We do research for you!

All investigations are realized user-specific in close cooperation with the clients. Short realization times and confidentiality are main aspects of our work.

All investigations follow good laboratory practice guidelines and base on the state of the art.

IBZ`S RESEARCH, DEVELOPMENT, TESTING AND EVALUATION PROCESS

Define Problems and Requirements

Identify Possible Solutions

Define technology gap

Are there existing solutions?

IBZ tests and evaluates solutions

Is development successful?

Test, demonstration and evaluation in Practice

Implement into practice

Is development successful?

YES

NO

YES

NO

YES

NO

YES

NO

YES

NO

YES

NO

YES

NO

YES

NO

YES

NO
Flotation
Development of the chemical regime for flotation (frothers, collectors, modifiers) by experimental investigations in flotation cells with volumes between 500 mL and 10 Litres

Slime flotation / Slime dewatering
Column Flotation
Solution mining
Determining of dissolution kinetics
Modelling of dissolution processes
Solar evaporation
Experimental determination of crystallization paths of salt-water systems based on a comprehensive database of solubilities of organic and inorganic salts
Experimental determination of solubilities of salts in water, solutions and mixed solvents
Modelling of salt-solution equilibriums
Use of phase diagrams to develop processing strategies

Processing of natural brines / natural salts
Production of lithium, boron, strontium, bromine

We provide comprehensive consulting, engineering services and research in the areas:

- **Physico-chemical fundamentals of salts and salt solutions**
  - Determination of the saturation characteristics of all types of salt-water systems based on a comprehensive database of solubilities of organic and inorganic salts
  - Experimental determination of solubilities of salts in water, solutions and mixed solvents
  - Modelling of salt-solution equilibriums
  - Use of phase diagrams to develop processing strategies

- **Crystallization / Evaporation**
  - Development of mass and energy balances of evaporation and crystallization processes
  - Determination of crystallization paths during evaporation, heating or cooling
  - Determination of crystallization kinetics
  - Cooling crystallization
  - Evaporation crystallization
  - Reaction crystallization
  - Supplanting crystallization
  - Continuous / batch crystallization, precipitation
  - Crystallization by double conversion, e.g. K₂SO₄ production
  - Brine purification by precipitation and ion exchange

- **Flotation**
  - Development of the chemical regime for flotation (frothers, collectors, modifiers) by experimental investigations in flotation cells with volumes between 500 mL and 10 Litres
  - Slime flotation / Slime dewatering
  - Column Flotation

- **Solution mining**
  - Determining of dissolution kinetics
  - Modelling of dissolution processes

- **Solar evaporation**
  - Experimental determination of crystallization paths
  - Balancing of evaporation processes

- **Processing of natural brines / natural salts**
  - Production of lithium, boron, strontium, bromine

IBZ Salzchemie GmbH & Co. KG has a strong background in processing of salts and salt solutions, including

- Halite
- Sylvinite
- Carnallite
- Double Sulfates (Schoenite, Leonite, Langbeinite, Polyhalite)
- Natural Brines

Natural Brines
- Physico-chemical fundamentals of salts and salt solutions
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- Modelling of salt-solution equilibriums
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