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# Volatile carbonyl compounds emission in dry-process fibreboard: identification through a selective GDME-HPLC-DAD-MS/MS method

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**Table S1** – Experimental matrix for the $2^4$ full factorial design study.

| Run Order | Temperature | Time | Volume | Concentration |
|---|---|---|---|---|
| 1 | 30 | 10 | 250 | 0.10 |
| 3 | 30 | 60 | 250 | 0.10 |
| 5 | 30 | 10 | 750 | 0.10 |
| 7 | 30 | 60 | 750 | 0.10 |
| 9 | 30 | 10 | 250 | 0.30 |
| 11 | 30 | 60 | 250 | 0.30 |
| 13 | 30 | 10 | 750 | 0.30 |
| 15 | 30 | 60 | 750 | 0.30 |
| 17[a] | 45 | 35 | 500 | 0.20 |
| 18[a] | 45 | 35 | 500 | 0.20 |
| 2 | 60 | 10 | 250 | 0.10 |
| 4 | 60 | 60 | 250 | 0.10 |
| 6 | 60 | 10 | 750 | 0.10 |
| 8 | 60 | 60 | 750 | 0.10 |
| 10 | 60 | 10 | 250 | 0.30 |
| 12 | 60 | 60 | 250 | 0.30 |
| 14 | 60 | 10 | 750 | 0.30 |
| 16 | 60 | 60 | 750 | 0.30 |

[a] Runs 17 and 18 correspond to the centre points.

**Table S2** – Real and coded matrices for the Box-Behnken design.

| Run Order | Real matrix | | | Coded matrix | | |
|---|---|---|---|---|---|---|
| | Temperature | Time | Volume | Temperature | Time | Volume |
| 1 | 30 | 10 | 500 | -1 | -1 | 0 |
| 3 | 30 | 60 | 500 | -1 | +1 | 0 |
| 5 | 30 | 35 | 250 | -1 | 0 | -1 |
| 7 | 30 | 35 | 750 | -1 | 0 | +1 |
| 9 | 45 | 10 | 250 | 0 | -1 | -1 |
| 10 | 45 | 60 | 250 | 0 | +1 | -1 |
| 11 | 45 | 10 | 750 | 0 | -1 | +1 |
| 12 | 45 | 60 | 750 | 0 | +1 | +1 |
| 13[a] | 45 | 35 | 500 | 0 | 0 | 0 |
| 14[a] | 45 | 35 | 500 | 0 | 0 | 0 |
| 15 | 45 | 35 | 500 | 0 | 0 | 0 |
| 2 | 60 | 10 | 500 | +1 | -1 | 0 |
| 4 | 60 | 60 | 500 | +1 | +1 | 0 |
| 6 | 60 | 35 | 250 | +1 | 0 | -1 |
| 8 | 60 | 35 | 750 | +1 | 0 | +1 |

