

XRD-Analytics

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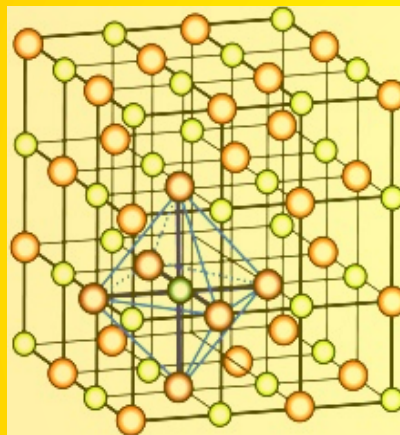
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Mineralogical and chemical studies

XRD

for building materials stones and Earth

X-rays, with a shorter wavelength than light, have the ability to penetrate matter. X-rays are diffracted as they pass through crystalline material, consisting of regular lattices. The interference patterns of the diffracted X-rays provide information about the chemical compounds present.



Crystalline substances can be identified by the nature and amount of their constituents and their structure can be determined. The method can also be applied to samples that are not completely crystalline but show some regularities in the molecular structure (amorphous materials). The chemical components (phases) can be identified (qualitative and quantitative phase analysis), their ultramicroscopic particle sizes can be measured (crystallite size analysis) and the spatial arrangement of the atoms in the crystal lattices can be determined.

Many compounds can occur in different modifications. These substances, although chemically the same, have different physical properties. For example, carbon C can occur in both the cubic form of diamond and the hexagonal form of graphite.

Application areas:

Raw material	mineralogical, chemical analysis (qualitative, quantitative), quality management.
Building industries:	Building materials analysis (eg. asbestos), structure analysis, cement and plaster inspections, analysis of efflorescence, deposits, decomposition and weathering products, appraisals.
Conservation and restoration:	Analysis of components of historical building materials, analysis of deposits and weathering products
Environmental protection:	Analysis of residues, soil investigations, analysis of building materials (e.g. asbestos), analysis of deposits and precipitation
Metal- and manufacturing:	Quality management, residual austenite determination, provisions of alloys, corrosion monitoring, residual stress investigations, texture studies, pole figures, orientation analyses.
Thermal recycling, energy production:	Monitoring of the combustion chamber lining, examination of the refractory parts, slag examinations, analysis of the solid residues.
Paper production	Analysis of the fibers (cellulose) and qualitative and quantitative phase analysis of the fillers and inorganic pigments.
Paper processing	Raw material monitoring, Quality management.
Industry	Quality management in production and procurement, process monitoring

Our modern X-ray laboratory makes the method of X-ray powder diffractometry (XRD) available to all interested parties:

Phase analytical methods:

investigation of the composition of the sample.

Structural Investigations:

investigations of the crystalline state of a sample.

Stress & Strain Textures

residual stress analysis
Studies About preferred orientations of sample material.

Are you interested?

Take the first step and write to us or simply give us a call. You will see that we are here for you:

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Analysis order:

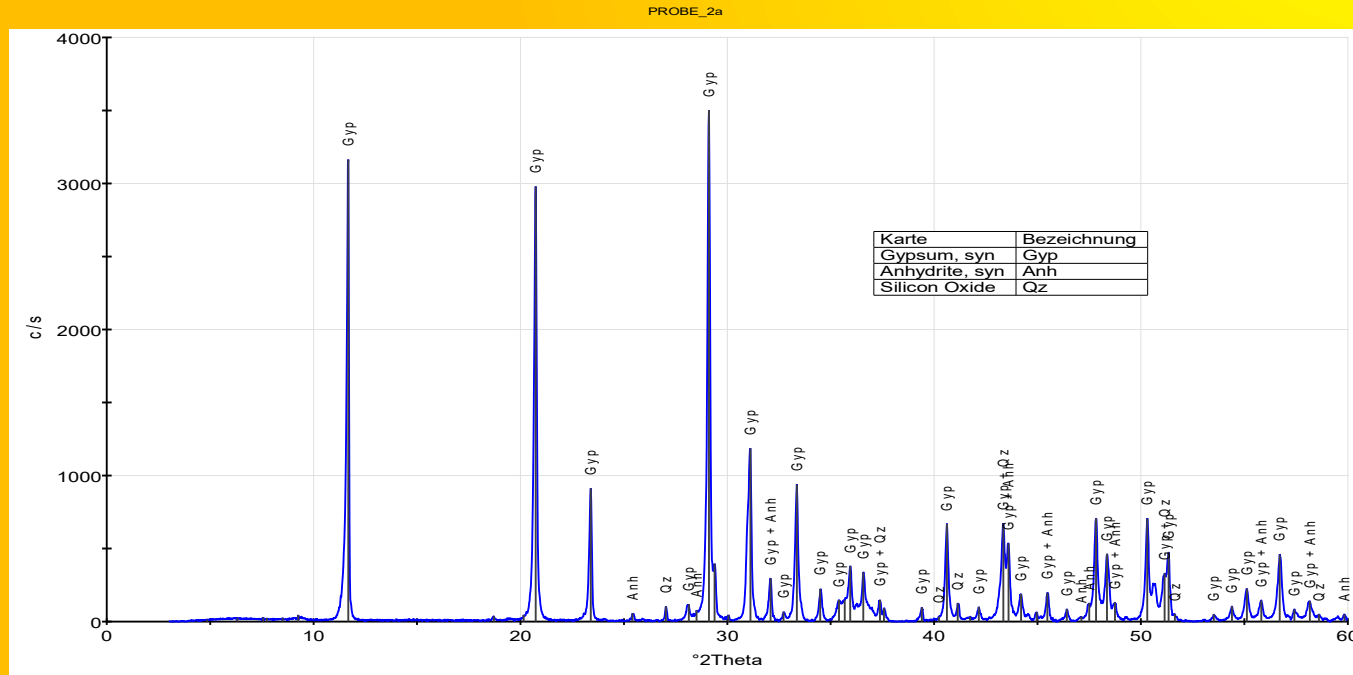
- send us an e-mail and announce the order in it.
- send us the sample (at least 5 g) in a sample bag by post
- we confirm receipt of the sample and send you a confirmation with the recording data by e-mail.
- after a short time you will receive the analysis results with a password-protected e-mail.

Please contact us :

Alfred Wassermann

Dr. rer. nat.

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ADM

XRD pattern of Gypsum ($\text{CaSO}_4 \cdot 2 \text{H}_2\text{O}$)

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