



ACID BASED TECHNOLOGIES

Closing process loops

**Extracting valuable
resources**

Turning waste to value



KON Chemical Solutions is an innovative office for chemical process engineering and industrial management which puts the customer at the center of all its approaches.

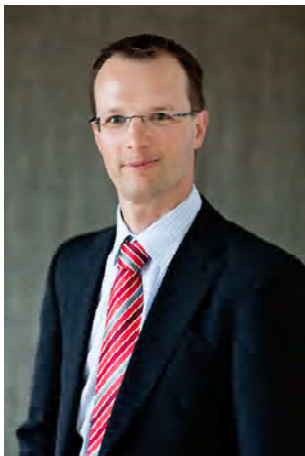
The Kon Chem service begins with

- Ideas
- Literature research
- Theoretical concept
- Organization and supervision of lab pre-tests and lab research
- Material and machinery evaluation
- Construction material evaluation
- Piloting
- Up scaling
- Industrial process design
- Tender preparation
- Negotiation with project contractor
- Attending order placements
- Control of project progress
- External supervision of erection
- Supervision at final acceptance test
- Process improvement

... and ends with a satisfied customer

**DI Dr.techn.
David Konlechner**

Funded the company after several years in acid business. He is the owner, a chemical and process engineer as well as a certified expert witness in this area.



Waste Acid Regeneration

Spray Roaster and Fluidized Bed Pyrohydrolysis

- high temperature process 450-850 °C
- absorbing regenerated acid in scrubbers (limited HCl conc. approx 18 %m/m)
- producing oxide as fine dusty powder or granulate
- proven technology
- flexibility 70 to 110% of design capacity

FeCl₃ Hydrolysis

- moderate temperature process max. 175°C
- condensating produced acid (HCl conc. up to 30 %m/m)
- producing powder oxide with high bulk density (~ 2 t/m³) and high specific surface (BET up to 25 m²/g)
- novel technology
- flexibility 20 to 100% of design capacity



Pyrohydrolysis Plants (pic. by CMI/UVK)

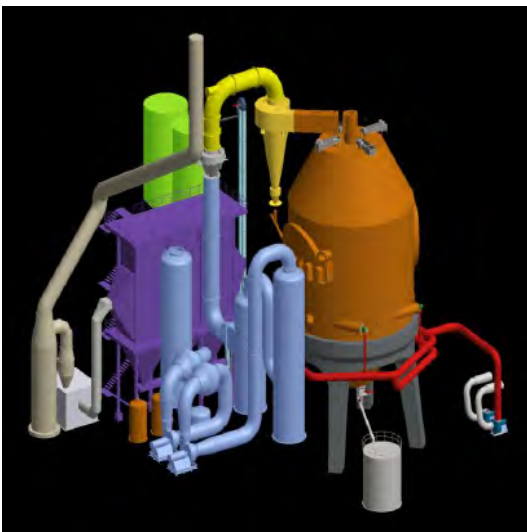
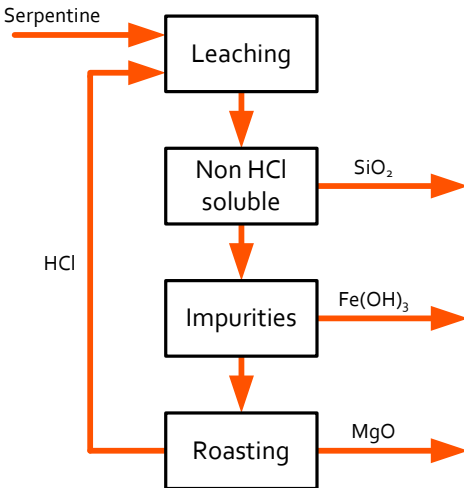
Pyrolyzeable Chlorides:

**Be, Mg, Al, Ti, V, Cr, Mn, Fe, Co, Ni, Y, Zr,
+ all Lanthanoides**

Extractive Metallurgy

Within this field a natural resource is taken and dissolved in acid. The material traditionally has two main components and just one of them is soluble in used acid. By executing a pyrohydrolytical process step, acid can be recycled und the utility loop is closed.

e.g. Serpentine based MgO process

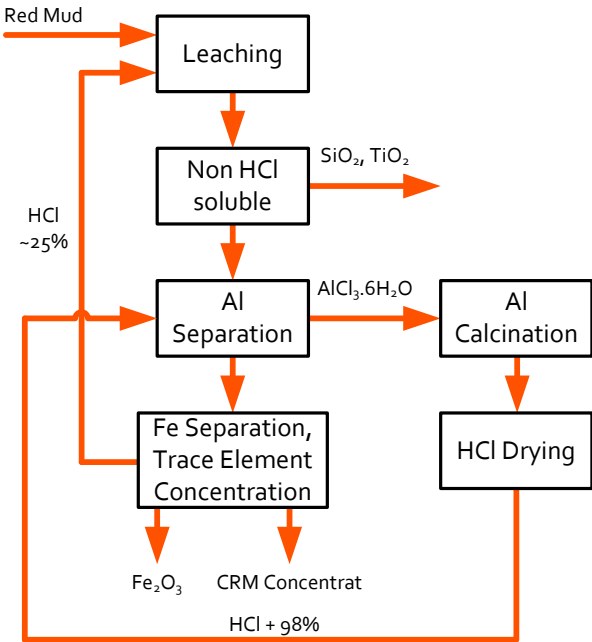


MgO Sprayroasting Plant 3t/h (pic. by CMI/UVK)

Waste Valorisation

Wastes, tailings or by-products will become the mines of the future. Acid based process routes will open the doors to new resources. Within closed process loops pure metal oxides are generated. Valuable trace elements e.g. critical raw materials become accessible.

e.g. Red Mud recycling process



Red mud lake North Germany (pic. by RaBoe / Wikipedia)



Are you interested in
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