

Development and application of image-processing methods for studies of behavioral effects in aquatic organisms: Ume, Sweden

Position description

Natural aquatic systems are under pressure from micropollutants worldwide including widely used industrial chemicals, pesticides and pharmaceuticals. Identifying the mechanisms through which such contamination may affect living organisms and ecosystems are crucial for sound environmental management.

Recent research indicate that measures of subtle behavior changes are one of the most effective way to screen for biological effects induced by contaminants. In order to be able to measure subtle behavioral changes we need new sensitive techniques and methods. This project aims to develop a novel test environment and a software that can perform automatic behavior analysis of organisms (e.g. insects and fish) exposed to micropollutants. The project aims at recording biota movements using high-speed as well as regular video cameras to assess parameters such as; acceleration under attack, curvature of body, exploration area, and social interplay. The research project is inter-disciplinary with cooperation between research teams in physics, ecology and environmental sciences, and chemistry. The research will mainly be performed at the departments of Physics at UmeÅL University, however, in close collaboration with the Chemistry Department and Department of Ecology and Environmental Science.

QualificationsTo qualify for the fellowship you should have a PhD-degree in a field relevant for the proposed project. In-depth knowledge of image-processing, tracking algorithms, programming, cameras, etc is necessary. Also, it is of advantage if the applicant has some laboratory experience. Since the project is interdisciplinary and involves personnel from different disciplines we expect the candidate to be open minded and interested learning new things. The candidate is expected to work independently and should be able to write scientific reports and publications. It is also required that the candidate is fluent in written and spoken English.

Emphasis will be placed on personal suitability as well as on genuine enthusiasm for the topic.

Application detailsA complete application should include:

- A cover letter summarizing your qualifications and motives for applying (maximum 1 page)
- A CV with Names and contact details of 2 references, and a publication list
- PDF copies of relevant exam certificates and publications

The position is available for 2 years as a tax-exempt stipend of 250 000 kr / year (~34 000 \$ / year)

For more information, please contact Associate Professor Magnus Andersson

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and Tomas Brodin (tomas.brodin@emg.umu.se) at Dept. of Ecology and Environmental
Science. Your complete application should be sent as one single pdf-file to
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