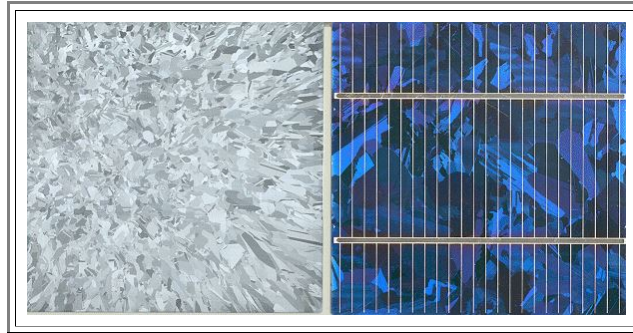


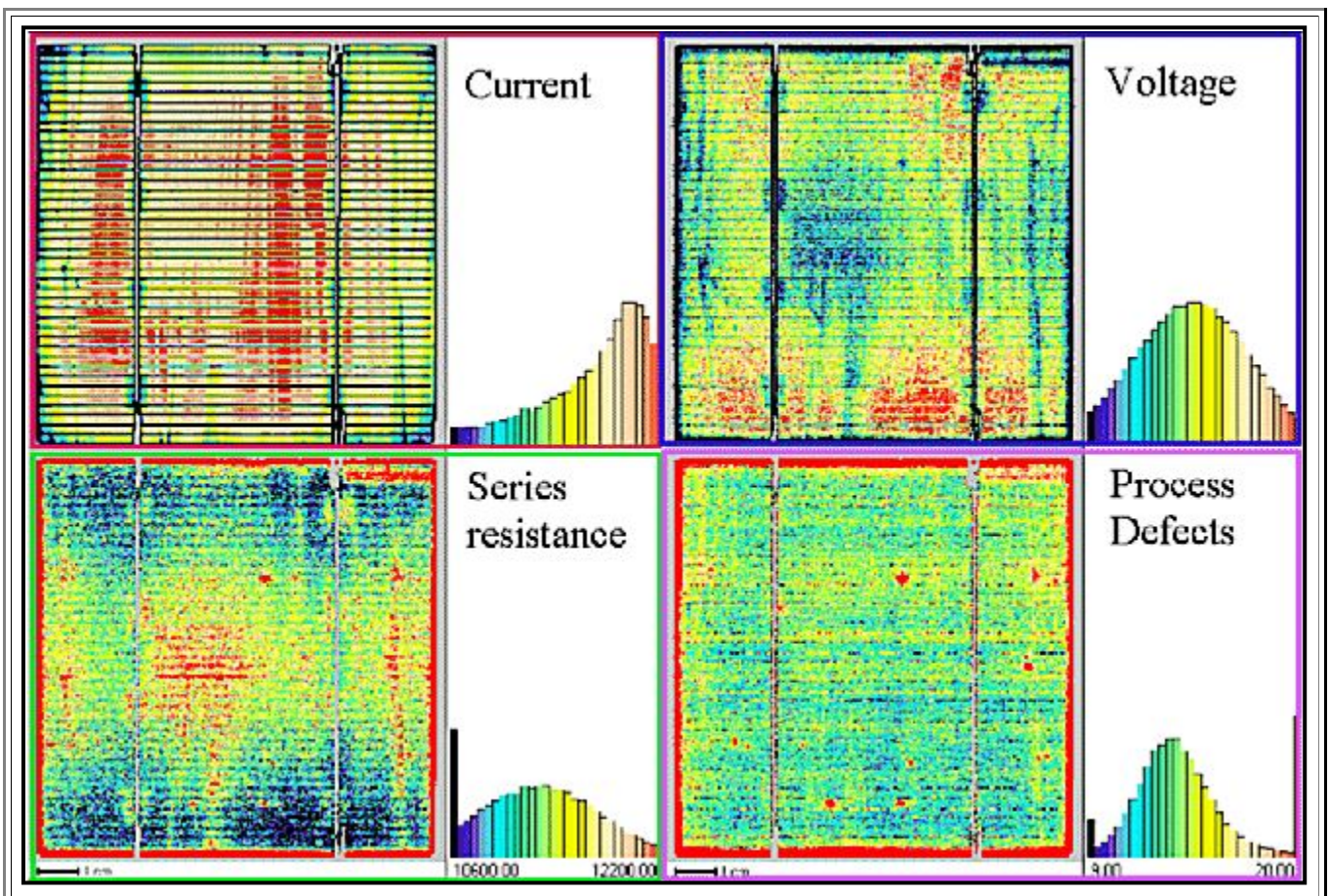
Solar Cells From Polycrystalline Cast Si

Illustration

- Here is a typical **poly-Si** slice and a solar cell made from a similar slice. The dimensions are **10 cm x 10 cm**.
- While the **poly-Si** slice is relatively fine grained (probably from about **1993**), the solar cell (from about **1998**) shows coarser grain structures - demonstrating the progress made in casting technology



- How good are polycrystalline solar cells? Not too bad, actually, but not as good as solar cells from very good single crystals.
- Below are four color coded maps showing essential parameters for solar cells *locally*. These maps are not easy to obtain; they result from a new technique, developed by a university of Kiel research group, called "**CELLO**" (short for "**Cell Local**"). [More details](#) via the link. The parameters measured are:
 - "**Current**", meaning the maximum (short-circuit current) that can be drawn from a pixel.
 - "**Voltage**", meaning the voltage a pixel would produce if it would be an isolated cell by itself.
 - "**Series resistance**", essentially meaning the ohmic resistance that would be found in an equivalent circuit for one pixel
 - "**Process defects**", a lumped parameter that displays serious local problems like, e.g., locally leaking **pn**-junctions.



The progress made with multi-crystalline **Si** solar cells in comparison to competition is shown in the picture below

