BaBiO$_3$: A Potential Absorber for All-Oxide Photovoltaics (PV-3)

**Scientific Achievement:**
BaBiO$_3$ has been investigated as a potential photovoltaic absorber, with devices showing photo-response at 1 sun.

**Significance and Impact:**
- Potential inorganic photovoltaic absorber.
- Band diagram for BaBiO$_3$ (BBO) has been constructed.
- The BaBiO$_3$ device with an $J_{\text{light}}/J_{\text{dark}}$ ratio of 1.75, where $J$ is current density, exhibited excellent photo-electrical response behavior.

**Research Details:**
- Thin-films of BBO have been deposited using pulsed laser deposition.
- X-ray diffraction confirms the polycrystalline nature of thin films.
- Complete band-diagram were constructed using X-ray photoelectron spectroscopy, ultraviolet photoelectron spectroscopy, and ultraviolet-visible spectrophotometry.
- Heterojunction of BBO/TiO$_2$ shows photoresponse, which confirms photon absorption in BBO.

**Publication(s):**

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