

Microplastics' Detection in Honey: Development of Protocols in a Simulation

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Table S1. Characterization of market honey packages.

Honey pack-aging	Honey Brand	Material Identification	Rate%
1	"Kirithron" (stick)	Low-density polyethylene (LDPE)	97.96
2	"Melin" (box)	poly(vinyl chloride) (PVC)	94.67
3	"Riva mini" (stick)	Polypropylene (PP)	94.44
4	"Anthologio" (box)	LDPE	97
5	"Fino" (box)	Polyethylene terephthalate (PET)	95.17
6	"Ameli" (box)	p(Vinyl chloride-co-vinyl acetate)	98.82
7	"Miel de flores" (box)	p-(styrene)	94.33
8	"γλυκάNΘH Greek honey" (bottle)	PET	96.67
9	"Blossom honey" (bottle)	PET	96.31
10	"Bonapi" (bottle)	PET	96.24
11	"Kipseli Greek honey" (bottle)	PET	97.65
12	"MeliTiME" (stick)	composite spectrum similar to PET	96.37
13	"greek honey" (stick)	composite spectrum similar to PET	94.42
14	"Golden Honey" (stick)	PP	92.17
15	Meli Filippon Seferidi (stick)	PET	95.69
16	"Beeez Honey" (stick)	PP	96.56
17	"Greek Honey Ελληνικό Μέλι" (stick)	PET	70.53
18	Miel Μέλι Honey (stick)	composite spectrum_0.17 polyethylene (PE)/0.22 PP	97.66/95.42

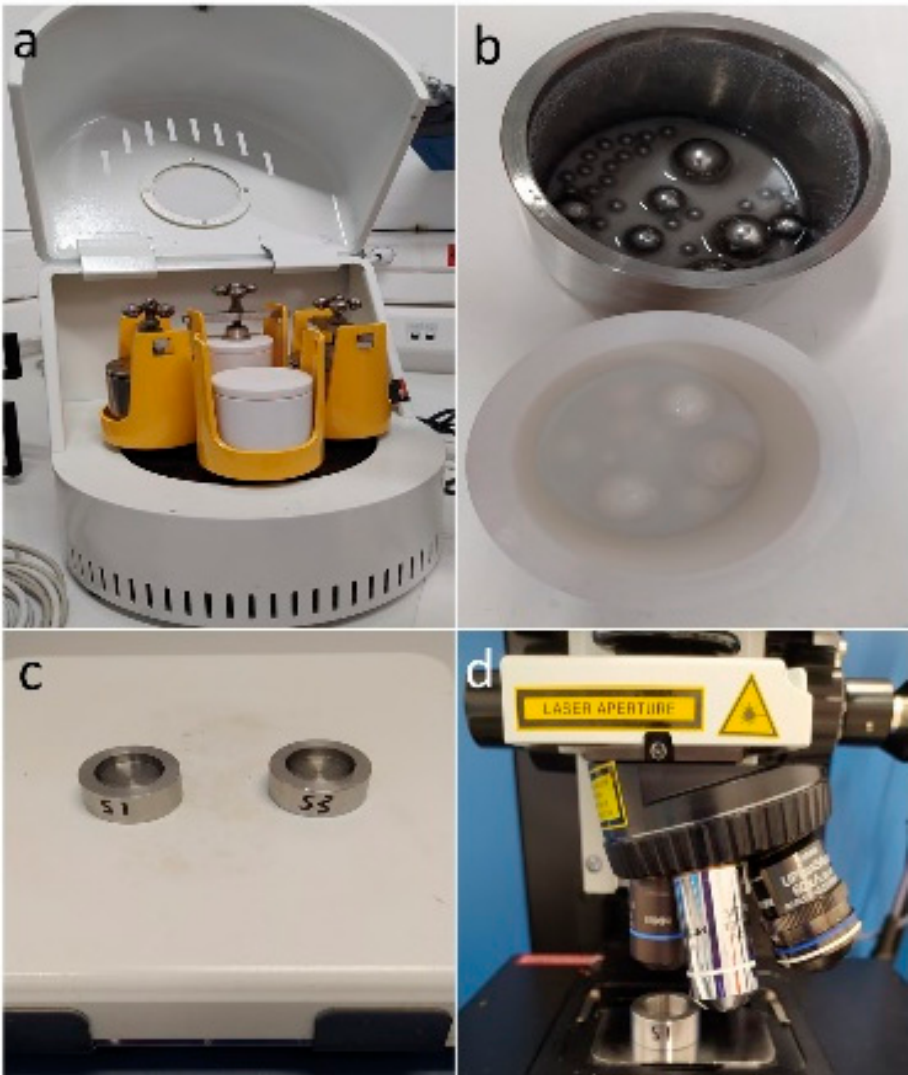
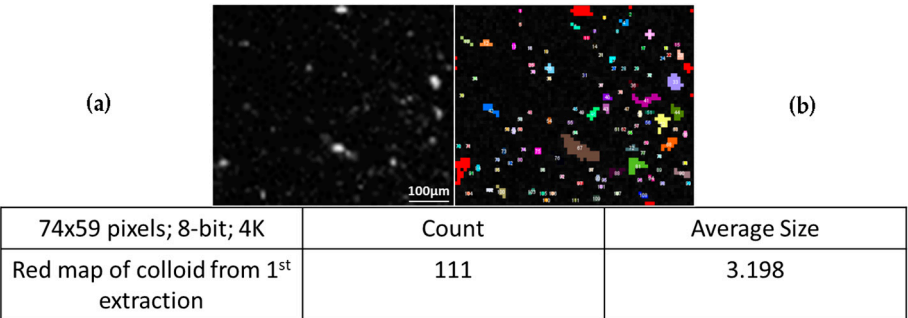


