Electronic Supplementary Information

Investigation of In-doped BaFeO$_{3-\delta}$ perovskite-type oxygen permeable membranes

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**Figure S1.** Thermal expansion curves of selected BaFe$_{1-x}$In$_x$O$_{3-\delta}$ materials recorded in dilatometry experiment.

**Figure S2.** O$_2$-TPD profiles of BaFe$_{0.9}$In$_{0.1}$O$_{3-\delta}$ and BaFe$_{0.8}$In$_{0.2}$O$_{3-\delta}$ oxides.
Figure S3. (a) Weight loss, and (b) calculated oxygen nonstoichiometry as a function of temperature for BaFe$_{1-x}$In$_x$O$_{3-\delta}$ ($x = 0.1, 0.15$ and $0.2$) oxides in air. Please notice that in Fig. S3(a) final weight is taken as 100%. 

\[ \delta_i = \delta_i^0 + \frac{(m_i - m_0) \times (M-15.9994\delta_i^0)}{15.9994m_i} \]