

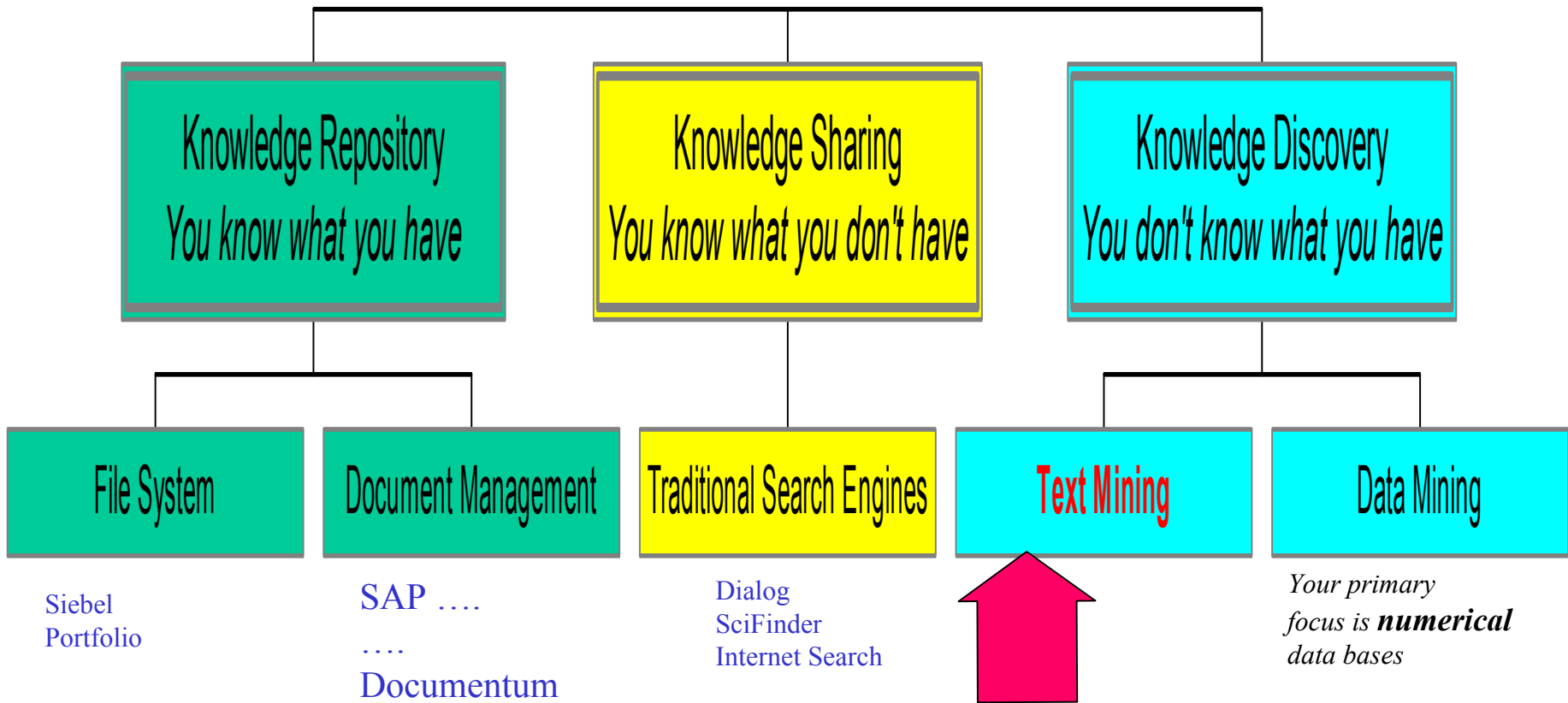
CONTENT

- What is text mining?
 - A couple of Examples
-
- Mani Shabrang, Bob Gulotty, Bryan Warner, Gary McNamee