Figure S1. a) planetary mill ball with b) balls with metallic cups, c) metallic cups as samplers with a diameter of 19.6 mm, and d) metallic cup under the Raman microscope.



74x59 pixels; 8-bit; 4K	Count	Average Size
Red map of colloid from 1 st extraction	111	3.198

Figure S2. a) the mapping of the D_C1, in Protocol 2 from the Materials and Methods section, and b) the mapping of the picture S2a with ImageJ threshold, with its characteristics presented in the table.

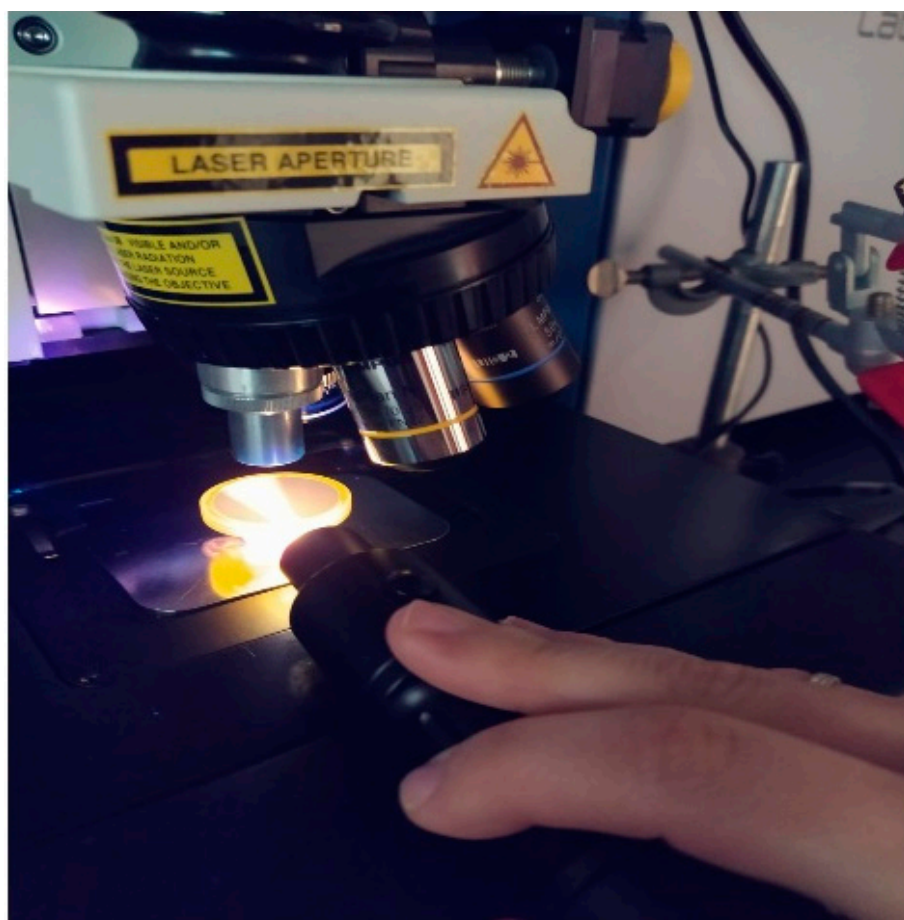


Figure S3. Experimental setup of UV excited fluorescence. The sample is placed under the objective lens, with the UV lamp in a way that the created beam is parallel to the flat area of the filter, holding the lamp by hand.

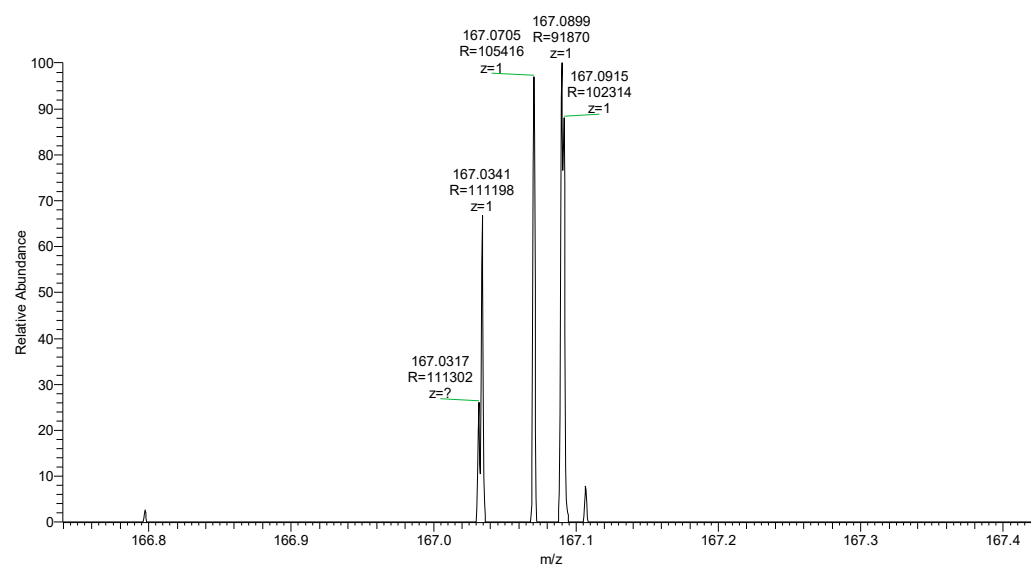


Figure S4. PET fragments' masses MH^+ m/z 167.0341 from the D_C1.

