

Analytical and Bioanalytical Chemistry

Electronic Supplementary Material

**Single-sided NMR: a non-invasive diagnostic tool for monitoring swelling effects
in paint films subjected to solvent cleaning**

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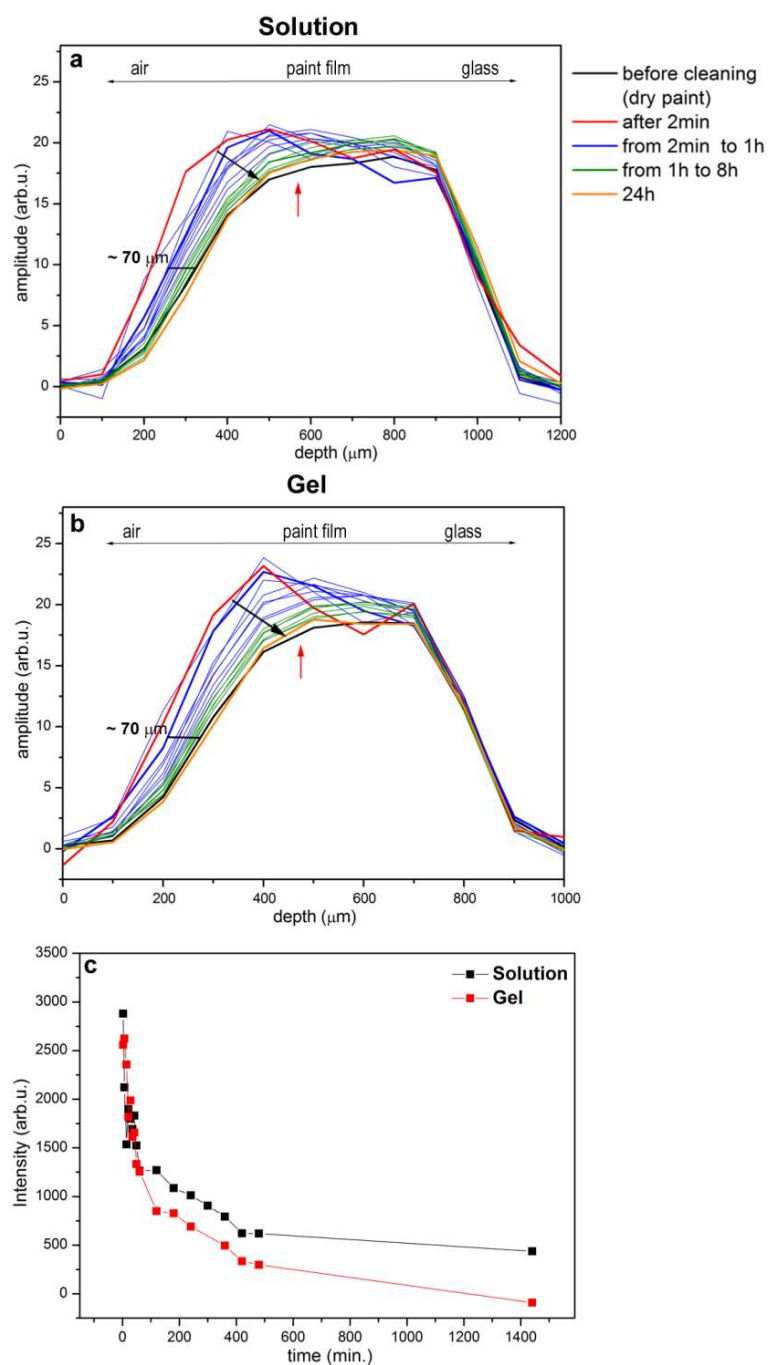


Fig. S1 Depth profiles collected on the replica of the acrylic emulsion model paint (test 2) for the (a) solution and (b) gel cleaning tests (same legend as for (a)). The water diffusion trend (black arrows) and the estimated swelling effect (calculated with respect to the FWHM) are shown. Red arrows refer to the depth selected for the acquisition of the CPMG decay curves. (c) Difference plots calculated as difference between the areas of the depth profiles collected after the two cleaning tests at different time intervals and the depth profiles collected before them (dry paints)

