

## THE IER-CEFINEA WELCOMES EPFL STUDENTS FOR THEIR DIPLOMA'S INTERNSHIP

*Nathalie Vallotton & Catherine Brassaud*

Ms Nathalie Vallotton, student at the Environmental Sciences and Engineering Department of the School of Architecture, Civil and Environmental Engineering of the Swiss Federal Institute of Technology Lausanne (EPFL), tells her experience of two months with the team of Microbiology and Ecotoxicology of Dr Do Hong Lan Chi at the IER-CEFINEA.

“Within the framework of my studies at EPFL, I had the opportunity to benefit from the cooperation established between the IER-CEFINEA and the EPFL's Laboratory of Environmental Chemistry and Ecotoxicology (CECOTOX). For the fourth and last year of my engineer curriculum at EPFL, I had to do an internship: I chose to carry out an assessment of the ecotoxicity of lixiviate (percolating water) at two contaminated sites in Ho Chi Minh City.

This was a very interesting and useful research project, as I did the first ecological tests undertaken at these contaminated sites. I used *Daphnia magna*, *Vibrio fischeri* (Microtox®), and *Ceriodaphnia cornuta*, a local organism that has been isolated in the Saigon River in 1998 by Dr Do Hong Lan Chi. In addition, I could complete the description of the samples by determining some physico-chemical parameters such as pH, DOB, DOC and heavy metal concentrations for which I used atomic absorption spectrometry (AAS).

The first studied site was the garbage dump of Dong Thanh, located at 20 kilometres in the north of the city. For about ten years this dump site of more than 40 hectares has been filled with most of the city's rubbishes. The results I have obtained showed a high toxicity of the lixiviate accumulated in the retention basins on the tested species.

Located in the Tan Binh District, the second site was a sewage treatment plant for the sludge issued by Ho Chi Minh City's septic tanks. My research showed that percolating waters were highly contaminated (DCO>1900mg/l). It also highlighted the problem of accumulating heavy metals.

Ecotoxicological tests carried out on the two sites have confirmed the better sensibility of *C. cornuta* in comparison with *D. magna*. Having a better representativity in tropical climates, *C. cornuta* should soon replace *D. magna* in the tests.

Besides my research work, my stay at the IER-CEFINEA enabled me to get more familiar with some environmental problems that curse the region ; for instance, the issues of dramatic air pollution or contaminated surface water by small- and medium-sized enterprises.

And of course, besides the scientific interests that motivated my research in Vietnam in the first place, the project of studying abroad also attracted me for its cultural and social aspects: I have found new friends in Vietnam and I hope to have the pleasure to welcome them in Switzerland at EPFL sometime!”





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