THE OCCURRENCE OF MICROPLASTICS IN SEDIMENTS OF BALTIC SEA OVER TIME

Ella Lehto, Department of Geology, University of Turku, Turku, FINLAND

Maiju Lehtiniemi, Outi Setälä, Sanna Suikkanen (SYKE Marine Research Centre), Emilia Uurasjärvi, Arto Koistinen (SIB labs, University of Eastern Finland, Kuopio), Saija Saarni (University of Turku)

SCHEDULE OF THIS MASTER´S THESIS

- Sampling 2017
- Thesis started 1/2021
- Basic analysis, spring 2021
- Start of laboratory works, autumn 2021
- Enzyme purification and FTIR, spring 2022

Figure 1. Sampling sites Tvärminne & LL7 (blue). Map is from MapSite, NLS (National Land Survey of Finland)
Figure 2. GEMAX sampler at Tvärminne. (S. Suikkanen)

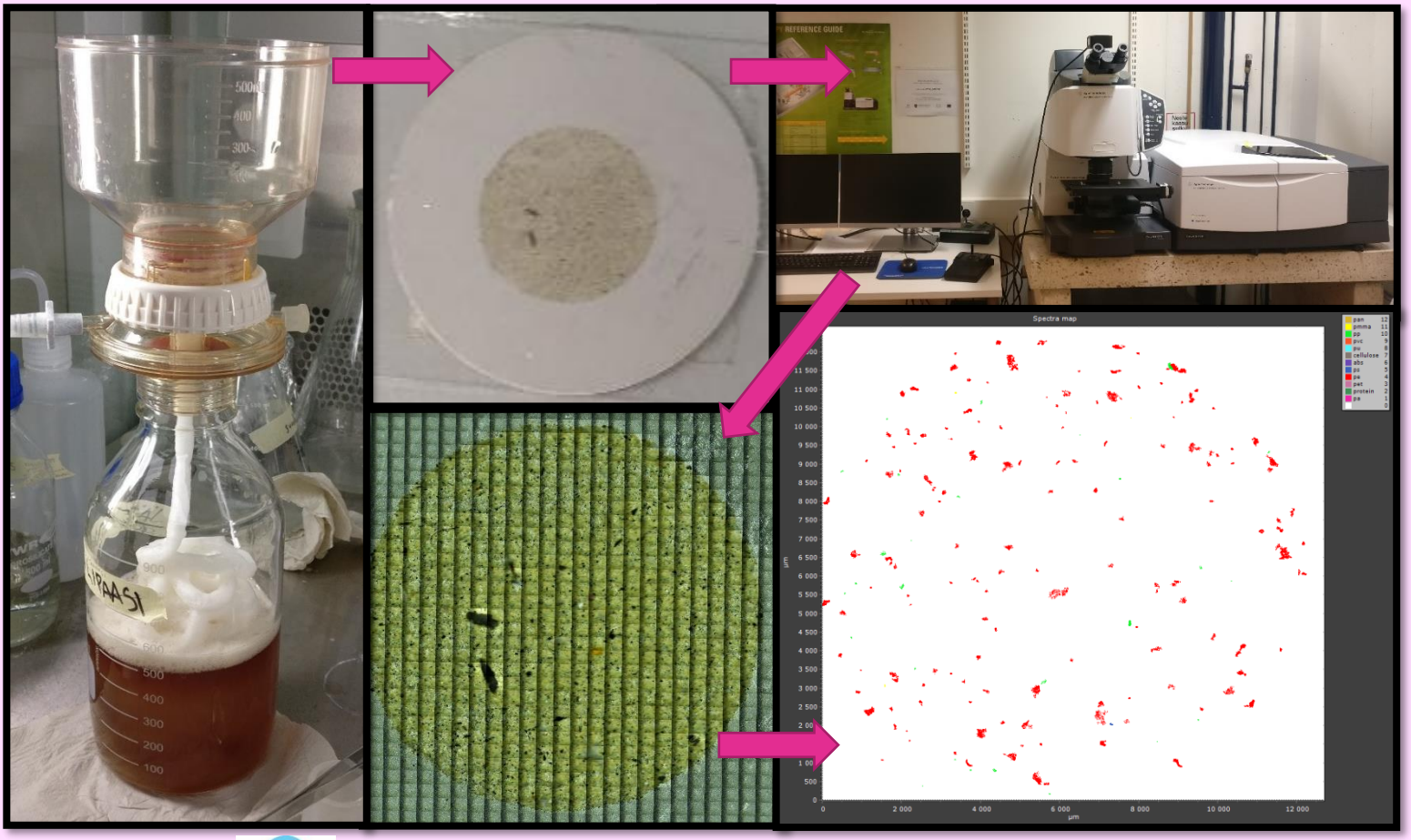
SAMPLE PURIFICATION:

- H2O2 – 35 % 50 °C
- LST (Li-heteropolytungstate) Heavy liquid separation X 3
- SDS – 100 ml 10 %
- PROTEASE – 20 ml PROTEASE + 100 ml TRIS HCl 1 M BUFFER
- LIPASE – 5 ml LIPASE + 100 ml TRIS HCl 1 M BUFFER
- CELLULASE X 3 – 25 ml CELLULASE + 100 ml NaOAc 1 M BUFFER
- AMYLASE – 20 ml AMYLASE + 100 ml NaOAc 1 M BUFFER

AIM OF THESIS:

- Comparison of coastal and open sea cores. Different sedimentation rates
  - Tvärminne: 0-40 cm, 1977 +- 4 AD
  - LL7: 0-11 cm, ~1940 AD
- What is the concetration of microplastics at different depths
- Can the increasing microplastic load be seen in cores?
  - More particles in top layers?

Preliminary results show no clear correlation between depth and the concentration of microplastics in cores. (Dry weight)
TV5 (8-10 cm, ~2007): 46 pcs/g-1
TV10 (18-20 cm, ~1997): 9 pcs/g-1
TV15 (28-30 cm, ~1987): 45 pcs/g-1
TV20 (38-40 cm, ~1977): 28 pcs/g-1



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