Knowledge Acquisition

Semio™ model



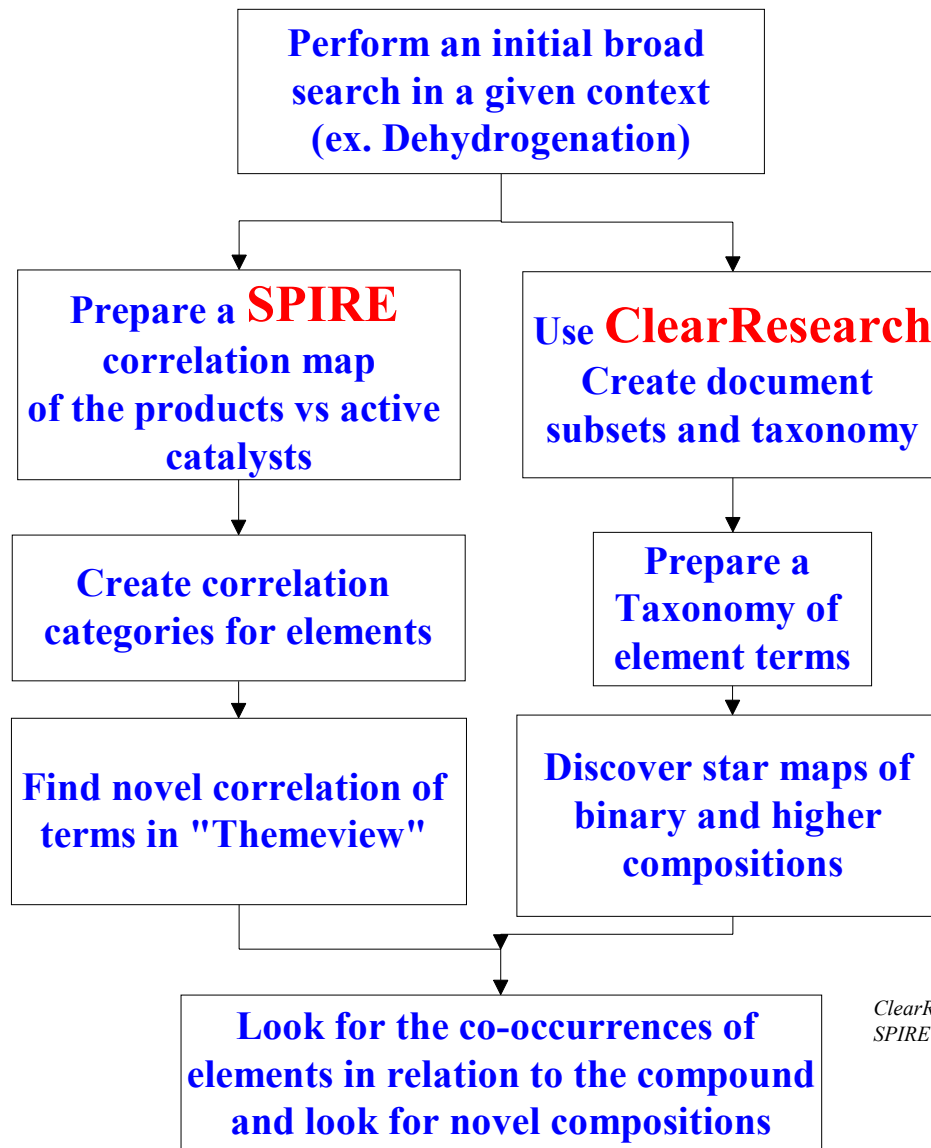
Catalyst development

- literature searches
 - dehydrogenation catalysis
 - literature 1967-2000 ~3500 hits
 - patent ~1500 hits
- Observe Copyright Laws !



