

American University of Sharjah

SEHAR

Sharjah Environmental Hazards Assessment and Remediation

Dr. Lara Dronjak



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Introduction

PhD thesis: Microplastics: An Emerging Contaminant in Environmental Compartments- A Comprehensive Analysis of Distribution and Environmental Impact



Screening of microplastics in water and sludge lines of a drinking water treatment plant in Catalonia, Spain

Lara Dronjak ^a, Nora Exposito ^a, Joaquim Rovira ^{a b}  , Karin Florencio ^d, Pere Emiliano ^e, Beatriz Corzo ^d, Marta Schuhmacher ^a, Fernando Valero ^e, Jordi Sierra ^c





Tracing the fate of microplastic in wastewater treatment plant: A multi-stage analysis of treatment units and sludge ☆

Lara Dronjak ^a, Nora Exposito ^a, Jordi Sierra ^{a b}, Marta Schuhmacher ^a, Karin Florencio ^c, Beatriz Corzo ^c, Joaquim Rovira ^{a d}  



Mapping of heavy metal contamination associated with microplastics marine debris - A case study: Dubai, UAE

Atta G. Attaelmanan ^a  , Huda Aslam ^b, Tarig Ali ^b, Lara Dronjak ^c



SEHAR team

- **Advancing scientific understanding** of environmental hazards in the UAE and beyond.
- **Assessing pollutants** across marine, freshwater, terrestrial, and atmospheric environments.
- **Developing remediation measures** to mitigate and remove environmental pollutants.



Dr Lara Dronjak, Dr Rana Bilbeisi, Dr Fatin Samara, Dr Sandra Knuteson, Dr Venkatesh Gopal, Dr Sofian Kanan



Microplastic pollution in oyster bed ecosystems: An assessment of the northern shores of the United Arab Emirates

Meera Al Hammadi, Sandra Knuteson, Sofian Kanan, Fatin Samara*

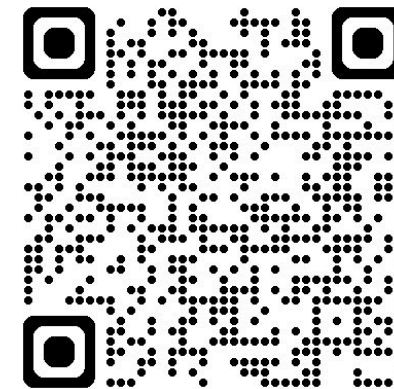
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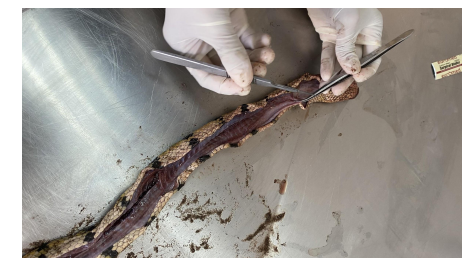
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ABSTRACT

Microplastics pollution in oyster bed ecosystems was investigated in this study. Microplastics in both sediments and oysters from five sites collected along the coast of the United Arab Emirates (UAE) oyster bed ecosystem were assessed for abundance, as well as shape, size, color, and composition. The mean abundance in the sediment samples was 191.7 ± 95.5 MP/Kg of d.w., while the mean abundance in the oyster samples was 101.2 ± 93.8 MP/Kg of sample. In general, 100% of the sediment samples and 51% of the oysters showed the presence of microplastics, yet no correlation patterns between sediment and oysters were seen in the abundance of microplastics. The major shape of microplastics found in all the samples were fibers, accounting for 93 % in all the sites; while the most occurring color was black, accounting for 53% in both the sediment and oyster samples. The most dominant size range was 1.0-2.0mm, which accounted for 34% in both the sediment and oyster samples. This is the first study in the region investigating the presence of microplastics in oyster beds. Considering the ubiquitous presence of microplastics in the sediments of the oyster beds in this study, their sources should be investigated and managed further as they can pose a potential threat to the marine ecosystem.

