Water monitoring with fish-cell-based biosensor awarded by Venture

June 20, 2017 | Stephanie Engeli
Topics: Organisation & Staff | Ecosystems | Pollutants

A new business idea – the “Rainbow Biosystem” – developed by researchers at Eawag received the 3rd prize in the business plan category at the award ceremony for the »venture» start-up competition on 19 June. In collaboration with scientists at the HES-SO Valais-Wallis, the researchers created a fish-cell-based biosensor that provides a simple solution for monitoring and managing water quality.

Large amounts of toxic substances are entering the water bodies and causing damage to the ecosystem. «The urgent demands and limitations of current approaches call for novel, effective methods for water monitoring.», says researcher Vivian Lu Tan. Together with Kristin Schirmer, Head of the Environmental Toxicology Department at Eawag, and scientists of the HES-SO Valais-Wallis, she therefore developed the “Rainbow Biosystem”: an automated, fish cell impedance-based biosensing system for detecting water toxicity. The portable, palm-sized biosensor composes of a water sample collection and preparation unit, a cell chamber to hold the Rainbow Biochip, and a measuring/output unit. The results can be monitored, stored, transferred and shared via an App on the mobile phone. The idea for this new approach emerged in the Nano-Tera project “Envirobot” – an aquatic water sampling and water analysis robot.

3rd prize at swiss-wide start-up competition

To move their idea forward – since, according to their estimates, the relevant market amounts to over 500 million CHF – they participated in the Venture business plan competition. Venture is a joint initiative of ETH Zurich, McKinsey & Company Switzerland, Knecht Holding, the innovation promotion agency CTI, and École Polytechnique Fédérale de Lausanne (EPFL).

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The Swiss-wide start-up competition supports young entrepreneurs in founding a company and aims to realise untapped innovation potential by encouraging young entrepreneurs to develop a business idea into a start-up company. The competition required participants to prepare and submit their business plans. This year, 117 business plans were submitted. The top 5 winners share the total prize money of CHF 120,000. As one of the top 5, the Rainbow Biosystem team was invited to present their idea to the Venture advisory board and the investors. At the award ceremony, they were awarded with the 3rd prize.

Kristin Schirmer and Vivian Lu Tan are delighted with their prize and continue to stress the advantages of their “Rainbow Biosystem”: “It can be applied at any occasions on- or off-site of the water sources, provides easily interpretable testing results, and is simple handle”, says Kristin Schirmer.

Related Links

Movie Rainbow Biosystem

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https://www.eawag.ch/en/info/portal/news/news-archive/archive-detail/water-monitoring-with-fish-cell-based-biosensor-awarded-by-venture