Prepare a catalyst composition map

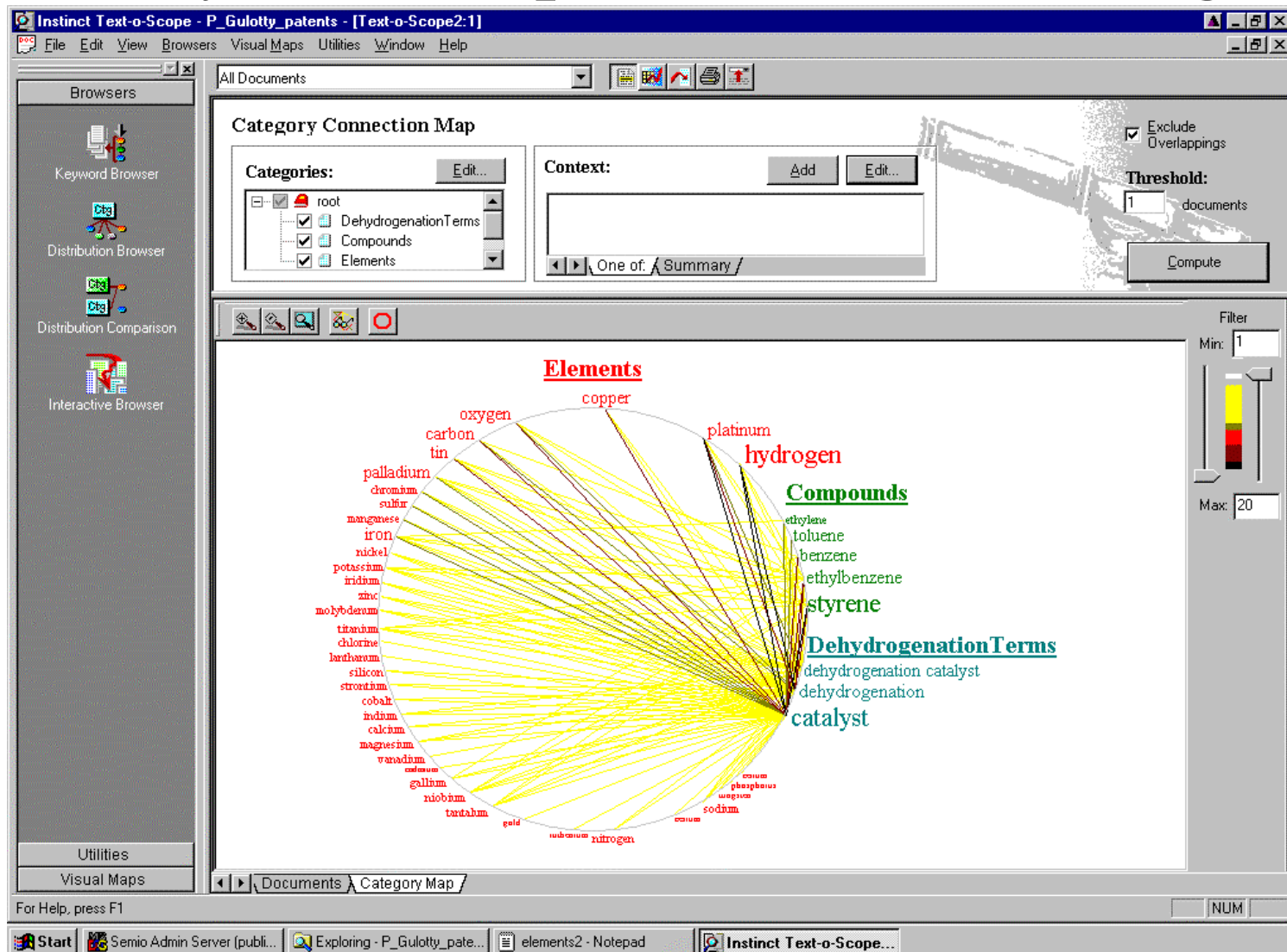
Gulotty/Chemical Sciences R&D



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Catalyst development - Text Mining

