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**Bcc-fcc structure transition of Te** TOSHIYUKI SUGIMOTO, YUICHI AKAHAMA, TOMOHIRO ICHIKAWA, Graduate School of Material Science, University of Hyogo, HIROSHI FUJIHISA, National Institute of Advanced Industrial Science and Technology, NAOHISA HIRAO, YASUO OHISHI, Japan Synchrotron Radiation Research Institute — A group 16 element, tellurium (Te) undergoes numerous structural phase transitions under high pressure. Up to now, five different crystalline modifications have been identified at pressure up to 36 GPa: trigonal (Te-I at ambient pressure), monoclinic (Te-II at 4 GPa), incommensurate monoclinic (Te-III at 4.5 GPa), beta-Po type (Te-IV at 23 GPa and 473 K) and bcc (Te-V at 29 GPa). The pressure-induced successive structural phase transitions are accompanied by an increase in the coordination number of Te atoms: 2-4-6-8. Therefore, a transition to the structure with larger coordination number such as fcc or hcp is expected with further compression. In this paper, in order to explore the post-bcc phase, the synchrotron radiation x-ray powder diffraction experiments of Te at pressure up to 255 GPa and at room temperature have been carried out and the bcc-fcc structure transition is reported.

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