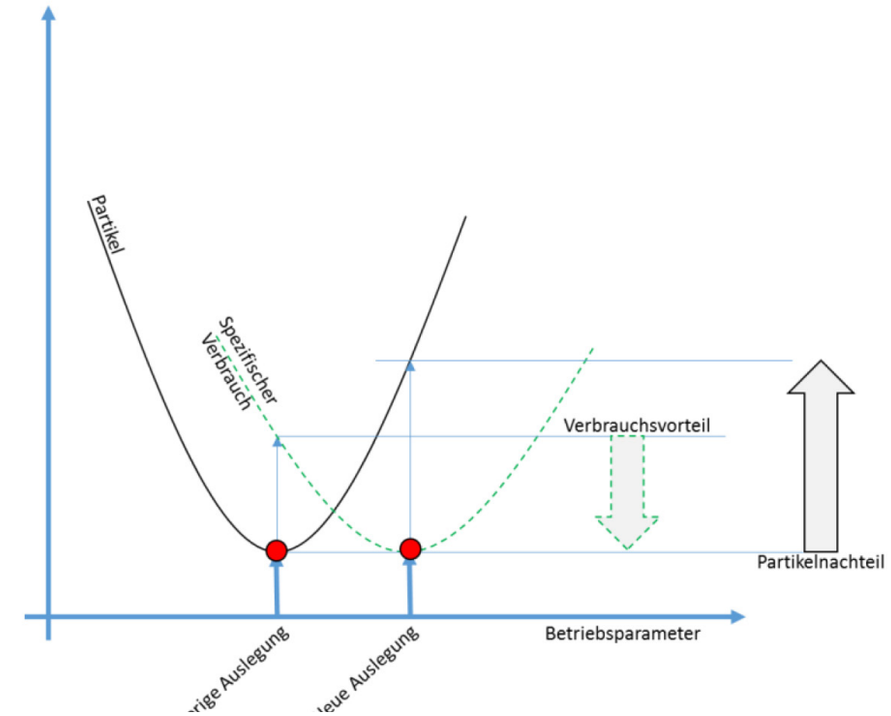
Solution:
1st idea
Integration of a three-dimensional heating (sketch 3).
The idea refers to using these contours also for fixing the three-dimensionally executed heating and thus to generate the advantages, see above (sketch 2). The heater can be controlled level dependent.

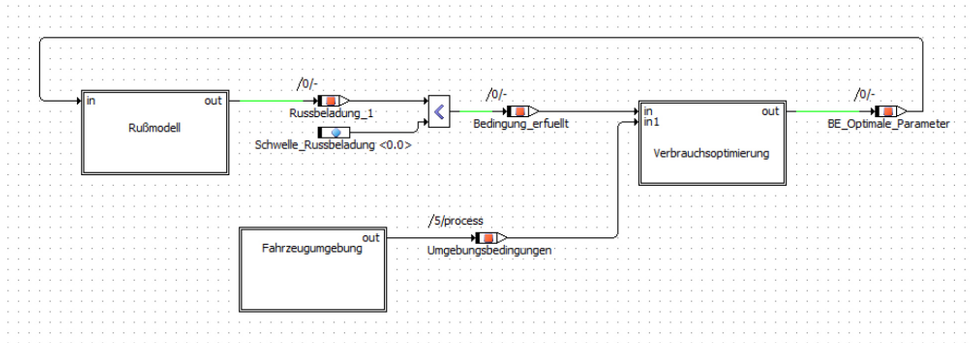
2nd idea:
Integration of a three-dimensional arrangement of the heating (sketch 4)
The idea refers to arranging two or more heaters three-dimensionally over (extended) attachment points in the SCR container, Ad-Blue® containers, HWL containers. (Sketch 3). The heater can be controlled level dependent.

Advantages:
- The integration of a three-dimensional heating or a three-dimensional arrangement of a heater, the heating energy (heat) „deeper“ are transferred to the frozen medium. As a result, larger quantities of the frozen medium can be thawed more efficiently and made more sustainable the exhaust aftertreatment.

Possible application:
- For all vehicles with SCR containers / Ad-Blue® containers / HWL containers.

Technische Neuerung





Sofern der Einfluss der verstellen Brennverfahrensparameter (BE_Optimale_Parameter) noch nicht im Rußmodell berücksichtig wird, muss das geschehen.