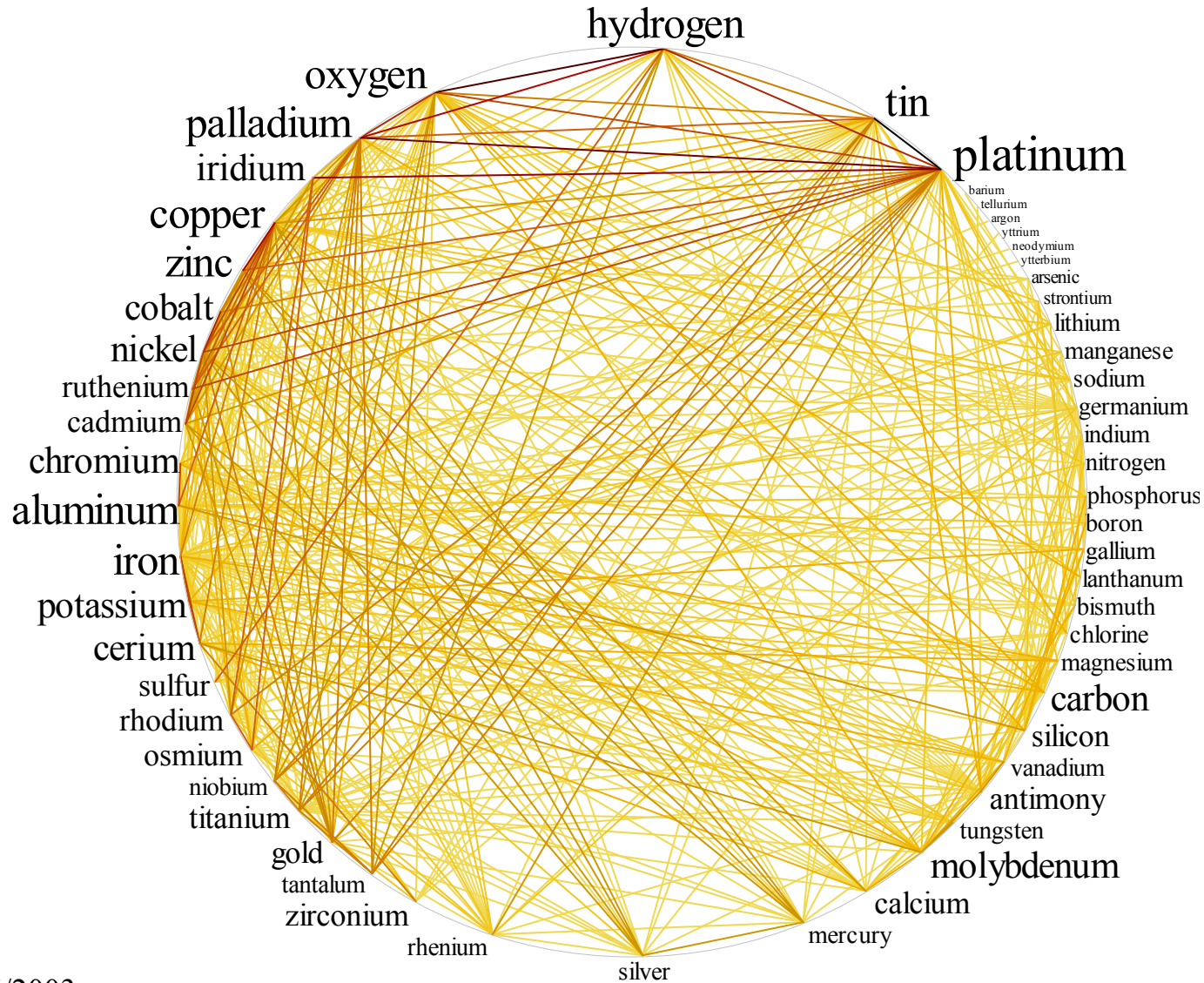


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