Non-ferrous and precious metal ores

- Extraction of gold from sediments and rocks by gravity separation, Flotation and hydrometallurgical methods (deposits in South Africa, Mongolia, Mozambique, Guyana and Russia)
- Test work on the processing of gold ores from small scale mining in Bolivia
- Sulphur separation during dry grinding of an gold ore at different mill temperatures
- The use of gravity separation and flotation for the beneficiation of copper ore (Mansfeld copper schist, ores from Albania)
- Test work and design of the processing of lead-zinc ores from Tunisia, Morocco, Iran and Mongolia
- Concentration of tin and tin-tungsten ores from Germany (Eastern Ore Mountains), Portugal, Bolivia, Australia, England, Russia, Kyrgyzstan, Czechia and Mongolia by means of gravity separation and flotation
- Pilot tests on the recovery of tin and cryolite from a Brazilian ore
- Expertise on the efficiency of ore haulage, beneficiation and smelting at the Almalyk Copper Concentrator (Uzbekistan)
- Evaluation of ore and spar deposits of Saxony/ Germany (ROHSA-Project/ Geokompetenzzentrum Freiberg)

Rare earth ores

- Concentration of rare earths ores from Mozambique and Vietnam

Heavy Minerals

- Processing of heavy mineral sands (Cuba, Kazakhstan)
- Comminution of zirconium Sponge

Iron, manganese, chromium and nickel ores

- Concentration of hematitic iron ores from India (Madras) and oxidic manganese ores by gravity separation
- Expertise on the modernisation of the iron ore concentrator at Kostomuksha/ Russia
- Beneficiation test work on iron ore tailings (Gol-E-Gohar/ Iran)
- Grinding and granulation of various raw materials for direct reduction (DRI); Design of a pilot plant for the grinding of DRI pellets
- Technology for the chromite recovery from Vietnamese and Albanese ores
- Economical study on the recovery of magnetite, silver, talc and magnesite from Slovakian deposits
- Susceptibility measurements magnetic separation of roasted ilmenite products
- Magnetic separation of deoxidized ilmenite ore
- Grinding-drying of ilmenite ore
- Improvement of the grinding process of zinc concentrates with dry ball mills (Ruhr-Zink GmbH/ Germany)

Fluorspar and baryte

- Concentration of fluorspar and baryte from complex rock material by gravity separation and flotation
- Reduction of the quartz content in a fluorspar concentrate (Fluß- und Schwerspatwerke Pforzheim/ Germany)
- Basic engineering for a German fluorspar and baryte plant (process design, flow sheet, laboratory and pilot scale testing, dimensioning of the main equipment)

Quartz, quartz sand, feldspar

- Recovery of high quality quartz materials from sediments and rocks by optical separation, flotation and dissolving technology (samples from Germany, Romania, Cuba, Angola and Russia)
- Wet grinding tests with feldspar containing quartz sand
- Improvement of the quartz grinding process at Saint Savin/ Xella France (lab tests)
- Grinding optimisation of raw materials for the production of foam glass (Heraklith GmbH , Poraver GmbH/ Germany)
- Technology and basic engineering for a glass sand plant in Neubrandenburg/ Germany
- Processing of glass sand from Croatia after selective comminution (Dr. Jakobs GmbH/ Germany)
- Technological assays on the processing of glass sands (Lehof pit/ Germany)
- Recovery of feldspar from various raw materials (sands/ Thuringia, granite/ Vogtland and Lusatia, pegmatite/ Romania) incl. flotation tests
- Tests on the electrical separation of feldspar sands
- Basic engineering for the modernisation of a German plant for kaolin, feldspar and quartz sand processing; subproject feldspar
- Development of a technology for the flotation of feldspar without hydrofluoric acid

Lime, chalk and gypsum

- Technological improvement of the chalk winning (Rügen/ Baltic Sea region)
- Lime processing for the use as filler (paper and plastics), for the flue gas desulphurisation and cement production
- Technology for quality improvement of limestone (GEOMIN Lengefeld/ Germany)
- Assays on the comminution and size classification for filler production
- Improving the rheology of lime flour by surface active additives
- Optimisation of limes stone grinding for the flue gas desulphurisation (FGD) in brown coal power plants (Boxberg and Schwarze Pumpe Power Plant/ Germany)
- Grinding tests with quicklime, Brockhausen & Holze GmbH
- Optimisation of FGD-hydrocyclones (Vattenfall Europe Generation AG)
- Process optimisation of a ball mill for gypsum; Babcock
- Anhydrite grinding in a vertical roller mill (ZADCON)
- Technology, dimensioning and pilot test for the production of ultra fine fillers (median 1 µm); HOSOKAWA Alpine AG

