

## Supplementary Materials

### Superconductivity above 200 K Discovered in Superhydrides of Calcium

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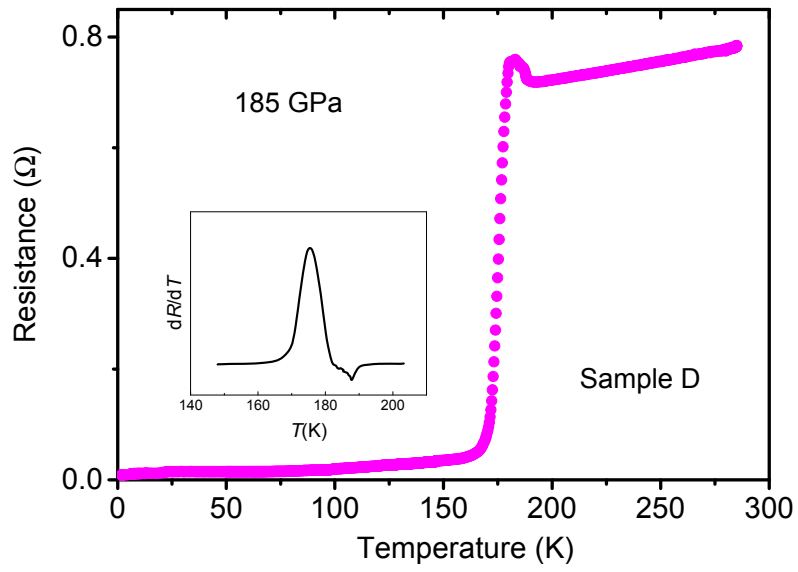
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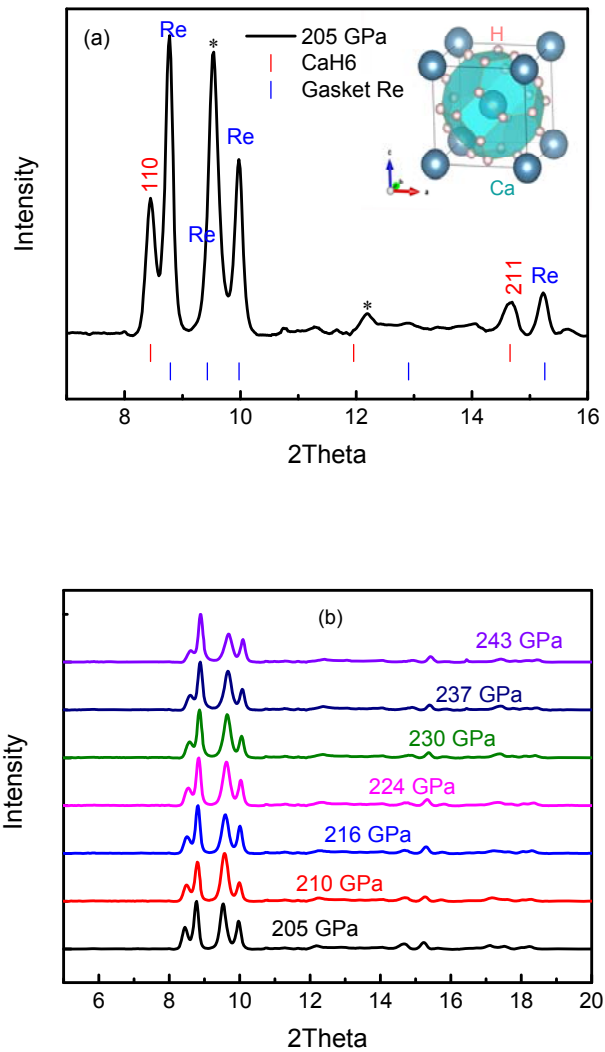
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**Supplementary Fig. 1:** The superconducting transition of a calcium superhydride. The temperature dependence of resistance measured for Sample D at 185 GPa. The inset is the enlarged view of the derivative of resistance over temperature ( $dR/dT$ ).



**Supplementary Fig. 2:** The structure characterizations. (a) The high pressure synchrotron X-ray diffraction pattern measured at room temperature of one synthesized sample, which shows the presence of  $Im\bar{3}m$  CaH<sub>6</sub> with  $a=3.21$  Å. The inset is the sketch of crystal structure of  $Im\bar{3}m$  CaH<sub>6</sub>. Re is the gasket to hold the sample in high pressure. The \* denotes the unknown peaks. (b) The X-ray diffraction patterns measured at different high pressures.