Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Elucidating the Ionic Liquid Distribution in Monolithic SILP Hydroformylation Catalysts by Magnetic Resonance Imaging

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Compositions of monolith impregnations

Table S1: IL and sebacate contents of monolith impregnations.

Figure	IL loading wt.%	Sebacate loading wt.%
3c, 4b, 6c, 6d	2.17	2.20
4a, 6a, 6b	2.74	-
4c, 5a-d	5.80	-
4d	3.73	3.77
7a	3.16	3.20
7b	3.23	3.28
8	2.57	2.61

Pore volume determination by liquid absorption

Table S2: Pore volume determination by liquid absorption with water on pristine SiC monoliths.

Entry	m (monolith) g	m (monolith+H_2O) g	Pore volume ml g^{-1}
1	106.06	124.06	0.170
2	105.27	123.47	0.173
3	105.86	123.57	0.168
4	106.38	124.14	0.167

Drying procedure after monolith wet-impregnation

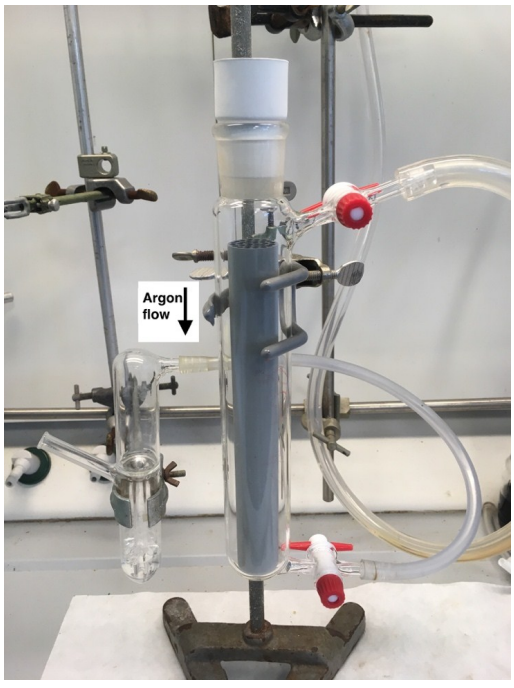

Figure S1: Photograph of a monolith during drying procedure.

Density spin integrals of the MR images

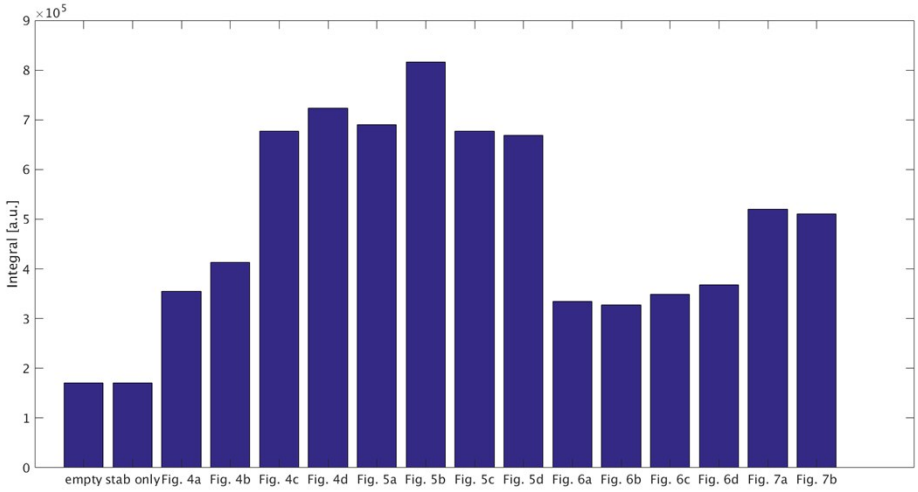

Figure S2: Integrals of signals of MR images.

MRI of a sebacate-only impregnated monolith

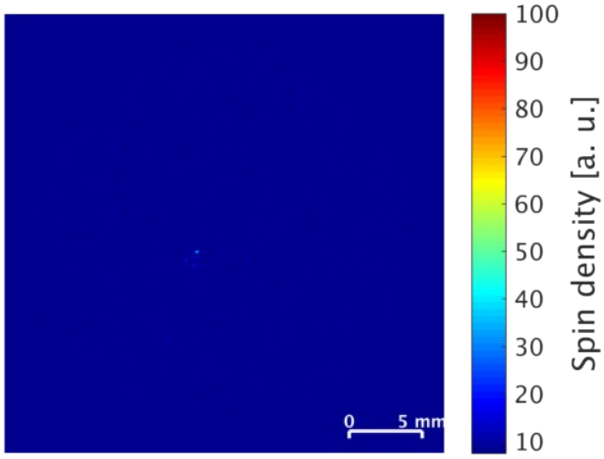

Figure S3: MR image of a sebacate-only impregnated monolith.

