Previous studies have demonstrated that the Chinese Dabie terrain had undergone ultrahigh-pressure (UHP) metamorphism (2.8–4.0 GPa). Coesite and micro-diamond inclusions were discovered in eclogite from Dabie mountains in the late 1980s (Wang et al. 1989; Wang and Liou 1993; Okay et al. 1989; Xu et al. 1992). Among these studies, the $\alpha$-PbO$_2$-type of TiO$_2$ also was identified as an important UHP mineral. Experimental studies showed that the minimum pressure of the transition from rutile to $\alpha$-PbO$_2$-structure of TiO$_2$ is 6 GPa at 850 °C and 4–5 GPa at 900–1000 °C for nanoscale rutile, respectively (Olsen et al. 1999; Hwang et al. 2000). To date, nanometer-sized $\alpha$-PbO$_2$-structure of TiO$_2$ has been discovered in garnet of diamondiferous quartzofeldspathic rocks from the Saxonian Erzgebirge, Germany (Hwang et al. 2000). El Goresy et al. (2001a, 2001b) and Jackson et al. (2006) have found the presence of $\alpha$-PbO$_2$-type TiO$_2$ in the shocked rocks. Recently, Wu et al. (2005; American Mineralogist, vol. 90, p. 1458–1461) reported that they have found nanoscale TiO$_2$ with the $\alpha$-PbO$_2$-structure in omphacite from a coesite-bearing eclogite at Shima in the eastern part of the Dabie Mountains, China. However, we question the reliability of some methods in their paper.

First, we consider the methods used by Wu et al. (2005) for preparing HRTEM samples as inappropriate. According to Wu et al. (2005), crystal grains of omphacite (<0.2 mm in diameter) were selected under the optical microscope, and then crushed into fine fragments and suspended in alcohol. One drop of the suspension was placed on a copper grid first coated with a perforated carbon film, then with gold. This method could induce defects and mechanical twins in the crystal grains during the crushing process. To demonstrate this, we prepared two TEM samples from the same rutile crystal. One sample was prepared by the crushing method described by Wu et al. (2005). The other was ion-beam milled. As shown in Figure 1, we have found many defects and mechanical twins similar to what was reported by Wu et al. (2005, see their Fig. 1) in the crushed sample. But no such defects or mechanical twins have been found in the later

**Figure 1.** HRTEM images of crushed rutile exhibiting defects and mechanical twins.