

## Fiche analytique – Mémoire de Master MUSE

\* champs obligatoires

<b>AUTEUR*</b>	NOM : Saavedra	PRENOM : Juan	
<b>TITRE MEMOIRE*</b>	« Plastics, Threat of a new planetary pollution »		
<b>NUMERO MEMOIRE</b>	253		
<b>DATE SOUTENANCE</b>	22/12/2016	Salle: B003	Heure: 14h00
<b>THEMATIQUE* (AFFILIATION)</b>	Sciences de l'eau		
<b>VOLEE MUSE*</b>	2014		
<b>TITRE ACADEMIQUE* (par ex.: licencié en biologie)</b>	Génie de l'Environnement		
<b>DIRECTION* / EVALUATION</b>	Directeur de mémoire* Serge Stoll	Co-directeur de mémoire* Vera Slaveykova	Nom(s) du ou des juré(s)* - Serge Stoll - Vera Slaveykova
<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>	Financement Mémoire de Master MUSE (Mars 2016)		
<b>COLLATION*</b>	Nb de pages* 75	Nb de figures* 56	Nb de tableaux* 6
<b>TERRAIN D'ETUDE OU D'APPLICATION</b>	Geneva		
<b>MOTS-CLES* (entre 5 et 10)</b>	Microplastic, Amidine, Carboxyl, Alginate, Humic Acid, Microorganisms, Ecotoxicology		
<b>SUMMARY*</b>	<p>Due to their wide range of applications, plastics have become the most common, useful and versatile materials since the beginning of the 20th century and its production is increasing dramatically with the growing population and the industrialized society. Unfortunately, the characteristics that make plastic products so useful such as its durability, light weight and low cost, also make them a huge problem when they arrive to the end of their life. Society has been slow to anticipate the need for dealing adequately these products to prevent plastics entering to the marine environment. As a result, there has been a substantial volume of plastic debris added to the ocean over the past 60 years, covering a very wide range of sizes (from meters to nanometers in diameter) that have been demonstrated that cause different types of negative ecological impacts on wildlife and which is necessary to continue investigating in order to better understand their mechanisms and behaviors on the environments and their ecotoxicological impacts on aquatic species.</p> <p>The present research was performed using advanced technologies such as ZetasizerNano machine which has been used to analyze the behavior or microplastic particles (amidine and carboxyl) in terms of size and zeta potential. These two parameters provide direct information related with the stability of the particles and the formation of aggregates.</p>		

	<p>Initially, the microplastic particles were characterized regarding their pH values in Milli-Q water. Then at a pH fixed of 8, organic matter (alginate and humic acid) were added to the solutions to analyze their change of particle size and zeta potential values. The same process was carried out in the water of Geneva Lake. Finally, different concentration of microplastic particles were put in contact with three different types of microorganisms and the EC50 (Concentration of toxicant at which 50% of its maximum response; dead or immobilization, is observed) was calculated.</p>
<b>REMARQUES</b>	

Version 4, 30 janvier 2012