

## Fiche analytique – Mémoire de Master MUSE

A rendre au secrétariat lors de l'inscription à la soutenance du mémoire

\* champs obligatoires

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<b>TITRE MEMOIRE*</b>	Plastic pollution in aquatic systems		
<b>NUMERO MEMOIRE</b>	218		
<b>DATE SOUTENANCE</b>	19/04/2016	Salle: B003	Heure: 10:15
<b>THEMATIQUE* (AFFILIATION)</b>	Science De L'eau		
<b>VOLEE MUSE*</b>	2013		
<b>TITRE ACADEMIQUE* (par ex.: licencié en biologie)</b>	Master en Droit		
<b>DIRECTION* / EVALUATION</b>	Directeur de mémoire*  Serge Stoll Christel Hassler Vera Slaveykova	Co-directeur de mémoire*	Nom(s) du ou des juré(s)*  Serge Stoll Vera Slaveykova Faure Florian
<b>STAGE (éventuel)</b>	Organisme d'accueil	Maître de stage	
<b>Projet de l'ISE (éventuel) auquel le mémoire est rattaché</b>			
<b>Bourse (éventuelle) reçue par l'étudiant</b>			
<b>COLLATION*</b>	Nb de pages* 60	Nb de figures* 64	Nb de tableaux* 9
<b>TERRAIN D'ETUDE OU D'APPLICATION</b>	Lake Lemman ( Geneva Lake)		
<b>MOTS-CLES* (entre 5 et 10)</b>	plastic pollutants, micro beads, microplastics, Plastic debris, biodegradation, ecotoxicity		
<b>RESUME* (max 1500 car)</b>	<p>In our study, we initially focused on a broad bibliography which address the general issues of plastic pollution in the aquatic environment, the types of plastics in the environment, plastic transformation mechanisms, sources of plastics and the impacts of these pollutants to the environment. Secondly, a laboratory experimental study of plastic beads was conducted to assess the behavior of these latexes in Milli-Q water, culture media and natural water. On those basis, thirdly, the microplastic ecotoxicity essay also has been done with the zooplankton (<i>Daphnia magna</i>). At same time, samples were collected in Lake Geneva to analyze the plastic pollutants quantity, types and their sources. These samples then were isolated and analyzed with a serial of processes and the different types of plastics were collected finally. The further analysis also has been done to characterize those collected plastics.</p>		
<b>SUMMARY* (en anglais)</b>	Since the mass production of plastics began in the 1940s, plastic has achieved		

	<p>a pivotal status, with extensive commercial, industrial, medicinal and municipal applications. However, as the super resistance and persistence nature of the plastic, especially the plastic micro beads, it poses a massive contamination problem for the environment, especially in the aquatic system where it is difficult to monitor.</p> <p>Here, this research has been conducted with the following objectives: (1) A review of literature which introduces the general situation of the plastic pollution in aquatic systems. (2) Analysis of the plastic pollutant transportation and degradation mechanisms. (3) Methods and materials of our research. (4) Assessment of the microplastic ecotoxicity <i>Daphnia magna</i>. (5) Sampling and characterization of plastics from Lake Geneva. (6) Discussion and conclusion: integrating the plastic pollution in a view of societal influence.</p> <p>I elaborated this study as a first step towards better understanding and addressing mainly the micro-plastic pollution problem in different aquatic systems. I expect this work will provide valuable insight into determining the origins of this pollution, the mechanism of the degradation, the influence to the environment, and that it will also offer a starting point for stakeholders, and society more broadly, to develop community-centered initiatives to reduce or even eliminate plastic pollution in our environment. For going further, we conclude by highlighting key future research areas for scientists and policymakers.</p>
<b>REMARQUES</b>	