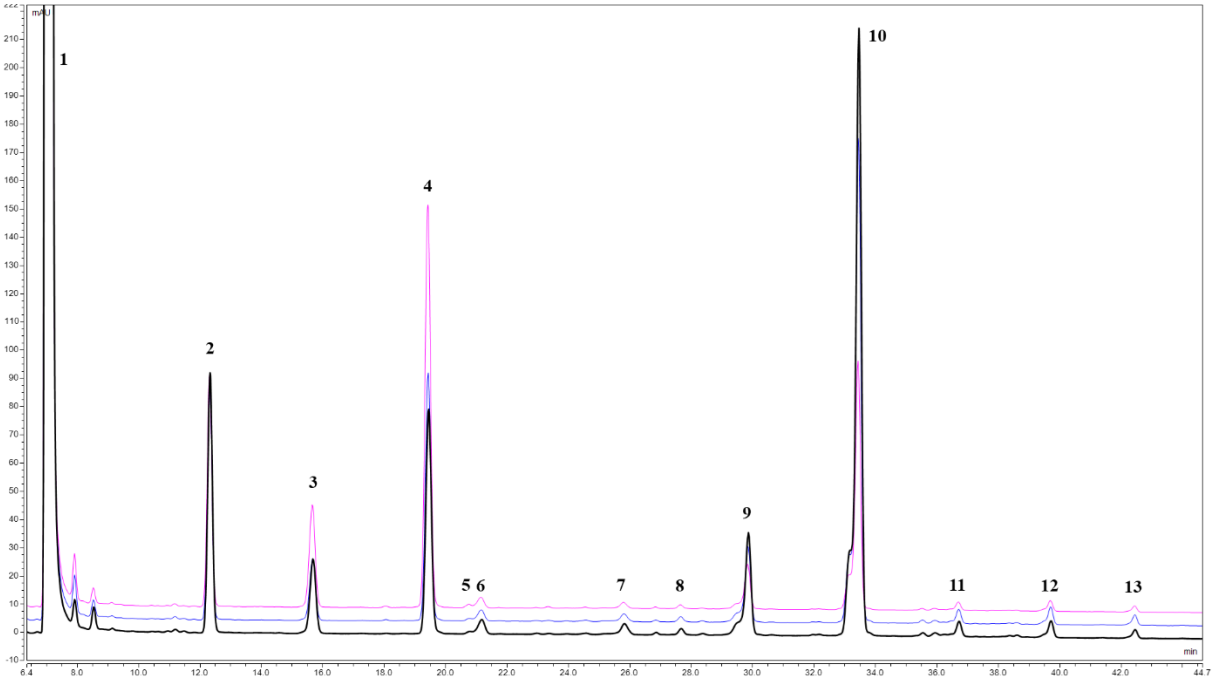
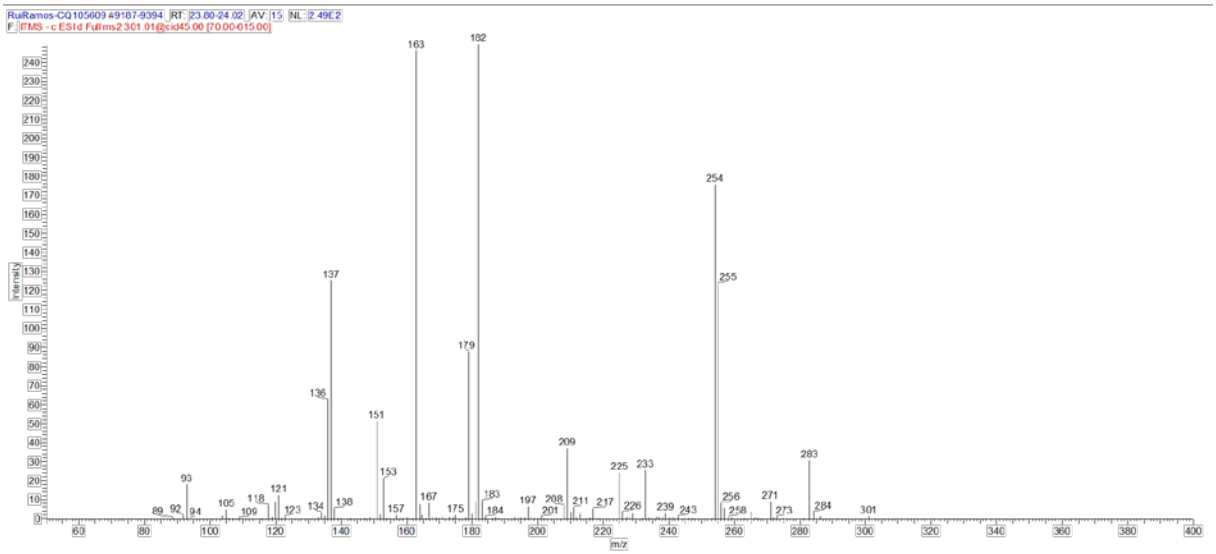
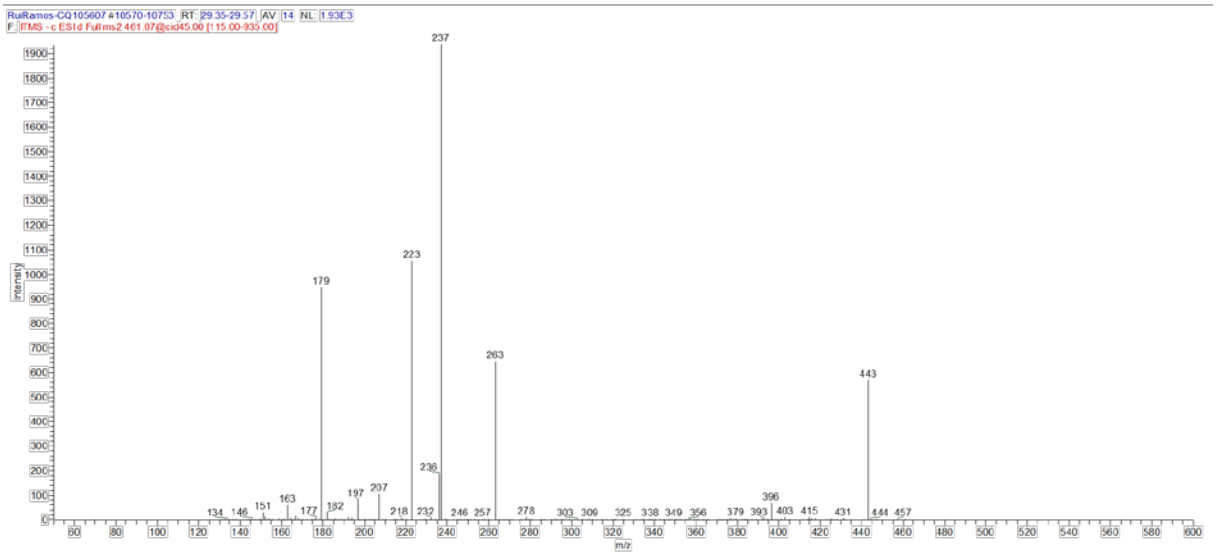