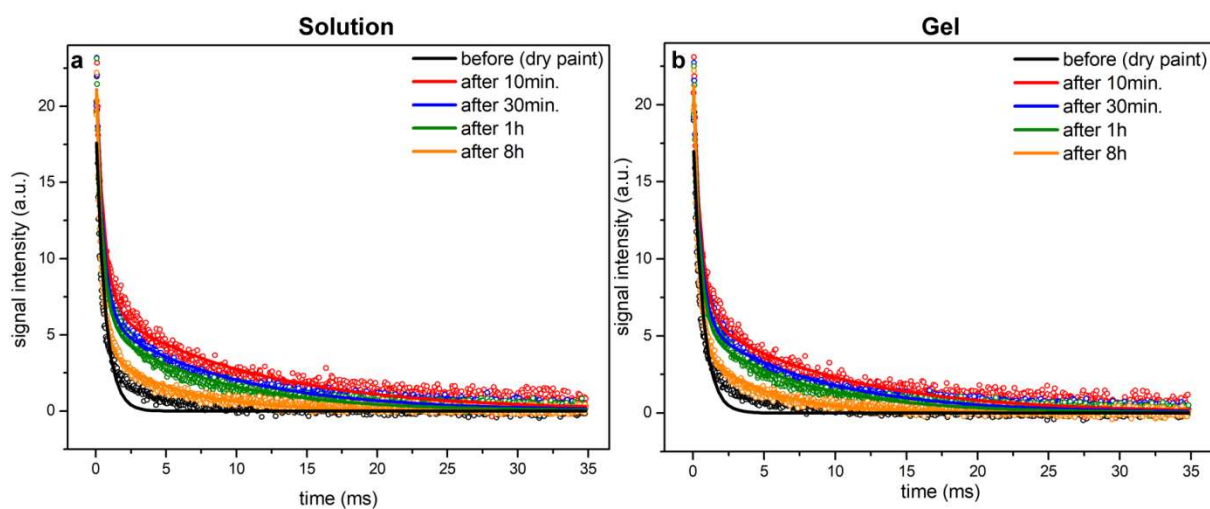


Fig. S2 CPMG echo decay curves and corresponding fits acquired at different time intervals on the replica of the acrylic emulsion model paint - test 2 (depth indicated by the red arrows in Fig. S1a,b) after (a) the solution and (b) the gel cleaning test

Tab. S1 T_2 values extrapolated from the fits of the CPMG echo decay curves shown in Fig. S2 for the acrylic emulsion model paint replica

Acrylic paint replica (T_2 dry = 0.7ms)	<i>Solution</i>		<i>Gel</i>	
	T_2 short (ms)	T_2 long (ms)	T_2 short (ms)	T_2 long (ms)
After 10min.	0.6	10.9	0.5	9.7
After 30min.	0.5	9.1	0.5	8.3
After 1h	0.5	7.8	0.4	7.2
After 8h	0.4	5.1	0.3	4.4

