dtd Deutscher Technologiedienst

Deutscher Technologiedienst GmbH
Niederlassung Augsburg
Frölichstrasse 14
D-86150 Augsburg

Tel.: +49-(0) 821-50861-12
Fax: +49-(0) 821-50861-10
E-Mail: strehle@dtdienst.de
Homepage: www.dtdienst.de

Technology Inquiry TN 10 016

On behalf of an industrial client, the *Deutscher Technologiedienst* is looking for chemical experts on:

"The chemical and physical mechanistics of chelants / chelating agents."

Background

(Keywords: Chemistry, Chelation, Chelants, Chelating Agents, Chemical Mechanistics)

The chelate effect describes the enhanced affinity of chelating ligands for a metal ion compared to the affinity of a collection of similar non-chelating ligands for the same metal. Usually these ligands are organic compounds, and are called chelants, chelators, chelating agents, or sequestering agents.

According to ASTM-A-380, chelants are chemicals that form soluble, complex molecules with certain metal ions, inactivating the ions so that they cannot normally react with other elements or ions to produce precipitates or scale. Due to these special chemical and physical properties, chelating agents are an essential ingredient in many commercial products. They deliver many key benefits including chemical and microbial stability as well as final product performance.

Required Experts & Specific Search Scope

On behalf of an industrial client the *Deutscher Technologiedienst* is looking for academic experts in the field of chelating agent chemistry. The main aim of the search is to provide our client with outstanding experts in the field of mechanistic understanding of chelator chemistry (targeting, bonding, removal of metal ions etc.), who are generally interested in consultancy work for different technology groups and the initial set up of targeted research programs.

<u>Specific Business Need</u>

The needed expert should be able to explore different chelant systems, the chemical / physical mechanistics and different fields of use as well as future potentials and new technology options.

<u>Specific Search Scope</u>

- Definition of chelant systems to sequester metals from a substrate.
- Understanding of mechanisms for metal removal from either substrates or other chelants.
  - Competitive reactions, Kinetics, Thermodynamics of metal removal.
  - Key factors responsible for metal removal.
- Role of formula ingredients on rate and efficiency of metal removal (ionic strength etc.).
- Specific substrates of interest are blood, grass, grease, beverage stains and clays.
- Metals of high interest are redox metals such as Fe, Cu, Mn and water hardness metals (Ca, Mg).
- Likely discipline areas are: inorganic, organic, physical and bio-inorganic chemistry.
- Experts in either US or Europe preferred

Cooperation options

- Sabbatical and/or external consultancy.
- Optional R&D co-operation in the field of high performance chelants.