**Figure S1** – Representative chromatogram of orange MDF bonded with MUF resin with thicknesses of 12 mm (▬), 16 mm (▬) and 19 mm (▬). Identified compounds as DNPH derivatives: 1 – DNPH; 2 – formaldehyde; 3 – acetaldehyde; 4 – acetone; 5 – furfural; 6 – propanal; 7 – butanal; 8 – benzaldehyde; 9 – pentanal; 10 – hexanal; 11 – heptanal; 12 – octanal; 13 – nonanal.

Peak 8 $MS^2$




Peak 13 $MS^2$



Peak 20 $MS^2$

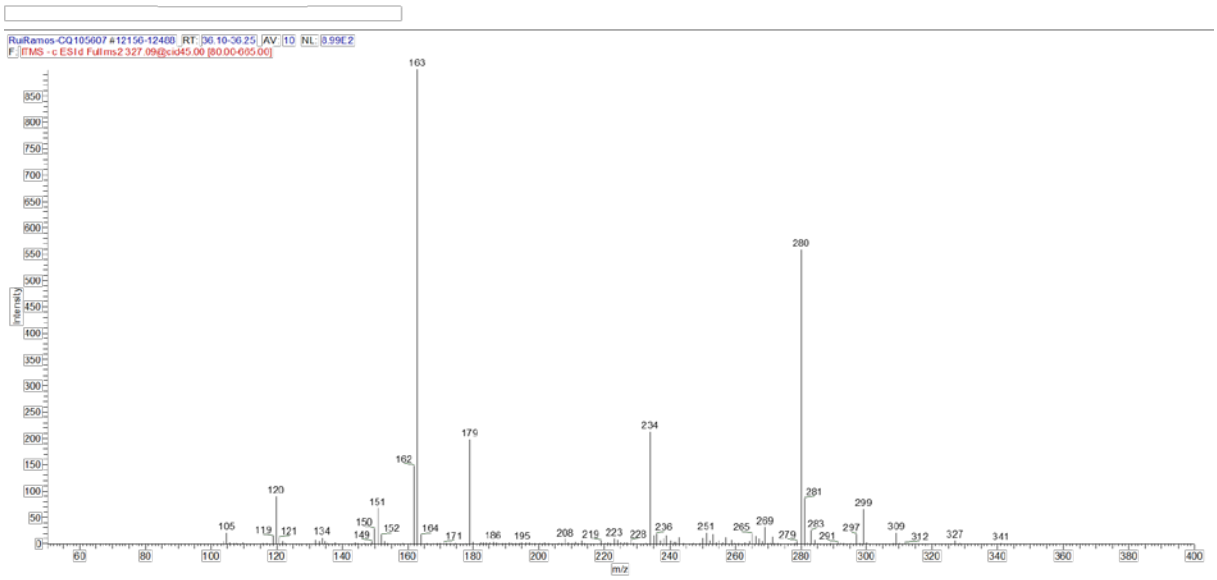



**Figure S2** – MS/MS spectrum for the $[M - H]^-$ ion for Peaks 8, 13 and 20.