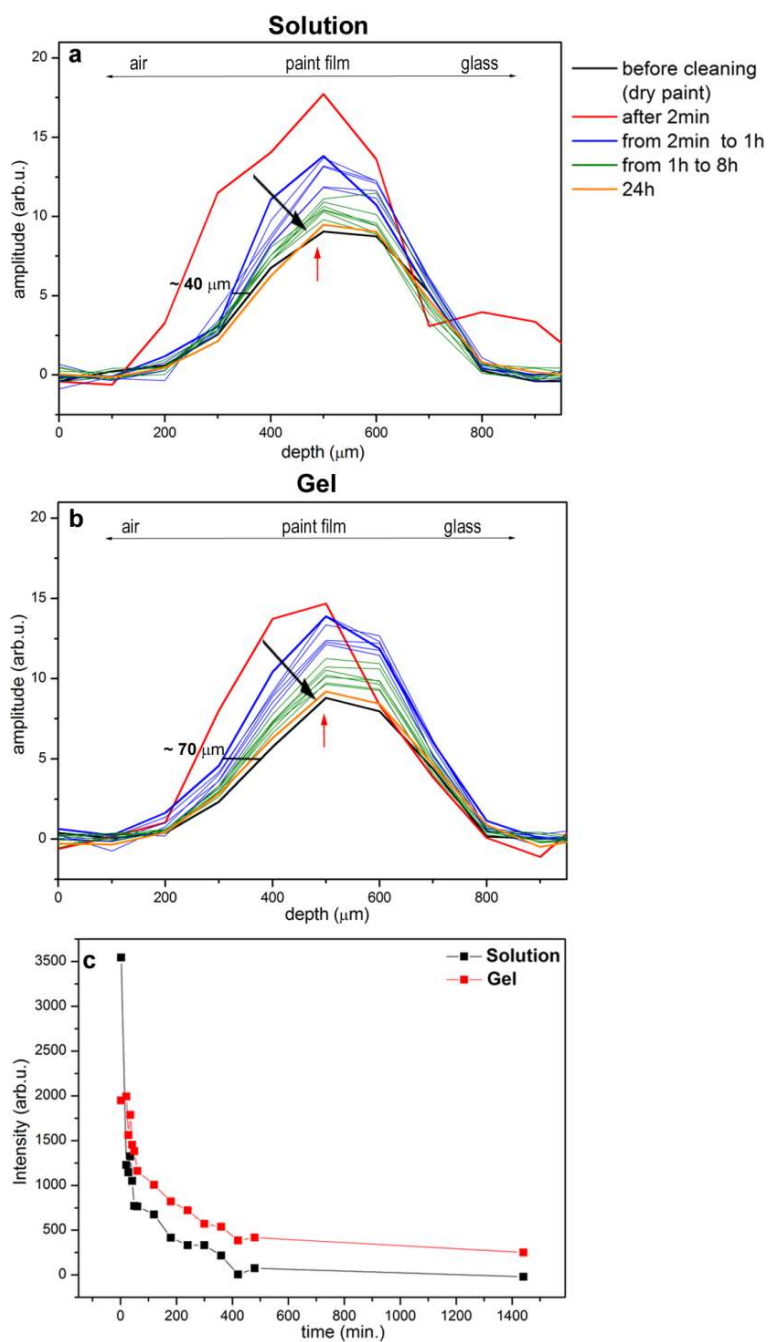


Fig. S3 Depth profiles collected on the replica of the vinyl model paint (test 2) for the (a) solution and (b) gel cleaning tests (same legend as for (a)). The water diffusion trend (black arrows) and the estimated swelling effect (calculated with respect to the FWHM) are shown. Red arrows refer to the depth selected for the acquisition of the CPMG decay curves. (c) Difference plots calculated as difference between the areas of the depth profiles collected after the two cleaning tests at different time intervals and the depth profiles collected before them (dry paints)

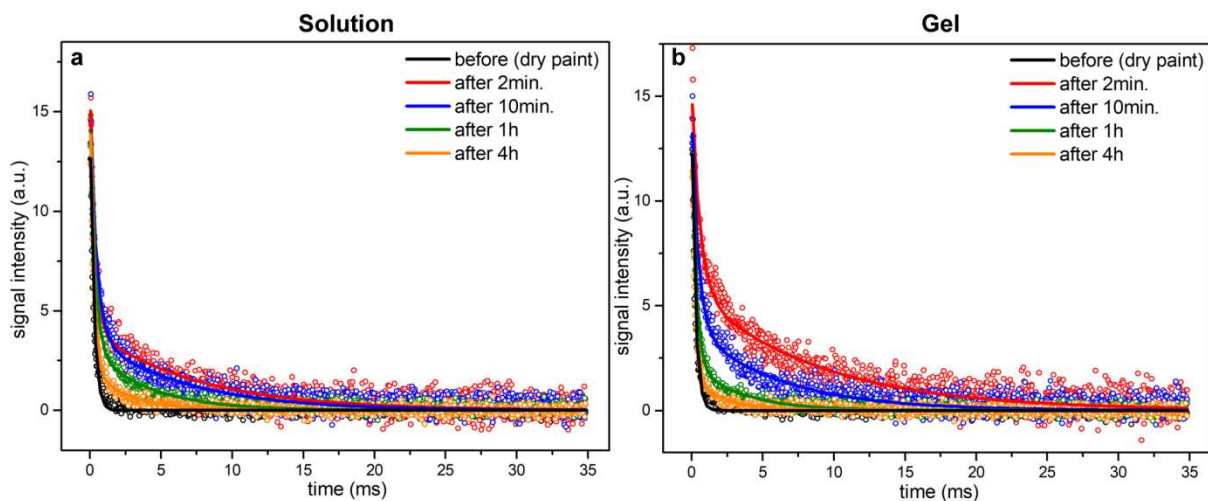


Fig. S4 CPMG echo decay curves and corresponding fits acquired at different time intervals on the replica of the vinyl model paint – test 2 (depth indicated by the *red arrows* in Fig. S3) after (a) the solution and (b) the gel cleaning test

Tab. S2 T_2 values extrapolated from the fits of the CPMG echo decay curves shown in Fig. S4 for the vinyl model paint replica

Vinyl paint replica (T_2 dry = 0.3 ms)	<i>Solution</i>		<i>Gel</i>	
	T_2 short (ms)	T_2 long (ms)	T_2 short (ms)	T_2 long (ms)
After 2min.	0.3	7.5	0.6	8.9
After 10min.	0.5	6.7	0.5	6.1
After 1h	0.3	4.1	0.3	3.4
After 4h	0.3	2.9	0.2	2.2