WaterSpy

High sensitivity, portable photonic device for pervasive water quality analysis

Newsletter N° 5 - October 2019

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PHOTONICS PUBLIC PRIVATE PARTNERSHIP

www.waterspy.eu
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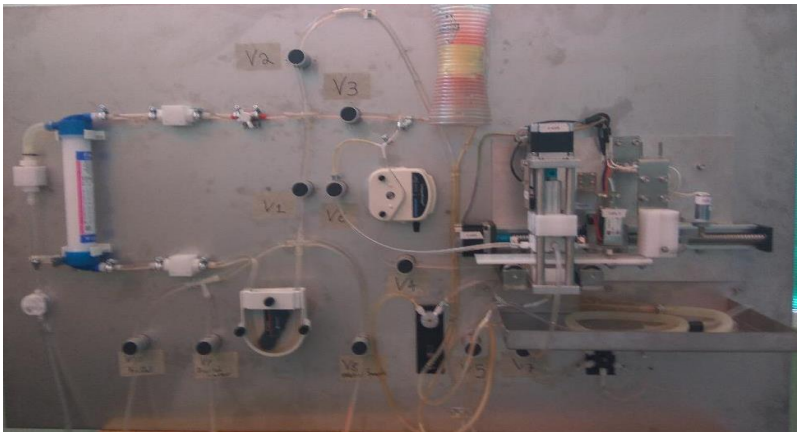
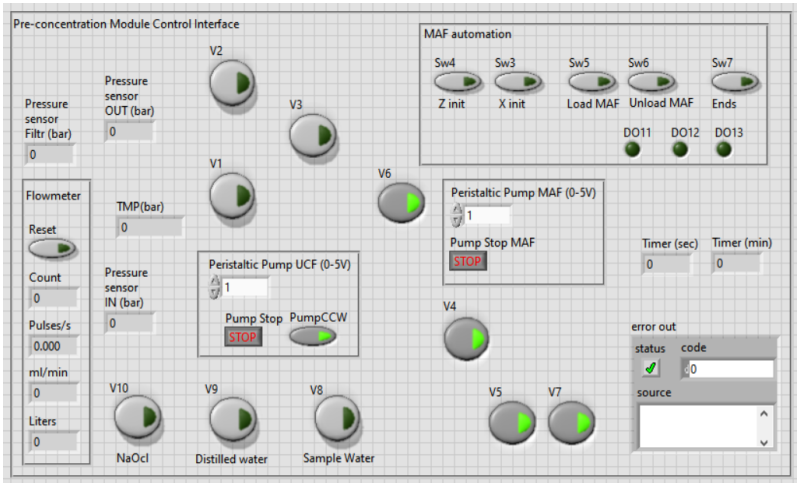
WaterSpy news: Pre-concentration module development

During this period, CyRIC worked in collaboration with TUMunich to replicate a device that performs large-scale sample concentration, in order to condense the number of bacteria found in 100 L into 1 mL of water. **Figure 1** shows the pre-concentration module replica and its control interface, developed by CyRIC.



(a)



(b)

Fig. 1 . (a) Automated pre-concentration module , (b) Pre-concentration module control interface

WaterSpy Meetings

The **WaterSpy 24M** meeting was hosted on the 21st and 22nd November 2018 in Athens (Greece), where NTUA is based. All partners attended the event. Focus of the discussions was on the delivery of all updated hardware modules and the forthcoming integrated testing.

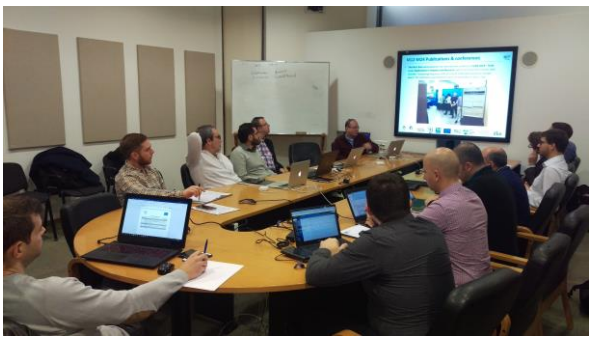


Fig.2 M24 meeting

Main Technical Deliverables M24-M30
D3.4 WaterSpy packaged lasers optimized for full spectral coverage integrated with driving electronics
D4.2 WaterSpy photodetector final version
D4.3 WaterSpy integrated photodetector and electronics
D5.2 WaterSpy device modules v2