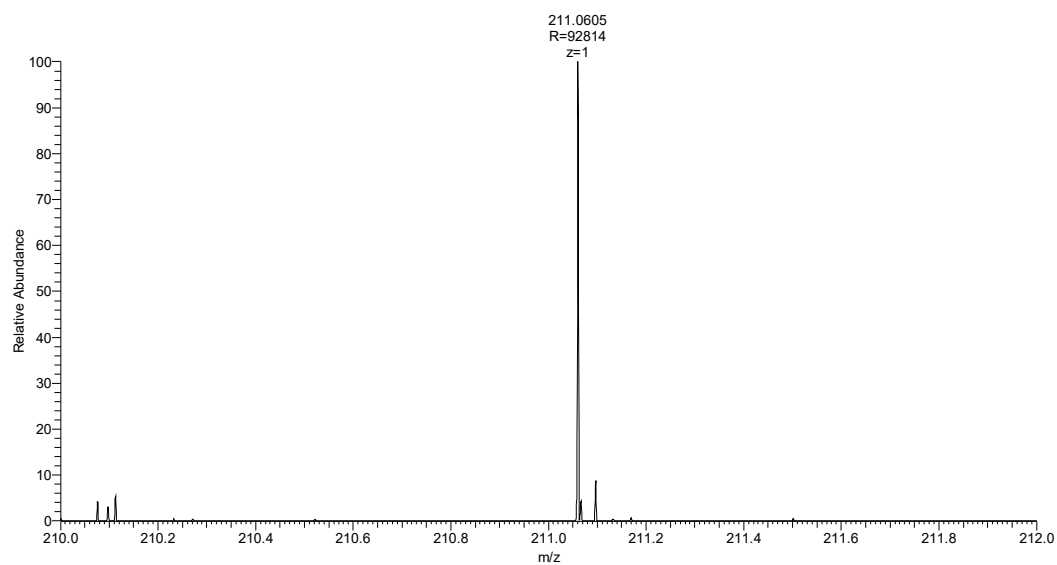
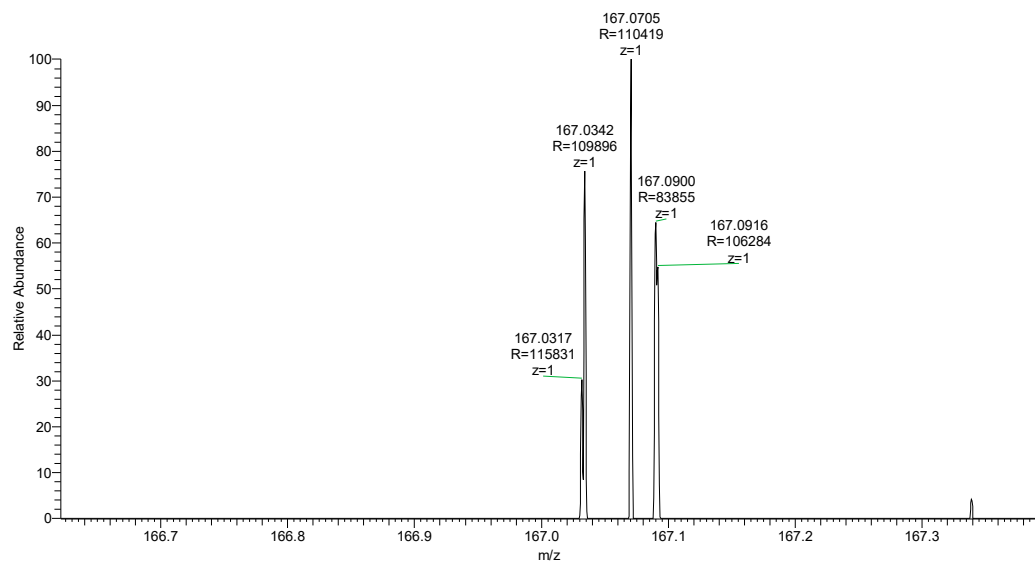
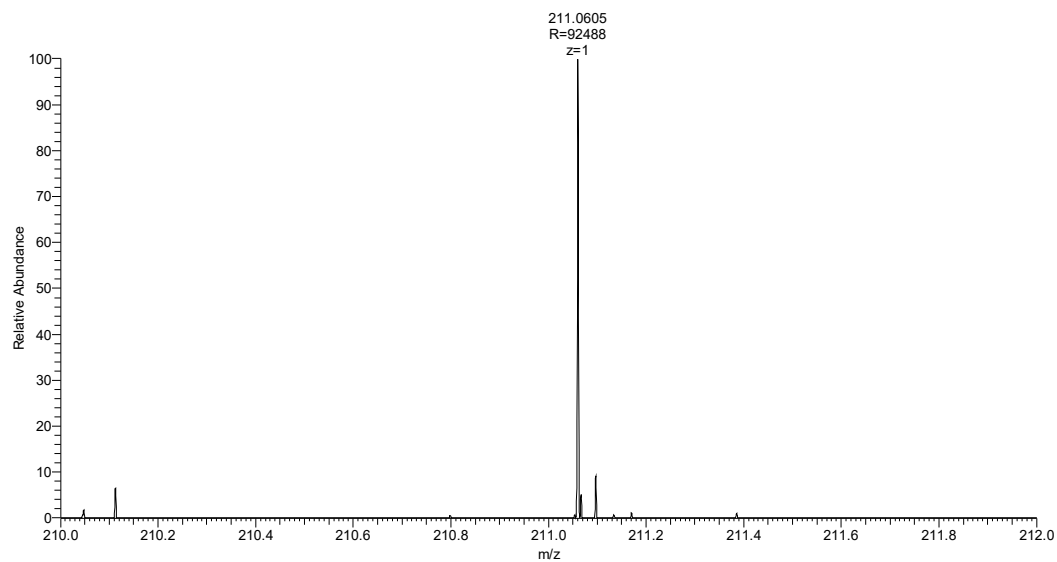
