PROJECT: SENSOR
SYSTEM: Semi-closed system in sea and RAS
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CtrlAQUA

Automatic micro-based sensor system for trace metals (Zn, Fe, Cu)

RESEARCH QUESTION:

Developing automatic micro-based sensor system for trace metals (Zn, Fe, Cu) for RAS water in S-CCS and RAS

DURATION: 2017 -

SALINITIES TESTED: Brackish water and salt water

HIGHLIGHTS:

- Electroanalytical system was tested together with developed low-volume flow-through cell.
- System have been tested in authentic RAS water.
- Different concentration ranges were tested from low ug/l and up to 0,1 mg/l+.
- System in under testing for accuracy.
- System is in progress to be optimized for typical concentration levels in recirculating aquaculture systems.

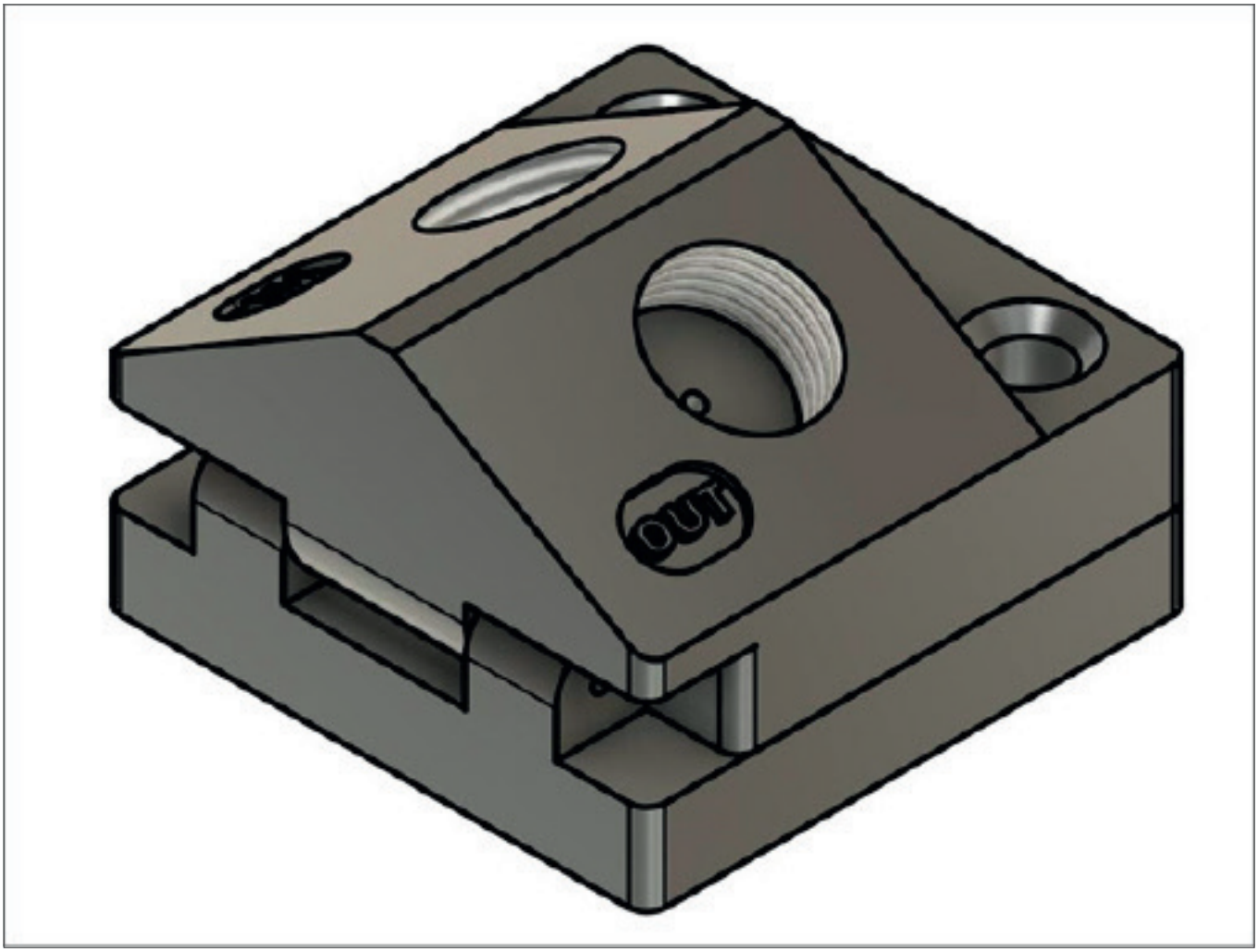
RECOMMENDATION:

- Zinc, copper and iron could pose a threat to fish health in aquaculture if threshold values are exceeded and should be monitored.
- Electroanalytical system combined with low volume flow-through cell can be used in recirculating aquaculture systems in S-CCS and RAS without adding any chemicals to measure zinc, copper and iron continuously.
- Sensor can be used at different salinities from approx. 0,1 ppt up to seawater (35 ppt).
- Sensor has short response time and can also detect sudden changes in water quality with respect to the mentioned metals.

ADDITIONAL INFORMATION:

- For further details please contact Ingrid Naterstad Haugen, PhD candidate NTNU (ingrid.n.haugen@ntnu.no)

The factsheet is ready for implementation, but with the note that the testing has not been done for all industrial relevant conditions.



Flow cell for use together with electroanalytical system for measurements of trace metals in recirculating aquaculture systems.