Insights into nitrate-reducing Fe(II) oxidation mechanisms by analyzing cell-mineral associations, cell encrustation and mineralogy in the chemolithoautotrophic enrichment culture KS

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SUPPLEMENTARY INFORMATION

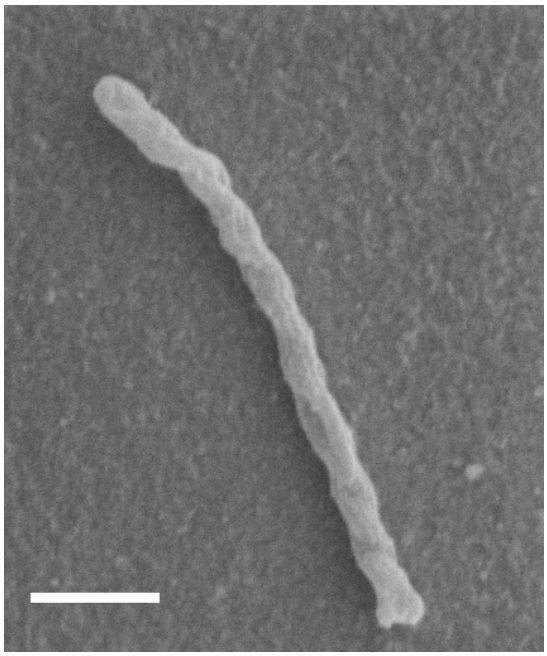

Figure S1: SEM image of a cell with rough surface from culture KS grown under heterotrophic conditions (5 mM acetate and 4 mM nitrate). Scale bar is 1 µm.

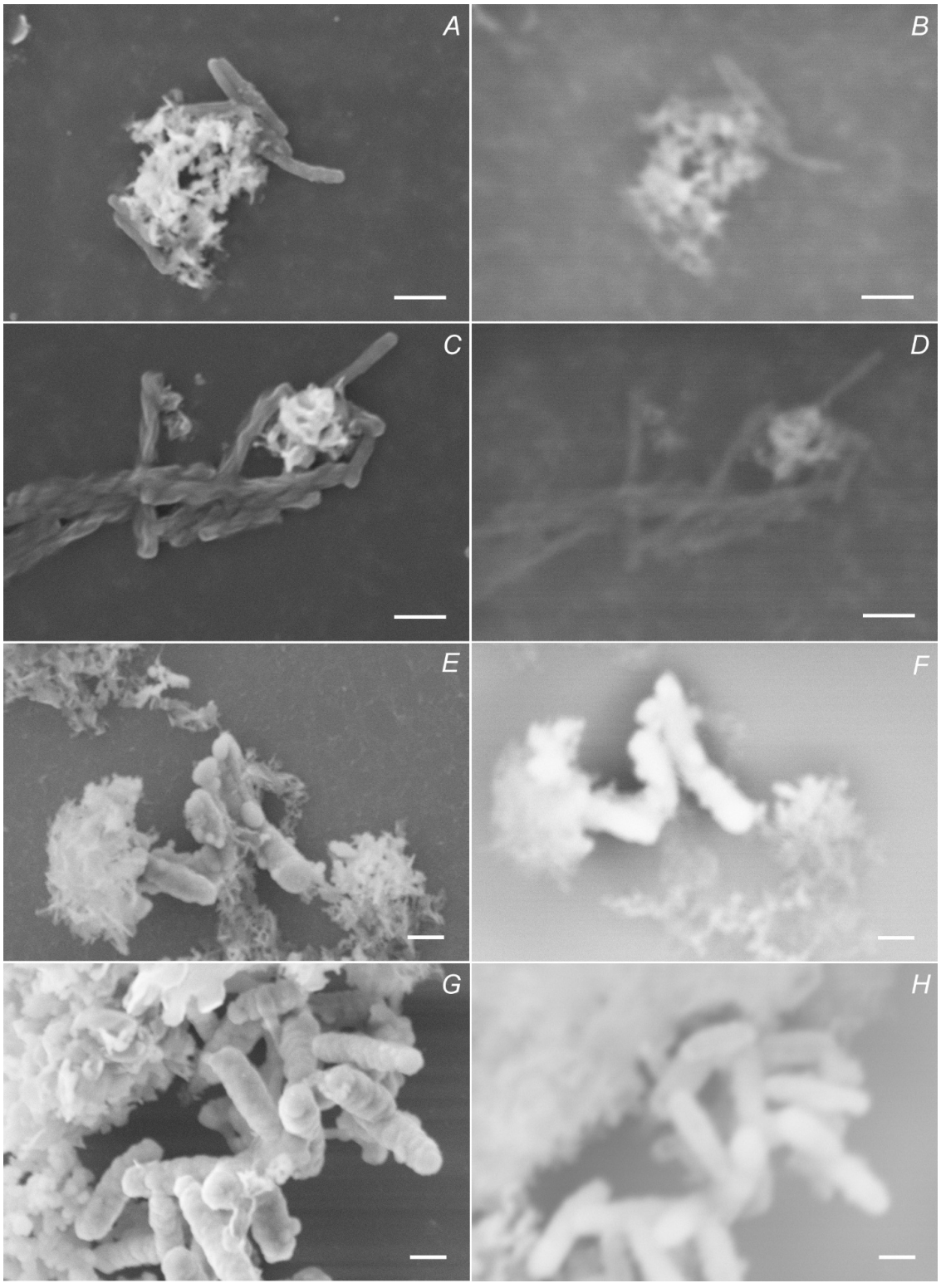

Figure S2: SE (6 kV) (left) and BSE (12 kV) (right) images of culture KS grown under autotrophic (10 mM Fe(II) and 4 mM nitrate) (**A**, **B**) and mixotrophic (10 mM Fe(II), 5 mM acetate and 4 mM nitrate) (**C**, **D**) conditions, and of *Nocardioides* sp. (**E**, **F**) and *Rhodanobacter* sp. (**G**, **H**) isolated from culture KS grown under mixotrophic conditions (10 mM Fe(II), 5 mM acetate and 4 mM nitrate). Scale bars are 1 µm.

Table S1: Moessbauer spectroscopy fitting parameters obtained for samples shown in figure 5 analyzed at 77 K. CS: center shift relative to α-Fe, QS: quadrupole splitting, σ: standard deviation, Pop.: relative population, χ2: error of the fit, Db: doublet.

		CS (mm/s)	QS (mm/s)	σ (mm/s)	Pop. (%)	χ^2
Rhodanobacter sp.	Db1	1.27	2.25	0.33	30.7	0.54
	Db2	1.34	3.25	0.19	32.1	
	Db3	1.39	2.64	0.04	13.0	
	Db4	0.59	0.46	0.23	19.8	
	Db5	0.54	1.30	0.00	4.0	
Nocardioides sp.	Db1	1.31	2.35	0.46	33.0	0.58
	Db2	1.35	3.24	0.19	28.0	
	Db3	1.37	2.62	0.14	10.0	
	Db4	0.55	0.53	0.28	25.0	
	Db5	0.48	1.20	0.00	4.4	
Culture KS autotrophic	Db1	1.33	3.21	0.6	14.1	0.67
	Db2	1.27	2.67	0.6	9.5	
	Db3	0.49	0.79	0.7	76.3	
Culture KS mixotrophic	Db1	1.32	3.22	0.8	9.1	0.67
	Db2	1.26	2.71	0.8	7.6	
	Db3	0.50	0.79	1.0	83.3	