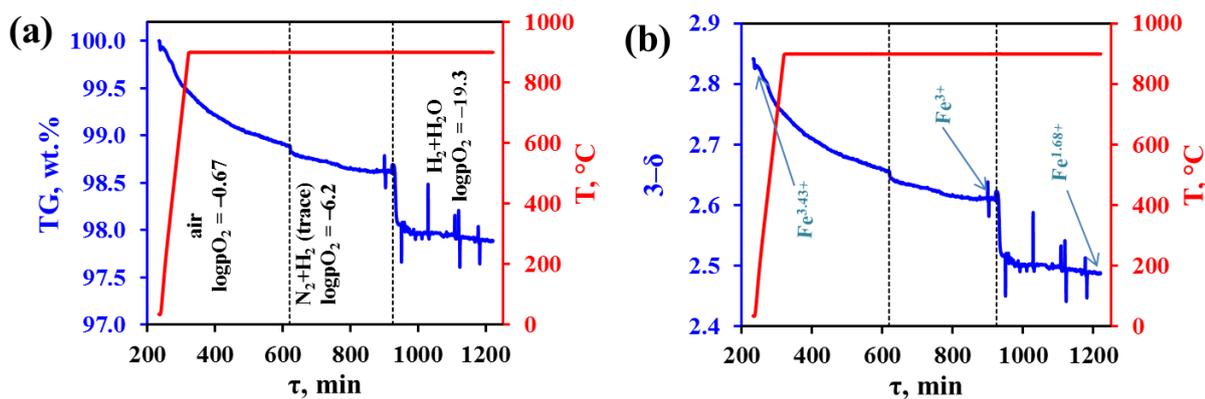


## Transport properties of iron-doped $\text{BaZr}_{0.9}\text{Yb}_{0.1}\text{O}_{3-\delta}$

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**Table S1** Comparison of the nominal and real compositions of materials  $\text{BaZr}_{0.9-x}\text{Yb}_{0.1}\text{Fe}_x\text{O}_{3-\delta}$  made on the basis of chemical analysis. All compositions were normalized according to zirconium, which has a stable oxidation state (compared to Fe), is present in large quantities (compared to Yb) and is tolerant to evaporation at high temperatures (compared to Ba).

x	composition	Ba	Zr	Yb	Fe
0	nominal	1.00	0.90	0.10	0.00
	experimental	1.01	0.90	0.11	0.00
0.2	nominal	1.00	0.70	0.10	0.20
	experimental	1.01	0.70	0.12	0.19
0.4	nominal	1.00	0.50	0.10	0.40
	experimental	1.02	0.50	0.12	0.39



**Figure S1** TG results of weight (a) and oxygen content (b) for the  $\text{BaZr}_{0.5}\text{Yb}_{0.1}\text{Fe}_{0.4}\text{O}_{3-\delta}$  powder material. The oxygen content is calculated on the base of the proposal that the  $p\text{O}_2 = -6.2$  [atm] corresponds to the predominant concentration of  $\text{Fe}^{3+}$ -cations (the ionic conductivity region, Fig. 3).