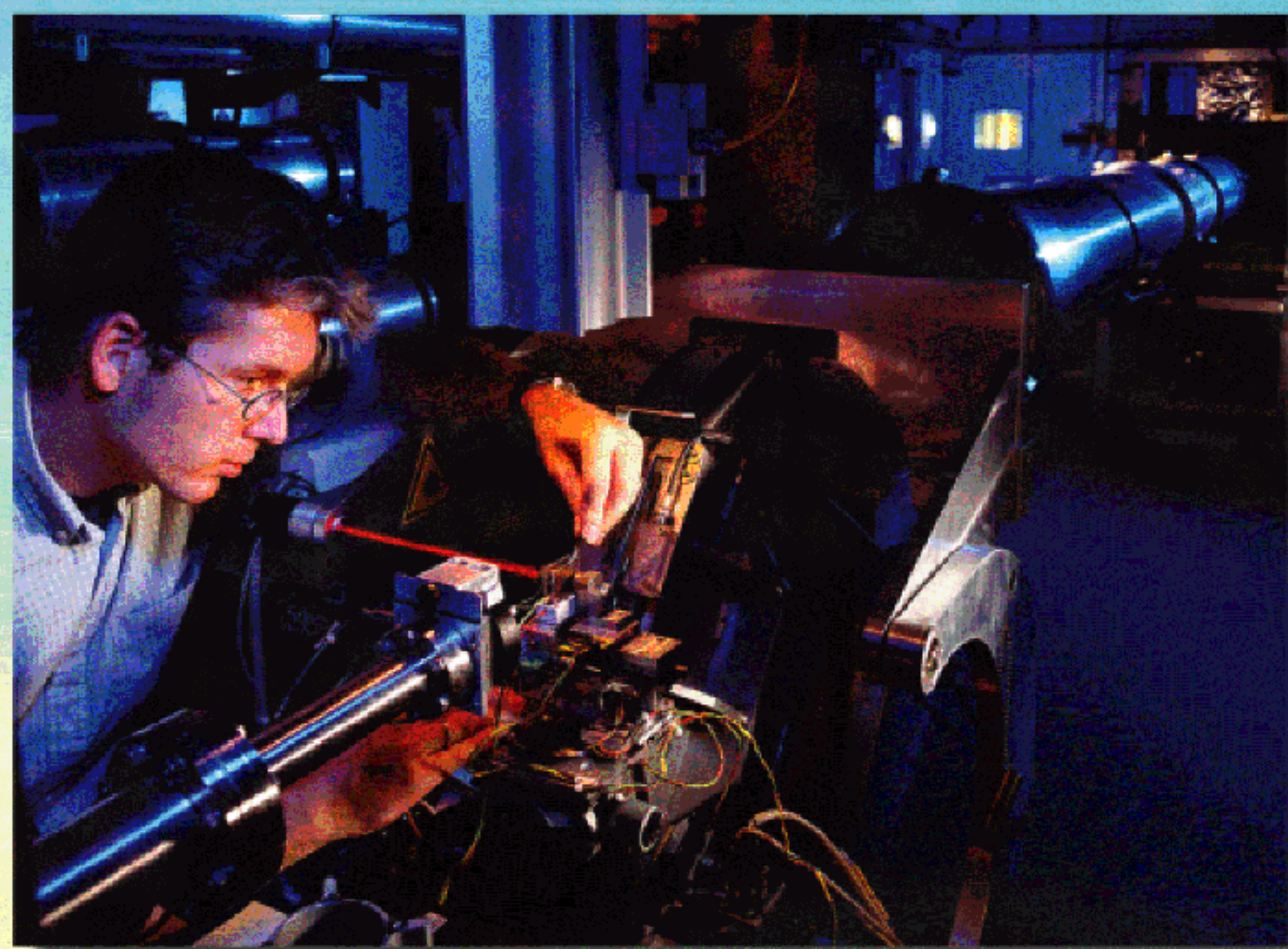


# A LIGHT FOR SCIENCE



## THE MATERIALS SCIENCE GROUP

**Materials Science research plays a major role at the ESRF and facilities for studies in this field are well represented. The major techniques are imaging and diffraction. The Materials Science group operates 7 experimental stations mainly devoted to diffraction applications. Many of the beamlines are well adapted for high spatial resolution/microfocussing studies (ID11/ID15/ID27). High-pressure research is concentrated to beamlines ID9A and ID27, using diamond anvil cells, large volume presses as well as laser heating equipment for extreme temperature studies. Beamlines ID11, ID15A, ID15B and ID31 use mainly single crystal and powder diffraction techniques.**

ID11 is devoted to diffraction studies in the energy range 6-100keV both on powders and single crystals. The speciality is time-resolved studies down to the millisecond time range, micro crystal structure determinations (micron size crystals) and 3D characterisation of grain growth, orientations and stress/strain evaluations.

ID15A and ID15B specialise in high-energy applications in the energy range 50-700keV, notably for highly penetrating diffraction, Compton scattering and imaging. Special techniques are fast *in situ* microtomography (data collection in a few seconds) and depth-resolved stress/strain mapping.

ID31 is dedicated to high-resolution powder diffraction allowing structure determinations and refinements for many powdered or polycrystalline materials in the temperature range 3K-1900K. High resolution also allows microstructural characterisation from the analysis of peak shapes.

ID9B is a dedicated time-resolved station allowing time-resolution studies down to the sub-nanosecond range using laser excitations on materials from liquids to solids.

### UPCOMING EVENTS

September/October:

- ESRF Engineering Applications of Neutrons and Synchrotron Radiation (Joint ILL / ESRF/ FAME38 Workshop)
- ESRF Surface and Interface Science Workshop

### Light up your career!

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