Kaolin, clay, bentonite, kieselguhr

- Processing of kieselguhr from different deposits for breweries
- Impact drying of various kieselguhr and clay samples
- Improving the technology of two German kaolin plants by high intensity magnetic separation (HIMS) an mechanical activation
- Technology for the cleaning of a spray dryer granulate (Rosenthal porcelain plant/ Germany)
- Activation of montmorillonite from deposits in the Middle East
- Developing a dry technology for the processing of clay, kaolin and bentonite
- Wet grinding tests with pre-crushed clay - SÜDCHEMIE AG
- Air and screen classification of bentonite used in pyrotechnics
- Improving the properties of kaolin by vibration grinding; Amberger Kaolinwerke Hirschau/ Germany

Potash and rock salt

- Flotation and autogenous grinding of potash (Zielitz potash plant/ Germany)
- Grindability of Iranian potash and rock salt

Rock, sand and blast furnace slag for the construction industry, cement clinker

- Grinding test (Bond test, Zeisel test, grinding kinetics)
- Separation of light contaminants from gravel and efficient dewatering of the sand fractions (Northern Germany)
- Optimisation of size distribution and grain shape of Eastern German crushing plants
- Grinding of schist from Karelia for chippings production
- Assays on the wet beneficiation of quartz for the production of gas concrete (Saxony)
- Process optimisation of the sand grinding in gas concrete plants (Germany, France)
- Modernisation and re-start of the grinding circuit in the gas concrete plant of Melnik/ Czech
- Assays on the fine grinding of sands in cement raw mills with rubber lining
- Sampling and characterisation of gravel; Gravel plant Gospiteroda
- Process analysis of a gravel screening plant; TKK Kodersdorf
- Process analysis of a wet and dry sand mills (Hebel, YTONG, Xella)
- Comparative grinding tests with balls and cylpebs as grinding media in dry and wet sand milling

- Improving the cement grinding in combined grinding circuits with high-compression roller mills and ball mills
- Developing a flotation technology to separate mica from excavated material of the St. Gotthard Tunnel (Switzerland) and cooperation during engineering, erection and start of operation
- Fine grinding of blast furnace slag and fly ashes in ball mills
- Slag grinding in a high-compression roller mill
- Process analysis of the slag grinding circuit at the Rüdersdorfer cement plant
- Abrasion of grinding media of different quality for slag grinding
- Process analysis of raw material and clinker grinding (cement plants in Germany, Austria, Polonia and France).

Brown and hard coal, coke

- Separation of mineral components and xylite from brown coal by dry methods
- Processing of xylite (Vattenfall Europe Generation AG)
- Fine grinding of brown coal in ball mills for the production of animal pharmaceuticals
- Processing of mined brown coal for use in a pressure fluidised bed furnace (Vattenfall Europe Generation AG; MIBRAG)
- Low-emission process for the production of activated carbon by mechanical activation (Deutsche Bundesstiftung Umwelt)
- Laboratory and pilot processing of various raw materials (coals and cokes) for gasification (Forschungszentrum Karlsruhe; Future Energy Freiberg
- In-the-mill drying of Chinese hard coal on a pilot scale

Phosphate and sulphur minerals

- Laboratory tests on the mechanical activation of a Mongolian apatite

Mineral pigments

- Recovery of high-quality pigments from mined material by flotation
- Flotation of lapis lazuli for the production of natural pigments
- Upgrading of pigments during the grinding in tube mills
- Assays on the rheology and grinding of pigments

Gemstones

- Flotation of emerald
- Recycling of diamond containing materials
- Grinding of kimberlitic ore

Synthetic minerals; mineral residues

- Crushing, sieving and separation of foreign particles from corundum
- Technology for the production of high-quality abrasives
- Impact apparatus to disperse agglomerated corundum (HERMES Schleifkörper GmbH, Dresden)
- Grinding and cleaning of silicon carbide and nitride
- Iron separation from synthetic minerals
- Improving the grinding of metallic silicon (Wacker Chemie AG)
- Grinding and magnetic separation of silicon
- Process analysis of the silicon grinding and sifting plant at Bayer AG, Leverkusen
- Method for the production of active silicon pigments
- Recycling of solar silicon from production residues
- Pelletisation of fine silicon residues (ELKEM)
- Analysis and optimisation of ball mill from dry grinding of alumina (ALCOA)
- Grinding of used catalysts (Metaal Magnus International Amsterdam)
- Mechanical processing of ferrite powders for compound materials
- New materials and process for high-performance soft ferrites
- Fine grinding of rock wool (REB Koops)
- Grinding of brown coal fly ash for filler materials

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