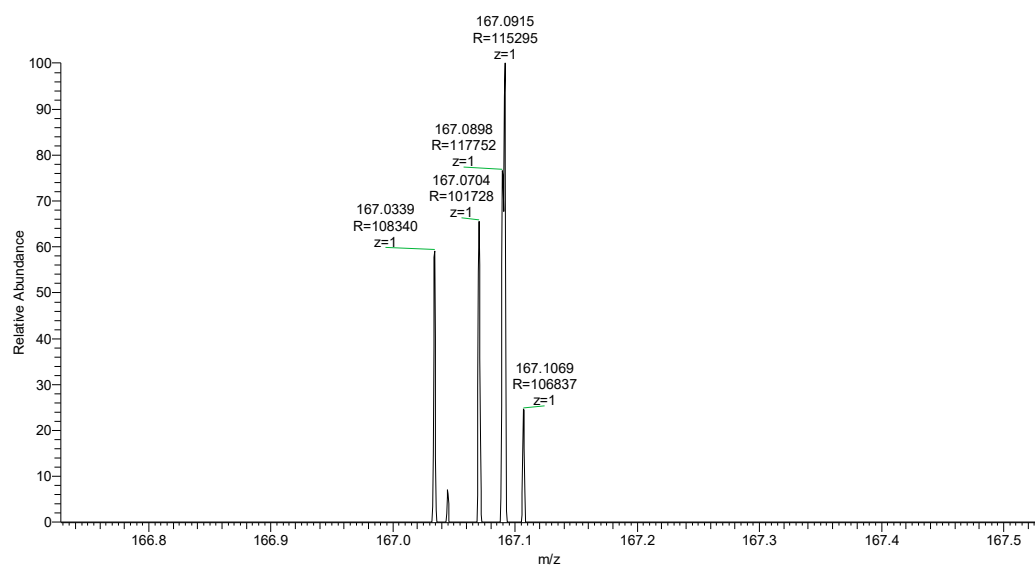
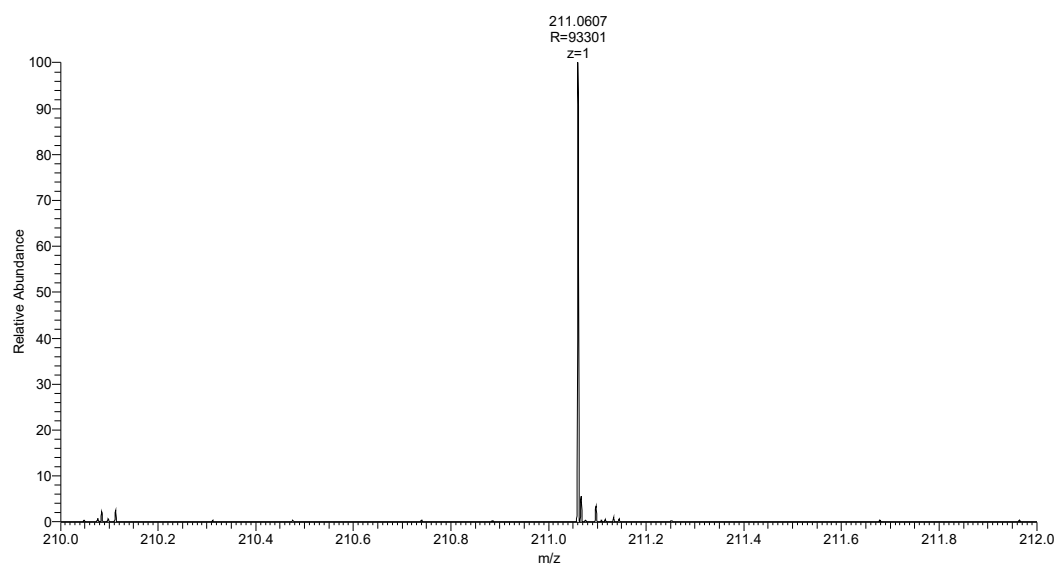
Figure S5. PET fragments' masses MH^+ m/z 211.0605 from the D_C1.Figure S6. fragments' masses MH^+ m/z 167.0342 from the D_C2.

