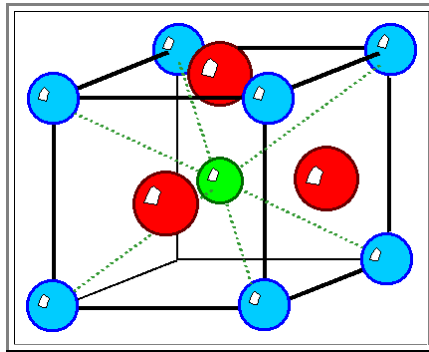


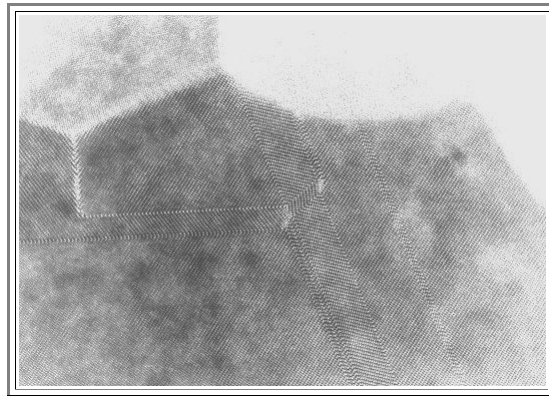
## Interpreting HRTEM Images

Advanced

Here is a **HTEM** picture of grain boundaries in **BaTiO<sub>3</sub>**, one of the most important electroceramic materials. Its lattice is of the [Perovskite type](#) and looks like this:



- The **Ti** atom is in the center and the **O** atoms on the face centers positions. The lattice is not exactly cubic but slightly elongated. A **HRTEM** image from Prof. Urbans group (Res. Center Jülich) shows many grain boundaries:



- The link provides a [large-size copy](#). Can you figure out the structure of the boundaries? Are there any dislocations present? This is not so much an exercise but a demonstration that even images with atomic resolution do not solve all problems.