



## ETH Medal awarded to Kirsten Oswald

January 21, 2017 |

**The medal, honouring Kirsten Oswald's excellent doctoral dissertation, has been presented at the graduation ceremony on January 20, 2017.**

### Greenhouse gas methane is also oxidised in water with no oxygen

Kirsten Oswald investigated in her work with the title "Methane oxidation in suboxic and anoxic zones of freshwater lakes" which electron acceptors and bacteria are involved in the decomposition of methane to carbon dioxide in the anoxic part of still waters.

Kirsten Oswald carried out investigations in three lakes, two in Switzerland and one in Spain, which vary greatly as regards light, water circulation, oxygen and nutrient content. She was able to determine that the bacteria that are presumed to oxidize methane under anoxic conditions were absent or hardly present. Instead, bacteria were found that normally occur in great quantity chiefly in the boundary layer between anoxic and oxygen-rich zones, and these oxidised methane to about the same extent as in this boundary layer. Apparently the bacteria in the anoxic zone get their oxygen directly from oxygen-producing organisms that carry out photosynthesis. Light must therefore be present. Still uncertain is the meaning of alternative oxidation processes using sulphates, metal oxides, nitrate and nitrite, although increased methane oxidation can be shown when these elements are added.

### Successful dissertation leads to a new pathway

Kirsten Oswald wrote her final publication in connection with her dissertation at the end of last year at Eawag. Her further professional development is open at this time, and could take place outside of research.

<https://www.eawag.ch/en/info/portal/news/news-archive/archive-detail/eth-medal-awarded-to-kirsten-oswald>