Figure S7. PET fragments' masses MH^+ m/z 211.0605 from the D_C2.Figure S8. PET fragments' masses MH^+ m/z 167.0339 from the D_Final.Figure S9. PET fragments' masses MH^+ m/z 211.0607 from the D_Final.

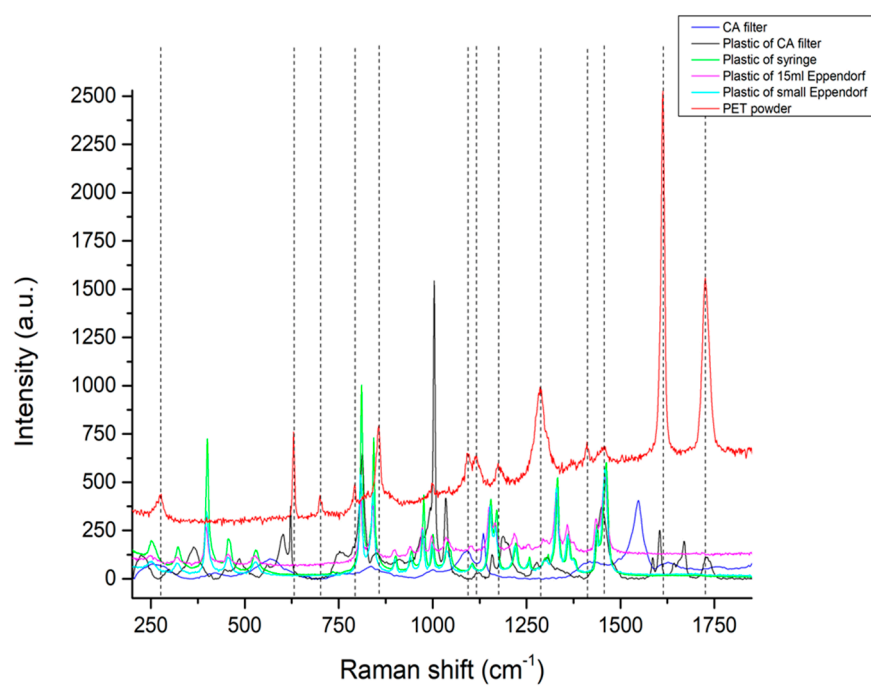


Figure S2. Raman signals from all plastics used for honey experiments, in comparison with PET powder.