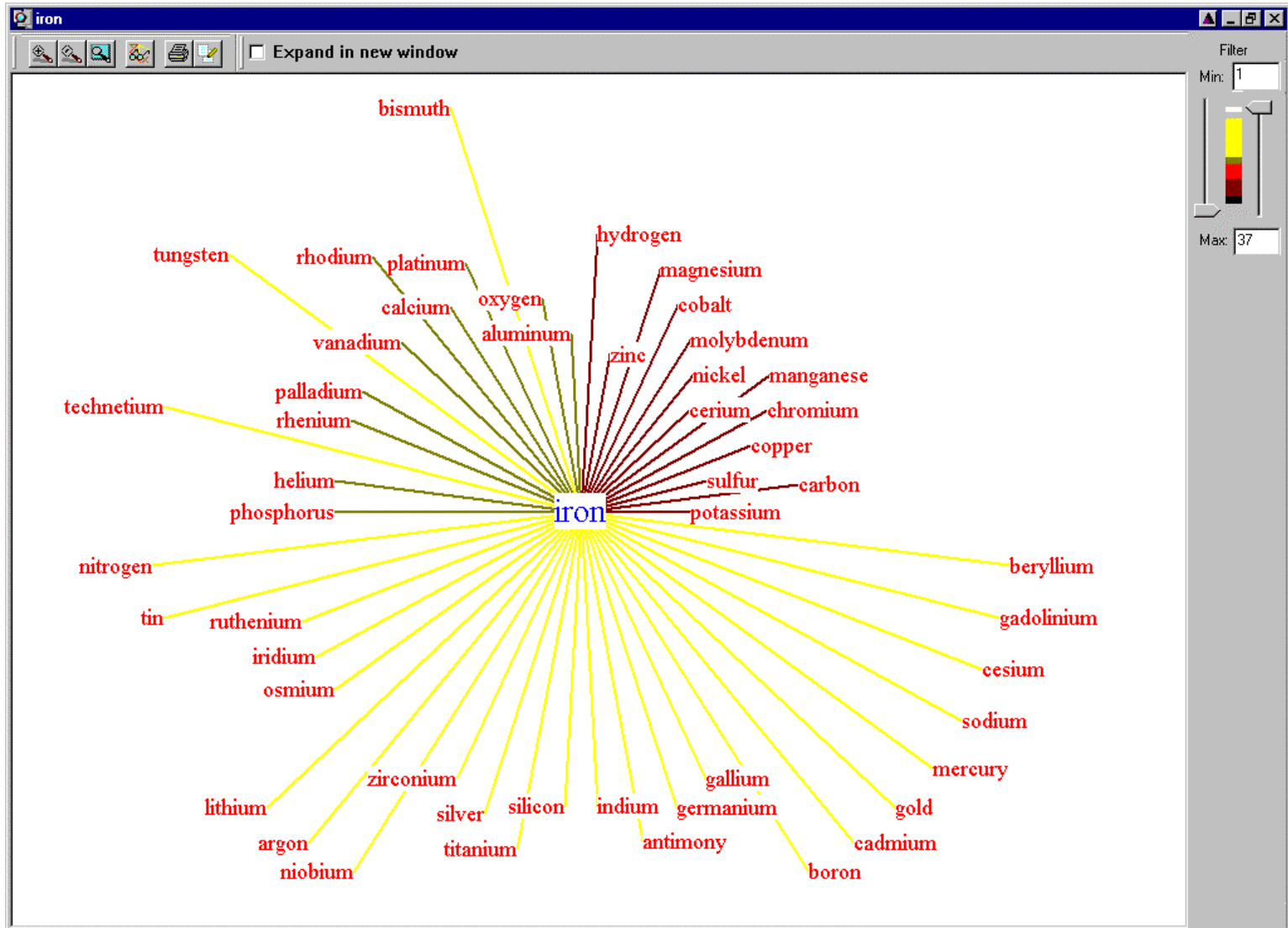
This was 1st generation CF product; we now have generation 4.