The **WaterSpy 30M** meeting was hosted on the 8th and 9th of May 2019 in Erlangen (Germany), where FAU is based. All partners attended the event. During the meeting the following issues have been in the centre of the discussions:

- ✓ Incubation module optimization using the new thermo-pad produced by AUG
- ✓ WaterSpy packaged lasers optimization
- ✓ WaterSpy photodetector - final version
- ✓ Integration plan - final version
- ✓ Field validation plan

Fig.3 M30 meeting

Project extension!

The WaterSpy project has been extended for another four months, running now until the end of February 2020. This will give us the opportunity to run more lab and field validations.

Planned events:

✓ The next WaterSpy consortium meeting (M36) will take place in Genova, Italy, where IREN is based.

Integration week: Wien

An integration week was hosted by TUW in Wien from 3rd June to 7th June 2019. During the integration week, the partners finalized the second integrated system layout, including:

(A) fluidic system setup,
(B) communication and control setup,
(C) power supply to each module.

Tests to validate the performance of the setup for the cleaning and sterilisation of all device hydraulics were performed.

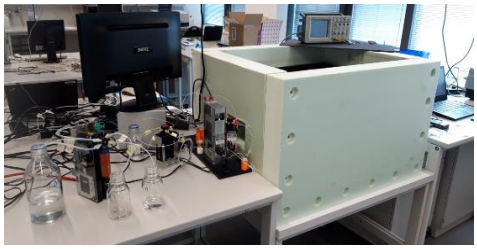


Fig. 4 Validations during the integration week

Integration week: Avellino

The third integration week was hosted by CNR in Avellino from 9th to 13th September 2019. The main focus of this week was on:
1. Pre-concentrator module testing
2. Optical module measurements
3. New thermal pad of the incubator module

Concentration experiments of *E. coli* dissolved water samples at different concentrations (10^5, 10^6 and 10^7) were performed. The obtained results show a very good recovery value for the bacteria. Also, preliminary measurements of *E. Coli* with the optical module were performed.

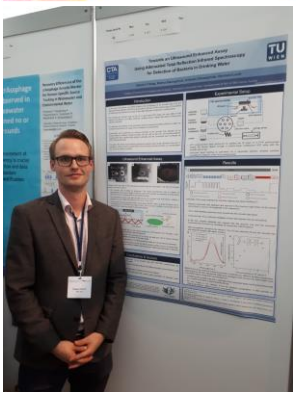
Fig 5. Pre-concentrator module

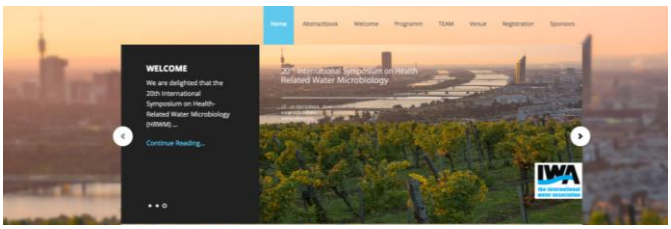
Fig 6. Optical module

Dissemination Activities

✓ Events

The WaterSpy consortium participated in several workshops … some pictures of the events:

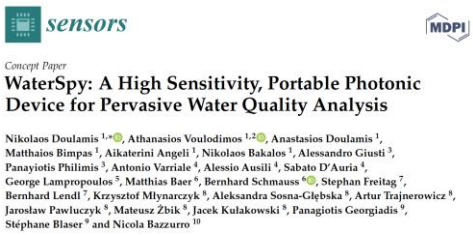




TUW

FAU

✓ WaterSpy project papers



✓ New Leaflet

Stay tuned!

WaterSpy Consortium

New partner onboard!

GISIG has joined the consortium to assist IREN with the standardisation and post-project exploitation activities.