Observing crystals

With the birth of crystallography at the end of the 18th century new tools became available for observing and measuring crystals.

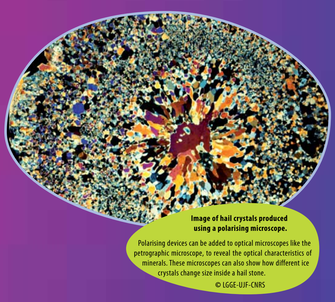

Image of hail crystals produced using a polarising microscope.

Polarising devices can be added to optical microscopes like the petrographic microscope, to reveal the optical characteristics of minerals. These microscopes can also show how different ice crystals change size inside a hail stone.

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Observing their geometry

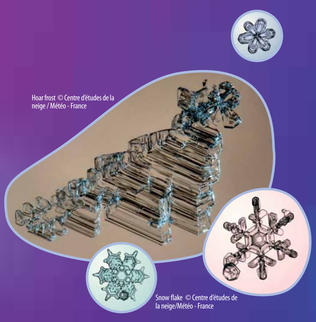
Crystalline structures could now be classified by measuring their interfacial angles, studying their symmetries and describing their geometry.

Observing them under the microscope

The world of crystals can be a hidden one, but a simple magnifying glass or optical microscope can reveal their inner forms. Happy hunting!

Observing and understanding

By observing even the commonest of the crystals, those of snow or ice for example, we can dis-cover the multiplicity of their growth forms. This is a real source of wonder for the curious of course, but it is also a source of precious information on the state of the material and its inner workings. It provides a much better understanding of natural phenomena such as avalanches.



Hoar frost © Centre d'études de la neige / Météo - France

Snow flake © Centre d'études de la neige/Météo - France

Images of an oxidising iron crystal by a scanning transmission electron microscope

More efficient modern microscopes like the electronic microscope give us more detailed high- zoom views. Here we can see the growth of iron oxide crystals.

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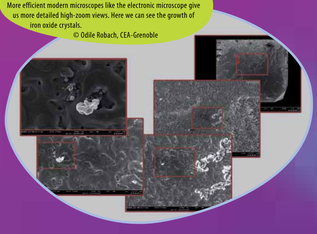

Microscope
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The view through a polarising microscope
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