

# Crystal Growth and Crystal Structure of the Metastable Bismuth Orthoborate $\text{BiBO}_3$

Petra Becker<sup>a</sup> and Roland Fröhlich<sup>b</sup>

<sup>a</sup> Institut für Kristallographie der Universität zu Köln, Zùlpicher Str. 49 b, D-50674 Köln, Germany

<sup>b</sup> Organisch-Chemisches Institut, Universität Münster, Corrensstr. 40, D-48149 Münster, Germany

Reprint requests to PD Dr. P. Becker. Fax: +49 221 470 4963. E-mail: [petra.becker@uni-koeln.de](mailto:petra.becker@uni-koeln.de)

Z. Naturforsch. **59b**, 256 – 258 (2004); received January 12, 2004

Single crystals of bismuth orthoborate,  $\text{BiBO}_3$ , were grown from the melt in the system  $\text{Li}_2\text{O}-\text{Bi}_2\text{O}_3-\text{B}_2\text{O}_3 \cdot \text{BiBO}_3$  is confirmed to adopt at least two different structural modifications. The modification  $\text{BiBO}_3(\text{I})$  (corresponding to PDF Nr. 28-0169) crystallizes with space group  $P2_1/c$ . The structure consists of  $[\text{Bi}_2\text{O}_{10}]$  groups that are formed by two edge-sharing distorted  $[\text{BiO}_6]$  octahedra and that are interconnected by sharing common corners (oxygen). The  $[\text{Bi}_2\text{O}_{10}]$  groups are further sharing corners with planar  $[\text{BO}_3]$  groups giving a three-dimensional framework.

*Key words:* Bismuth Borate, Crystal Structure, Polymorphism