The WH plot of the CFO reflection profiles investigated at 2 \( q \) angles from 10 to 70º. The integral breadth \( b_{(obs)} \) was estimated by Le Bail analysis of the observed SXRPD pattern in Fig. 2. Influence of diffractometer on \( b_{(instr)} \) was removed by using the approximation formula:
\[
b_{(sample)}^n = b_{(obs)}^n - b_{(instr)}^n.
\]
Therein \( n \) is assumed as 1.5 in this case, because the Le Bail analysis was made by using the pseudo-Voigt function.

The SXRPD pattern of the La\(_{0.9}\)Ca\(_{0.1}\)FeO\(_3\) with high crystallinity investigated at the same diffractometer installed on the BL-4B2 was used for the estimation of the \( b_{(instr)} \) and its error. From the error of \( b_{(instr)} \) as well as the slope of Fig. S1, the value of \( \varepsilon_{C} \) was evaluated at 2.60(12) \( \times \) 10\(^{-2} \).

References

Fig. S2. Magnetic field dependence of the magnetization of the Sm$_{0.5}$Ca$_{0.5}$FeO$_3$. (b) is a magnification of the (a).