Catalyst development - Text Mining



Catalyst development - Text Mining of dehydrogenation literature



TITLE

The behavior of titania-supported iron oxide catalysts in butene dehydrogenation.

DATE

01/01/ 1994

Database

CAPLUS

Accession Number

AN 1995:672116

Abstract

Titania-supported iron oxide catalysts were prep'd. by incipient wetness impregnation of pre-shaped supports with solns. of different iron compds. Using microscopic techniques, it was found that ammonium iron citrate gave both a homogeneous distribution in the pellets and iron oxide finely divided on the support crystallites. Temp. programmed redn., x-ray photoelectron spectroscopy and Moessbauer spectroscopy confirmed these observations. However, the thus prep'd. catalysts deactivate most rapidly in butene dehydrogenation, probably due to complete incorporation of Fe(II) in the titania support, yielding FeTiO₃ after reaction. This phenomenon is assigned to be the major cause for deactivation in the present supported catalyst. Addn. of potassium did not improve the catalyst system, but enabled the iron ions to enter the support even more.

Author

Boot, L. A.; Linde, S. C. van der; Dillen, A. J. van; Geus, J. W.; Buren, F. R. van; Bongaarts, J. E.

ClassCode

(Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)

CorpSource

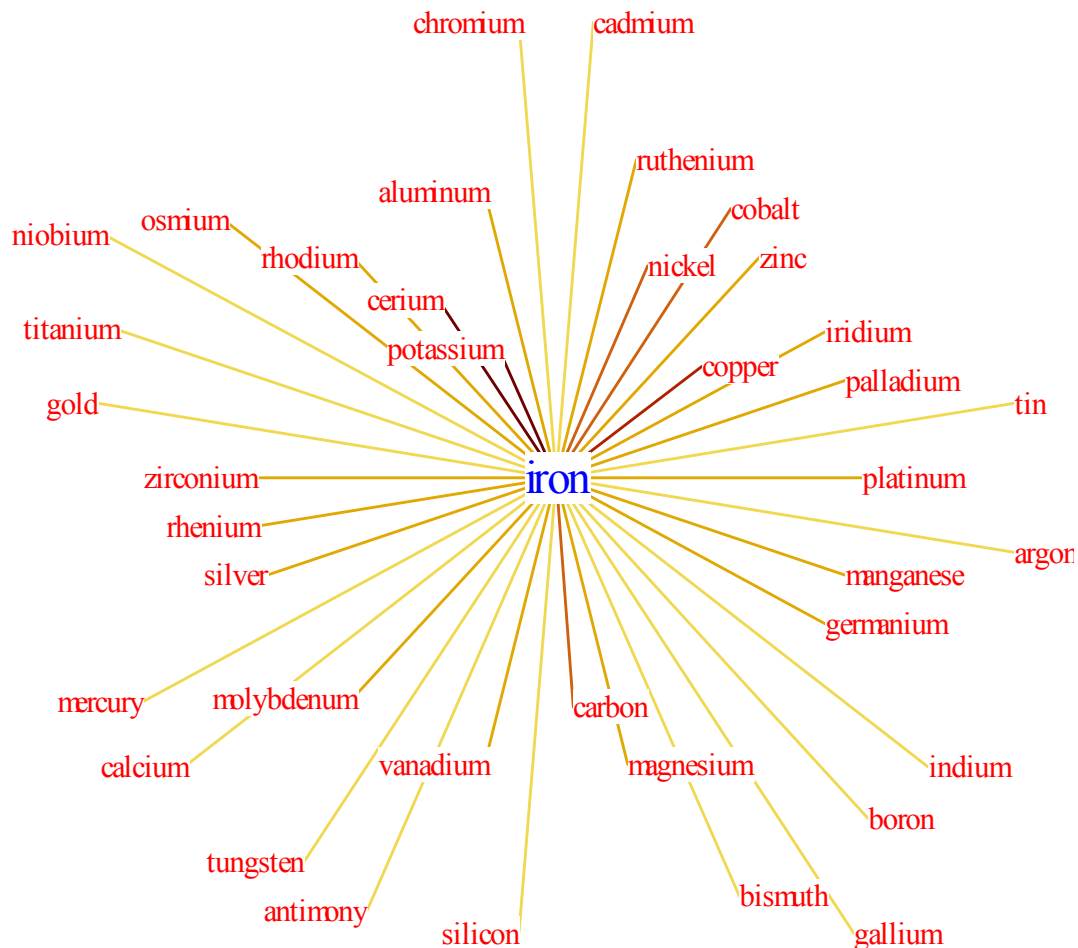
Debye Institute, Utrecht University, Utrecht, Neth.

