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Pressure-induced transformations of bis(tetrazolyl)amine and cyanuric triazide probed by vibrational spectroscopy and X-ray diffraction YANG SONG, LIANG ZHOU, ERICA TILL, University of Western Ontario, ANGUANG HU, Defense Research and Development Canada — As promising high energetic materials, bis(tetrazolyl)amine (BTA) and cyanuric triazide (CTA) have been studied extensively due to their high nitrogen content. Here we report the first in situ high-pressure study of BTA and CTA using vibrational spectroscopy and synchrotron X-ray diffraction. A reversible phase transformation of BTA was observed in the compression-decompression cycle. For CTA, we observed an interesting phase transformation as evidenced by the color change of the sample as well as the change in the Raman profile and X-Ray diffraction patterns. The transformations of BTA and CTA provide more understanding of the high-pressure behavior of nitrogen-rich materials and guidance for the further developments of energetic materials.

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