

## Electronic Supplementary Information

### **NaBa<sub>12</sub>(BO<sub>3</sub>)<sub>7</sub>F<sub>4</sub> (NBBF) dichroic crystals: optical properties and dielectric permittivity**

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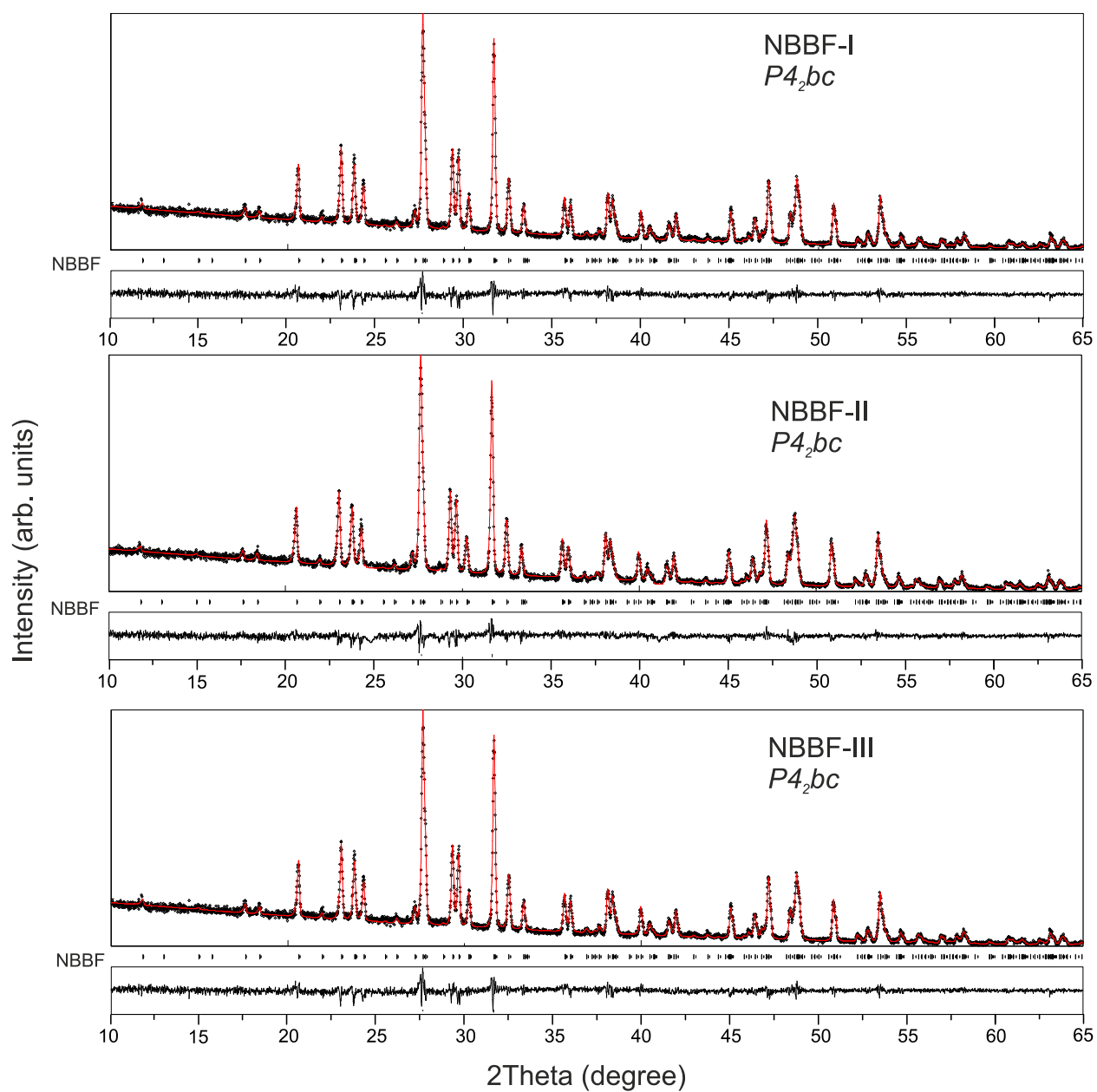
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**Fig. S1** The LeBail full-profile fitting of X-ray diffraction patterns of NaBa<sub>12</sub>(BO<sub>3</sub>)<sub>7</sub>F<sub>4</sub> (NBBF) crystals.

**Table S1** The results LeBail full-profile fitting of X-ray diffraction patterns of  $\text{NaBa}_{12}(\text{BO}_3)_7\text{F}_4$  (NBBF) crystals

| Crystal  | Space group<br>used for<br>refinement | Unit cell parameters, Å |            | V, Å <sup>3</sup> | $R_b^*$ , % |
|----------|---------------------------------------|-------------------------|------------|-------------------|-------------|
|          |                                       | <i>a</i>                | <i>c</i>   |                   |             |
| NBBF-I   | $P4_2bc$                              | 13.6020(5)              | 14.9670(6) | 2769.1(1)         | 6.148       |
| NBBF-II  | $P4_2bc$                              | 13.6064(5)              | 14.9562(7) | 2768.9(2)         | 6.360       |
| NBBF-III | $P4_2bc$                              | 13.6065(5)              | 14.9563(7) | 2768.9(2)         | 6.612       |

$R_b^*$  – R-Bragg value for the fitting

**Table S2** Measured refractive indices for the NBBF-II crystal and corresponding fitted values

| $\lambda$ , $\mu\text{m}$ | <i>n</i>          |            |               | $\lambda$ , $\mu\text{m}$ | <i>n</i>          |            |               |
|---------------------------|-------------------|------------|---------------|---------------------------|-------------------|------------|---------------|
|                           | Incandescent lamp | Globar SiC | Fitted values |                           | Incandescent lamp | Globar SiC | Fitted values |
| 0.44                      | 1.75138           | –          | 1.75364       | 1                         | 1.71912           | –          | 1.71957       |
| 0.48                      | 1.74509           | –          | 1.74480       | 1.2                       | 1.71381           | 1.71708    | 1.71680       |
| 0.5                       | 1.74174           | –          | 1.74162       | 1.5                       | 1.71158           | 1.71171    | 1.71325       |
| 0.52                      | 1.73890           | –          | 1.73898       | 2                         | 1.70557           | 1.70367    | 1.70719       |
| 0.55                      | 1.73597           | –          | 1.73577       | 2.5                       | –                 | 1.69842    | 1.70009       |
| 0.6                       | 1.73208           | –          | 1.73179       | 3                         | 1.69380           | 1.69265    | 1.69164       |
| 0.65                      | 1.72817           | –          | 1.72891       | 4                         | –                 | 1.68129    | 1.67028       |
| 0.7                       | 1.72676           | –          | 1.72672       | 5                         | –                 | 1.64634    | 1.64259       |
| 0.8                       | 1.72372           | –          | 1.72355       | 5.5                       | –                 | 1.63328    | 1.62625       |
| 0.9                       | 1.72070           | –          | 1.72132       | 6                         | –                 | 1.59541    | 1.60817       |