

# SmartFluo >> How to use the smart phone adapter to measure algal fluorescence in water <<

This instruction is supposed to help you using the smart phone adapter to measure algal fluorescence in the water. If you need a more detailed instruction please take a look at the related video.

**Keep an eye on water quality!**

**Have fun!**



ALGAE

1

**What you need:**



ALGAE

2

- Rinse the sampling container three times with water.
- Take a water sample.
- Note latitude, longitude and the time of your sampling spot.
- Move the sampling container gently to mix the sample.
- Then rinse the cuvette three times with the sample.



ALGAE

3

- Transfer your water sample into the cuvette.
- Then clean the outside of the cuvette.



## SmartFluo >> How to use the smart phone adapter to measure algal fluorescence in water <<



### ALGAE

- Put the cuvette into the holder of the smart phone adapter.
- Then check the adapter and put the colour-filter into it.
- Finally place your smart phone on the adapter.
- Open the camera application and switch the flashlight off.

4



### ALGAE

- Switch the external LED of the adapter on.
- Take an image.
- Switch the external LED of the adapter off.

#### For quality control:

- Repeat this further two times.
- Close with an image without LED (dark image).

5



Flashlight of smart phone camera switched off.

Learn more about the calculation of fluorescence from camera images on our website [www.citclops.eu](http://www.citclops.eu) and see a map with latest measurements on [www.citclops.eu/fluorescence-measuring-water-fluorescence](http://www.citclops.eu/fluorescence-measuring-water-fluorescence).

If you are interested to build your own adapter for your smart phone please contact us at the Institute for Chemistry and Biology of the Marine Environment of the Carl von Ossietzky University Oldenburg. To build the adapter for a Samsung Siii mini smart phone, you need a 3D printed housing, and the instruction how to build the adapter, including a control unit for the external LED. The method is certainly adoptable to other smart phone types, so please feel free to tailor it for your device. Please let us know how you proceed. We are happy to support you!

We are continuing to work on proper quality control, higher sensitivity and transferability of the method. If you would like to stay up to date on our progress, please let us know (Prof. Dr. O. Zielinski [www.icbm.de/marine-sensorsysteme/](http://www.icbm.de/marine-sensorsysteme/)).

This instruction was produced within Citclops. Pictures were taken during sampling at Ocean Sampling Day 2015. The smart phone adapter was developed and built by the members of the project partner University of Oldenburg, Institute for Chemistry and Biology of the Marine Environment, working group Marine Sensor Systems. Citclops is supported by the EC-FP7 Programme, grant agreement n° 308469. We thank EU for funding!