

PREVENTION OR AUTOMATED REMOVAL OF LIMESCALE ACCUMULATION IN A WATER BOILER

We are currently working with a leading manufacturer of automated hot beverage dispensing equipment searching for **solutions that could significantly decrease the formation of limescale deposits in a water boiler, and / or successfully remove the deposits after their accumulation.**

Our client is currently developing a new generation of automated beverage dispensing systems that use instant water boilers to provide fast delivery of hot drinks to the consumer. However, due to the presence of minerals in the water feed, calcium-based deposits start to develop on the boiler walls during normal regular use. These deposits are prone to detaching themselves from the wall and clogging important valves further down the process, causing system failure. The amount of limescale varies according to the properties of the incoming water, particularly its hardness.

Currently this problem can only be solved through regular maintenance and cleaning, which is an expensive and time-consuming process, often requiring large quantities of water. Our client is attempting to significantly reduce the need for maintenance by either automating the cleaning process or (preferably) avoiding the formation of limescale deposits in the first place.

Potential solutions should:

- Be food grade or have the capability to be produced as food grade;
- Work with all water types and very different levels of hardness without reducing it;
- Be environmentally friendly.

Solutions of interest might include (but are not limited to):

- Vibration / ultrasound cleaning;
- Anti-scale coatings;
- Nano / micro textured patterns;
- Surface treatments;
- Existing solutions for boilers, heat exchangers and flow-through heaters.

Solutions out of scope include:

- Water filters / softeners that reduce water hardness (this negatively impacts the final taste);
- Use of automated / frequent acid delivery to dissolve scale deposits;
- Technologies that could not be implemented as food grade;
- Solutions that require large volumes of water for rinsing / flushing.

Our client is looking for solutions that have some proof of concept or that have shown potential with similar problems, even if some further development is required for this application. Some level of intellectual property (IP) would be strongly preferred, however it is not mandatory.

Bitte wenden Sie sich für mehr Informationen an Herrn Jens Fenzau (jf@humboldt-innovation.de, -70776) oder Frau Daniela Rings (dr@humboldt-innovation.de, -70763).