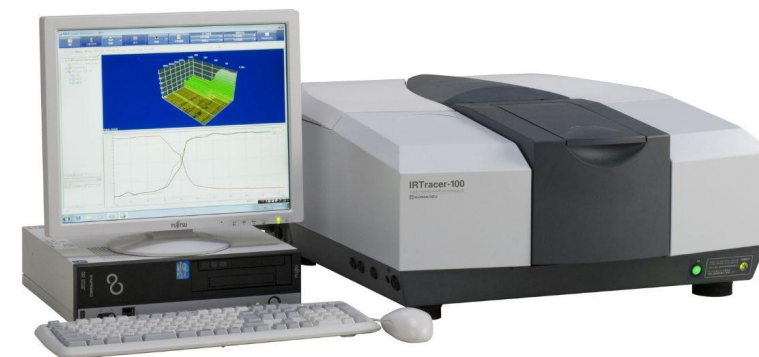
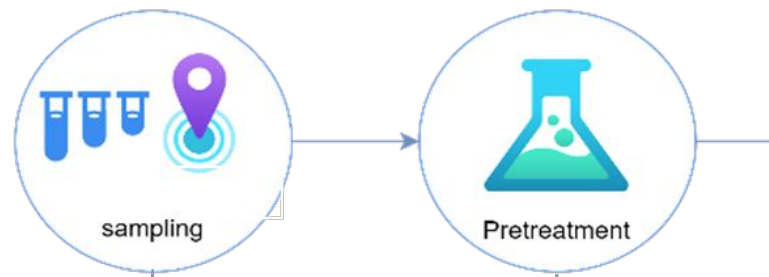


Baseline Studies in the UAE

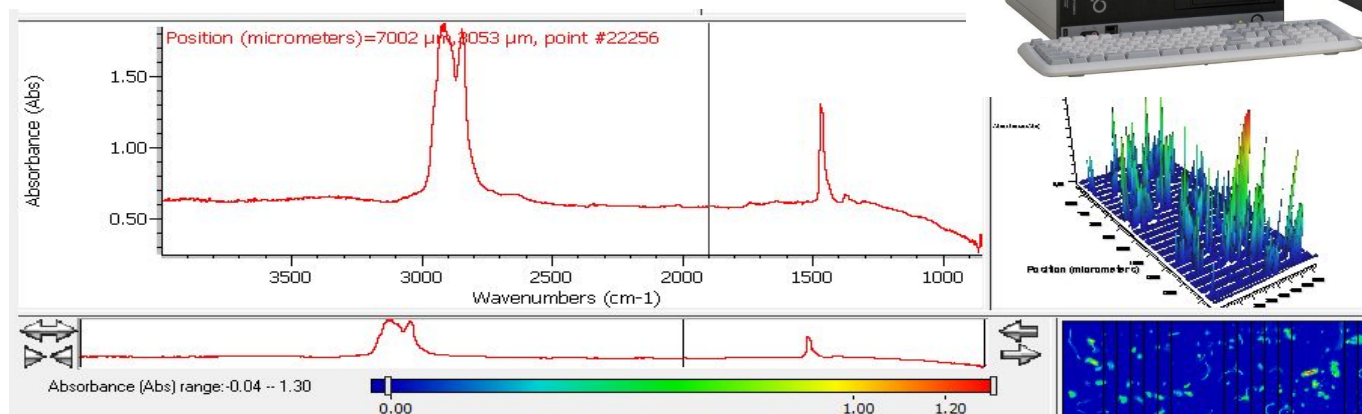
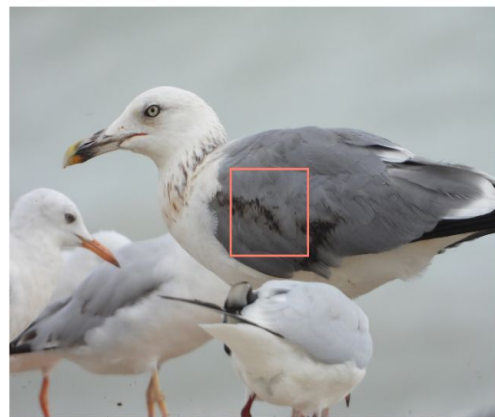


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CRNE GORE & BOSNE I HERCEGOVINE

Analysis and equipment



Schimadzu
IR Tracer 100



1

Removal of organic and inorganic matter

- ✓ Alkaline digestion (KOH)
- ✓ Density separation (KI)

2

Visual identification

- ✓ Optical microscope (220 x magnification)

3

Spectroscopic characterization

- ✓ FTIR spectroscopy
- ✓ Quality control (blanks,, clean environment, MPs free reagents)

Jaywun Marine Research Vessel



We are looking for **microplastics experts** to join us !

- Marine water quality assessments
- Air quality assessments
- Microplastic pollution studies
- WHEN: TBA
- WHO: Microplastics researchers
- Send us your proposal: Idronjak@aus.edu

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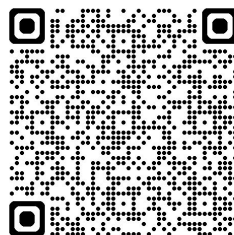


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Environmental Services · 119 followers · 2-10 employees

Hvala!

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