

Supplementary Material

Reassessing the role of magnetite during natural hydrogen generation

1 Supplementary Figures and Tables

	δ (mm/s)	2ϵ (mm/s)	B_{hf} (T)	Γ (mm/s)	Area (%)	Attribution
Starting magnetite	0.27(1)	-0.01(2)	49.3(2)	0.29(1)	38(3)	Fe^{3+} tet. (magnetite)
	0.65(1)	0.01(2)	46.2(2)	0.33(1)	62(3)	$Fe^{2+/3+}$ octa. (magnetite)
M80_1	0.28(1)	-0.01(2)	49.3(2)	0.31(3)	32(3)	Fe^{3+} tet. (magnetite)
	0.66(1)	-0.01(2)	46.2(3)	0.39(2)	51(3)	$Fe^{2+/3+}$ octa. (magnetite)
	0.35(3)	0.01(2)	50.6(3)	0.48(3)	17(3)	Fe^{3+} (maghemite)
M80_2	0.27(1)	-0.01(2)	49.3(2)	0.28(2)	26(3)	Fe^{3+} tet. (magnetite)
	0.65(1)	0.01(1)	46.2(3)	0.36(2)	48(3)	$Fe^{2+/3+}$ octa. (magnetite)
	0.35(1)	-0.01(2)	50.3(5)	0.50(3)	26(3)	Fe^{3+} (maghemite)
M200_1	0.27(1)	-0.01(2)	49.3(5)	0.30(3)	31(3)	Fe^{3+} tet. (magnetite)
	0.66(1)	-0.01(2)	46.2(3)	0.39(2)	47(3)	$Fe^{2+/3+}$ octa. (magnetite)
	0.35(3)	-0.01(2)	50.5(5)	0.45(3)	22(3)	Fe^{3+} (maghemite)
M200_2	0.28(1)	-0.01(2)	49.2(5)	0.31(3)	25(3)	Fe^{3+} tet. (magnetite)
	0.66(1)	0.01(2)	46.1(3)	0.41(2)	44(3)	$Fe^{2+/3+}$ octa. (magnetite)
	0.35(3)	0.01(2)	50.4(5)	0.56(4)	31(3)	Fe^{3+} (maghemite)

Supplementary Table 1. Hyperfine parameters and quantitative results of room temperature Mössbauer analyses for both duplicate experiments at 80°C and 200°C. For related Mössbauer spectra, see **Figure 4**.