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The Electronic Structure and Properties of Different Surface Terminations of Li2B4O6 Single Crystal IHOR KETSMAN, University of Nebraska -Lincoln, YAROSLAV LOSOVYJ, Louisiana State University, VOLODYMYR ADAMIV, YAROSLAV BURAK, Institute of Physical Optics, Lviv, Ukraine, DAVID WOOTEN, JAMES PETROSKY, JOHN MCCLORY, Air Force Institute of Technology, Wright Patterson Air Force Base, OH, USA, PETER DOWBEN, University of Nebraska -Lincoln — The electronic structure of the(100) and (110) surfaces of Li2B4O6 single crystal was investigated by combined angle- resolved photoemission and inverse photoemission spectroscopies. The obtained results are in a qualitative agreement with the available model bulk band structure calculations.Together with some common features, they reveal clear differences between the two surfaces. For both of them the observed dispersion of the conduction band is much greater than that of valence band and both surfaces are of n-type, though the feature is more pronounced for (100) surface, which, on the whole, is more polar. However, the (110) surface demonstrates much more sofisticated properties exhibiting, in particular, the true surface states and complicated temperature and time dependent photovoltaic charging behaviour. For this surface, in the temperature range of(80-280)K, the off-axis pyroelectric effect was observed with strongly temperature dependent currents in the <110> direction and much smaller pyroelectric coefficient than that measured in the <001> direction.

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