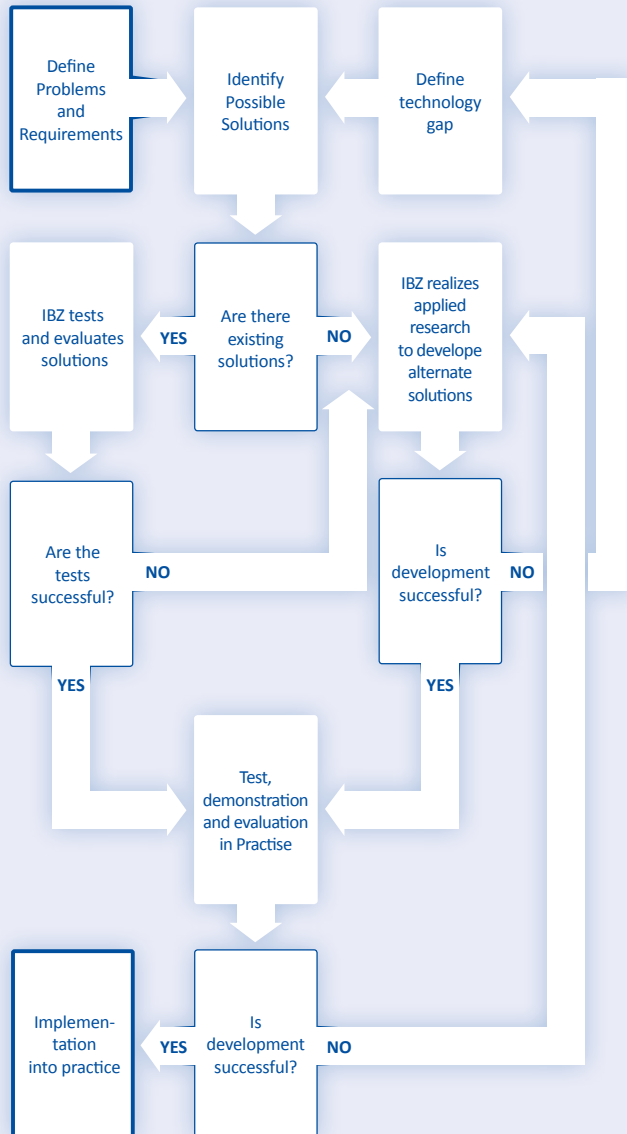


## IBZ`S RESEARCH, DEVELOPMENT, TESTING AND EVALUATION PROCESS



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.

*We do research for you!*



**IBZ - Salzchemie**  
GmbH & Co. KG

**REACH YOUR AIM TOGETHER WITH  
OUR KNOW HOW!**



**POTASH AND SALT  
PROCESSING**

**IBZ - Salzchemie GmbH & Co. KG**

Gewerbepark „Schwarze Kiefern“  
09633 Halsbruecke, Germany  
Tel.: +49 3731 200-155  
Fax: +49 3731 200-156  
Mail: [info@ibz-freiberg.de](mailto:info@ibz-freiberg.de)  
[www.ibz-freiberg.de](http://www.ibz-freiberg.de)



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

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



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.  $K_2SO_4$  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