DocType

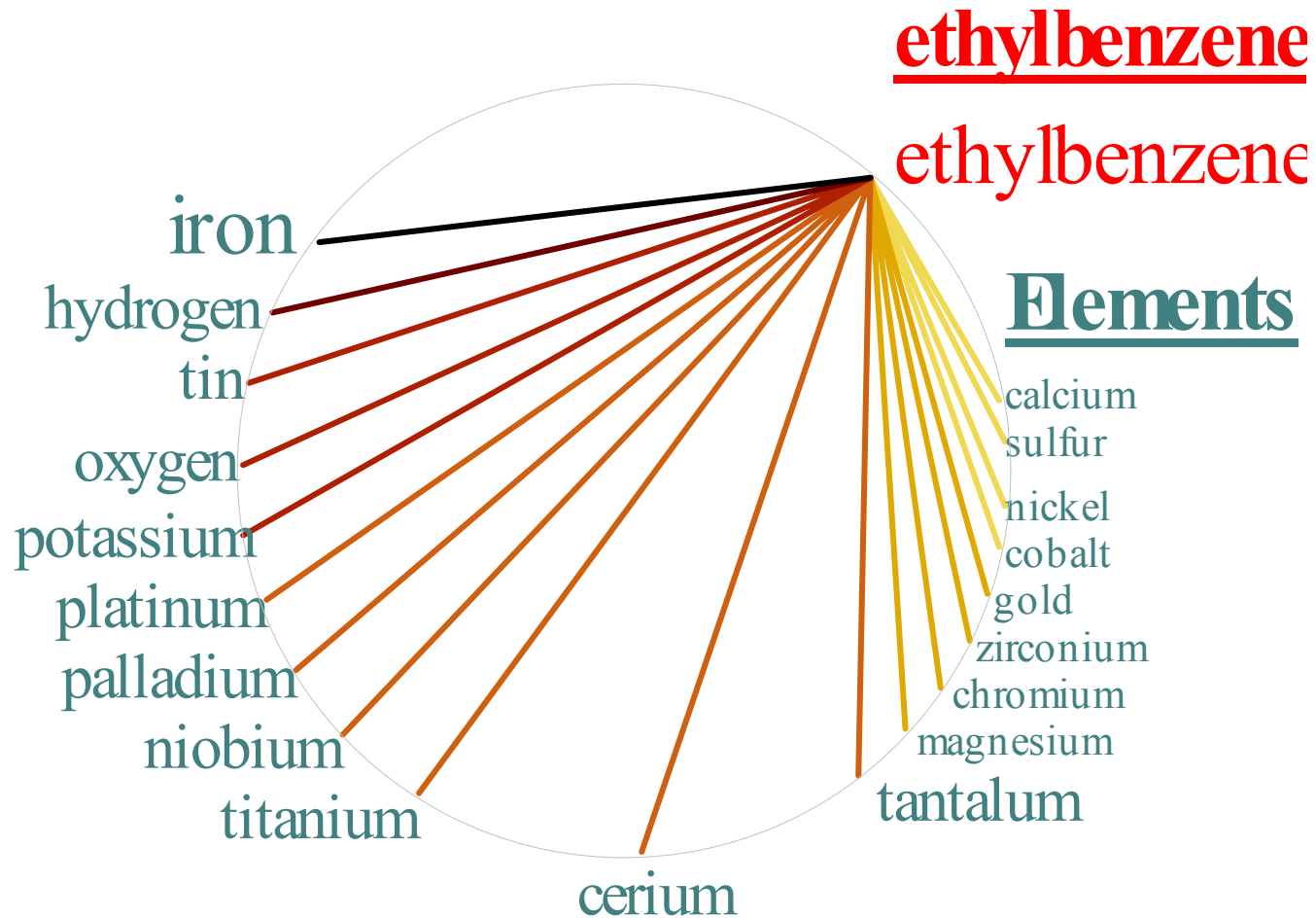
Journal

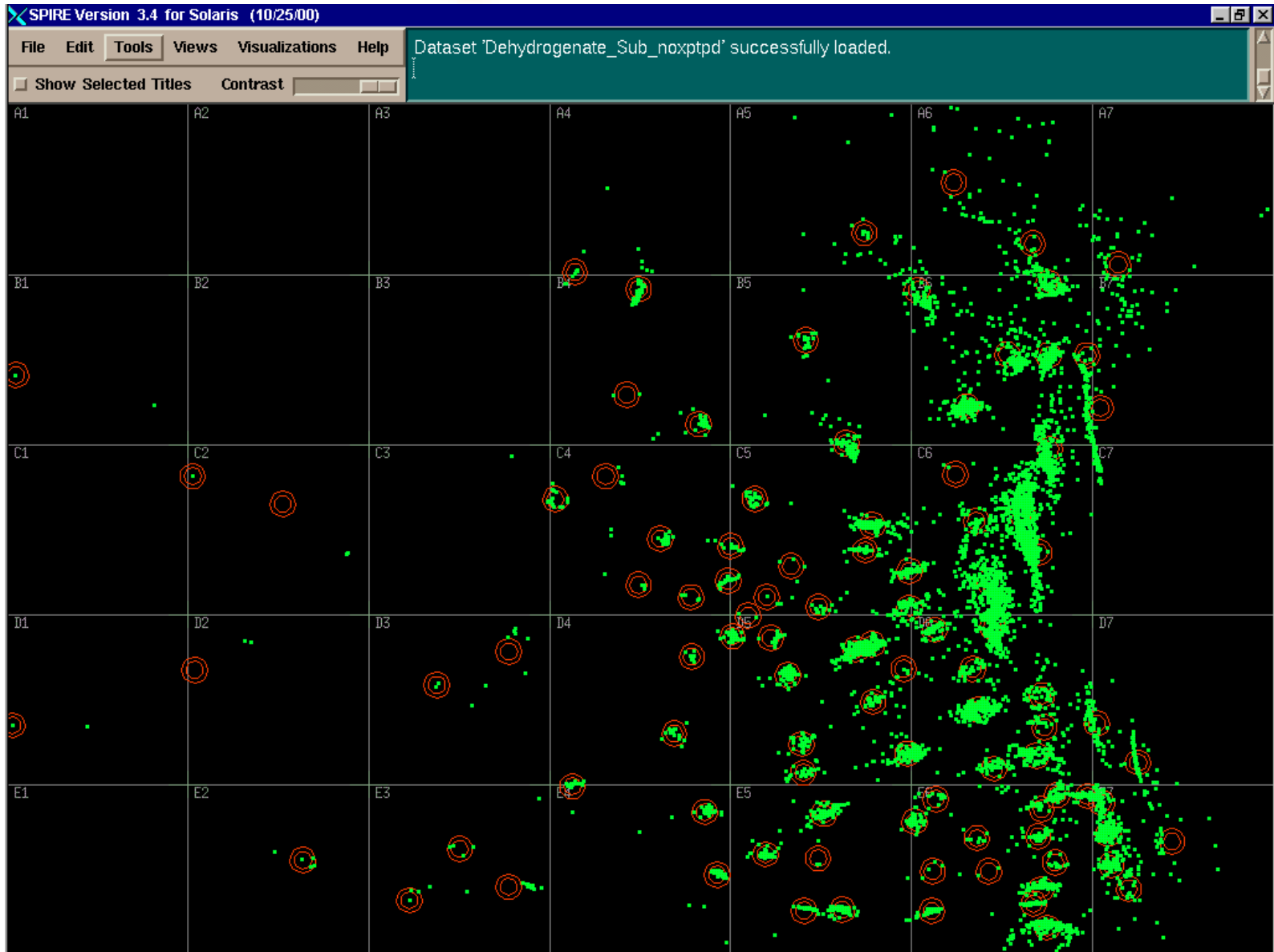


Catalyst development - Text