Slice-selective MRI of an impregnated SiC monolith at equal slice distances

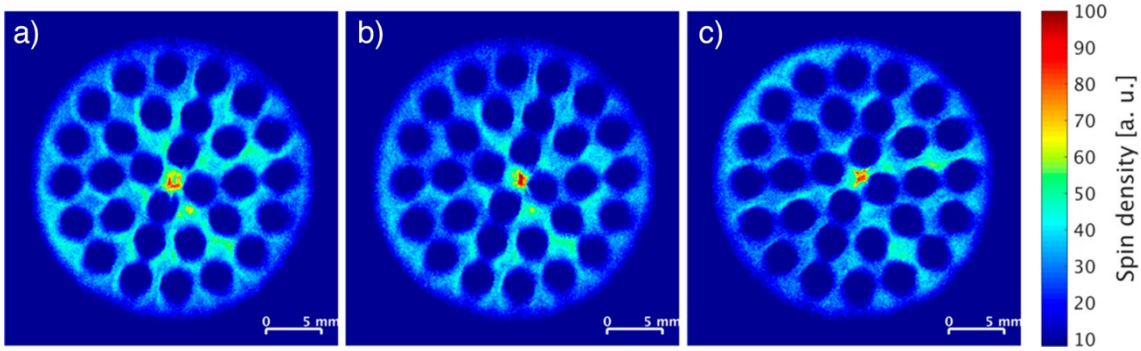

Figure S4: MR images of a SiC monolith with 3.73 wt.% IL and 3.77 wt.% stabilizer from top (a) to bottom (c).

Relative standard deviation

$$standard\ deviation, S = \sqrt{\frac{(x_1 - \bar{x})^2 + (x_2 - \bar{x})^2 + (x_3 - \bar{x})^2 + ...}{n - 1}}$$

$$RSD = \frac{100S}{\bar{x}} \quad \text{(S1)}$$

XPS survey spectra

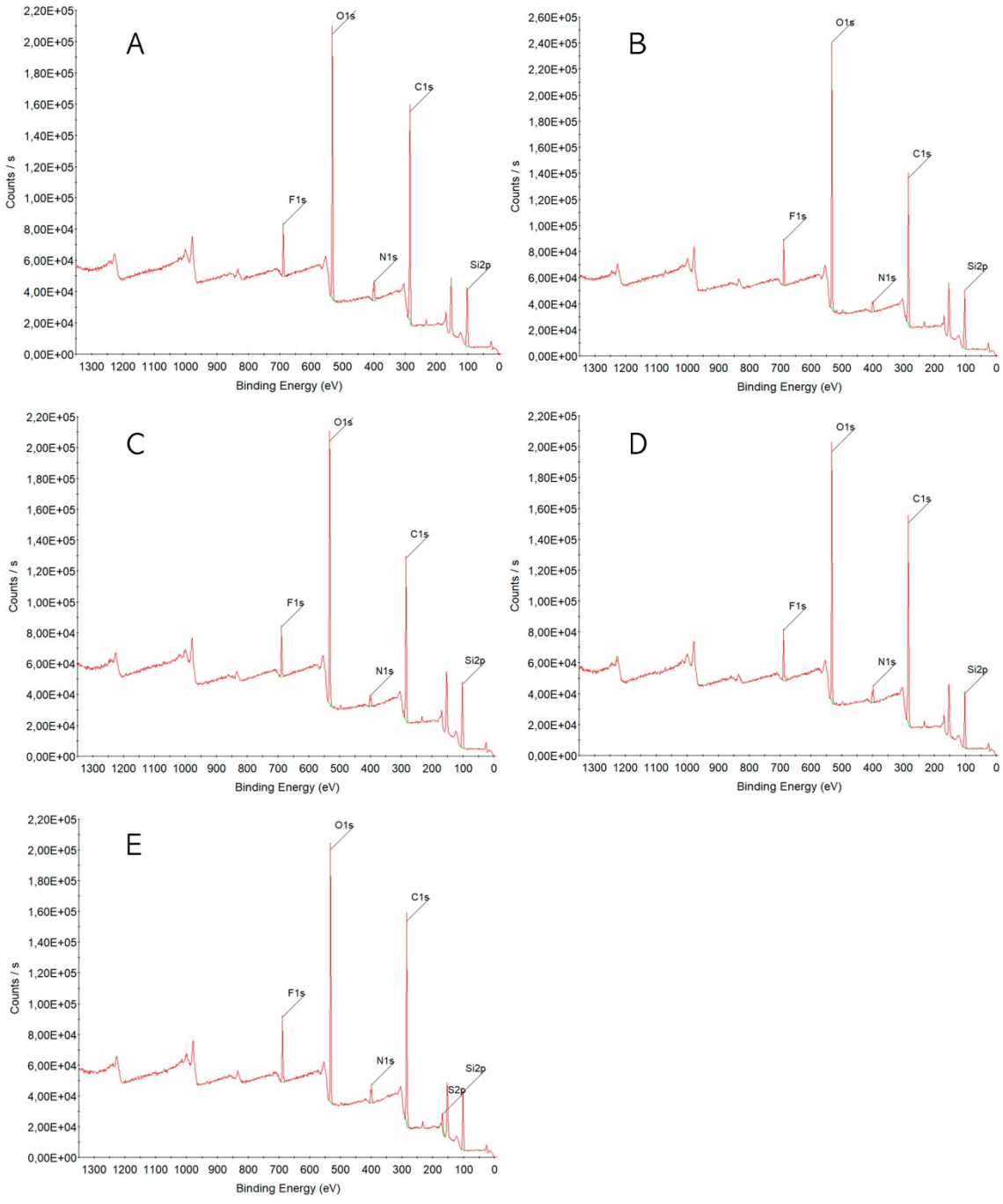

Figure S5: XPS survey spectra of SiC monolith with 2.57 wt.% IL and 2.61 wt.% stabilizer.