Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Electronic Supplementary Information for:

Ice Nucleation Activity of Iron Oxides *via* Immersion Freezing and an Examination of the High Ice Nucleation Activity of FeO

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Summary: The supporting information contains a table with the lattice parameters of the iron oxide samples and their lattice mismatch with respect to cubic ice.

Table S1. The lattice mismatch along the a-, b-, and c-axes of the iron oxide samples with respect to cubic ice, I_c, to three significant figures.

	Lattice parameters[c]			Lattice mismatch along the axis		
	a	b	c	a (%)	b (%)	c (%)
I_c	6.53	6.53	6.53	-	-	-
AgI[a]	4.68	4.68	7.66	-28.3	-28.3	17.3
Corundum[b] [α-Al_2O_3] (Hexagonal)	4.77	4.77	13.0	-27.0	-27.0	99.4
Hematite [Fe_2O_3] (Hexagonal)	5.03	5.03	13.8	-22.9	-22.9	111
Magnetite [Fe_3O_4] (Hexagonal)	5.93	5.93	14.6	-9.24	-9.24	123
Goethite [FeOOH] (Orthorhombic)	4.61	9.99	3.03	-29.3	52.9	-53.6
Wüstite [FeO] (Cubic)	4.31	4.31	4.31	-34.1	-34.1	-34.1

[a]The lattice parameters of I_h and AgI were obtained from Cox et al. (2012).[1]
[b]The lattice parameters of corundum were taken from Chong et al. (2019).[2]
[c]The lattice parameters for the samples and I_c were determined from whole pattern fitting using Jade software.

References:

(1) Cox, S. J.; Kathmann, S. M.; Purton, J. A.; Gillan, M. J.; Michaelides, A. Non-Hexagonal Ice at Hexagonal Surfaces: The Role of Lattice Mismatch. *Physical Chemistry Chemical Physics* **2012**, *14* (22), 7944-7949.

(2) Chong, E.; King, M.; Marak, K. E.; Freedman, M. A. The Effect of Crystallinity and Crystal Structure on the Immersion Freezing of Alumina. *Journal of Physical Chemistry A* **2019**, *123* (12), 2447–2456.