Mining of dehydrogenation patents



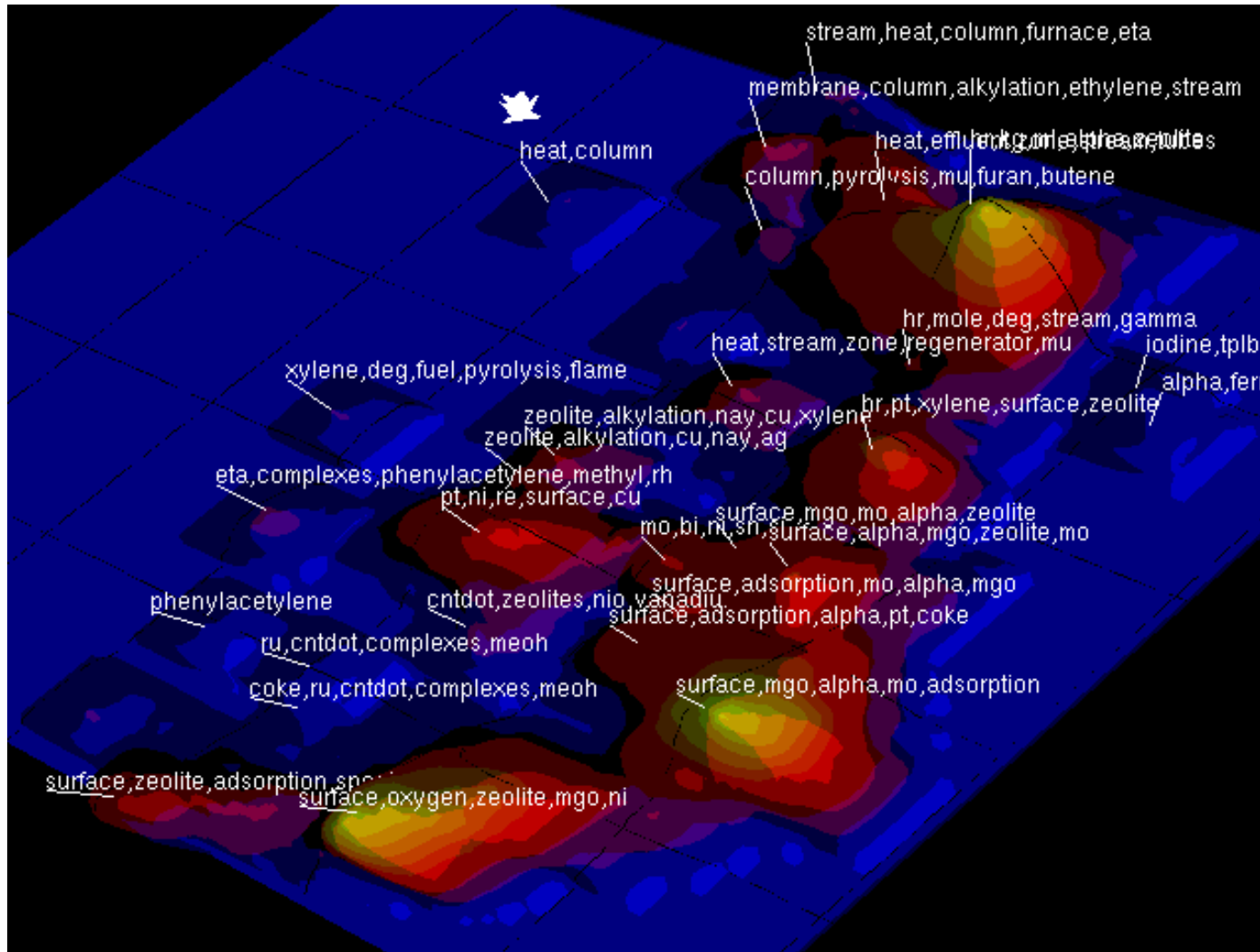
Catalyst development - Text Mining of EB patents

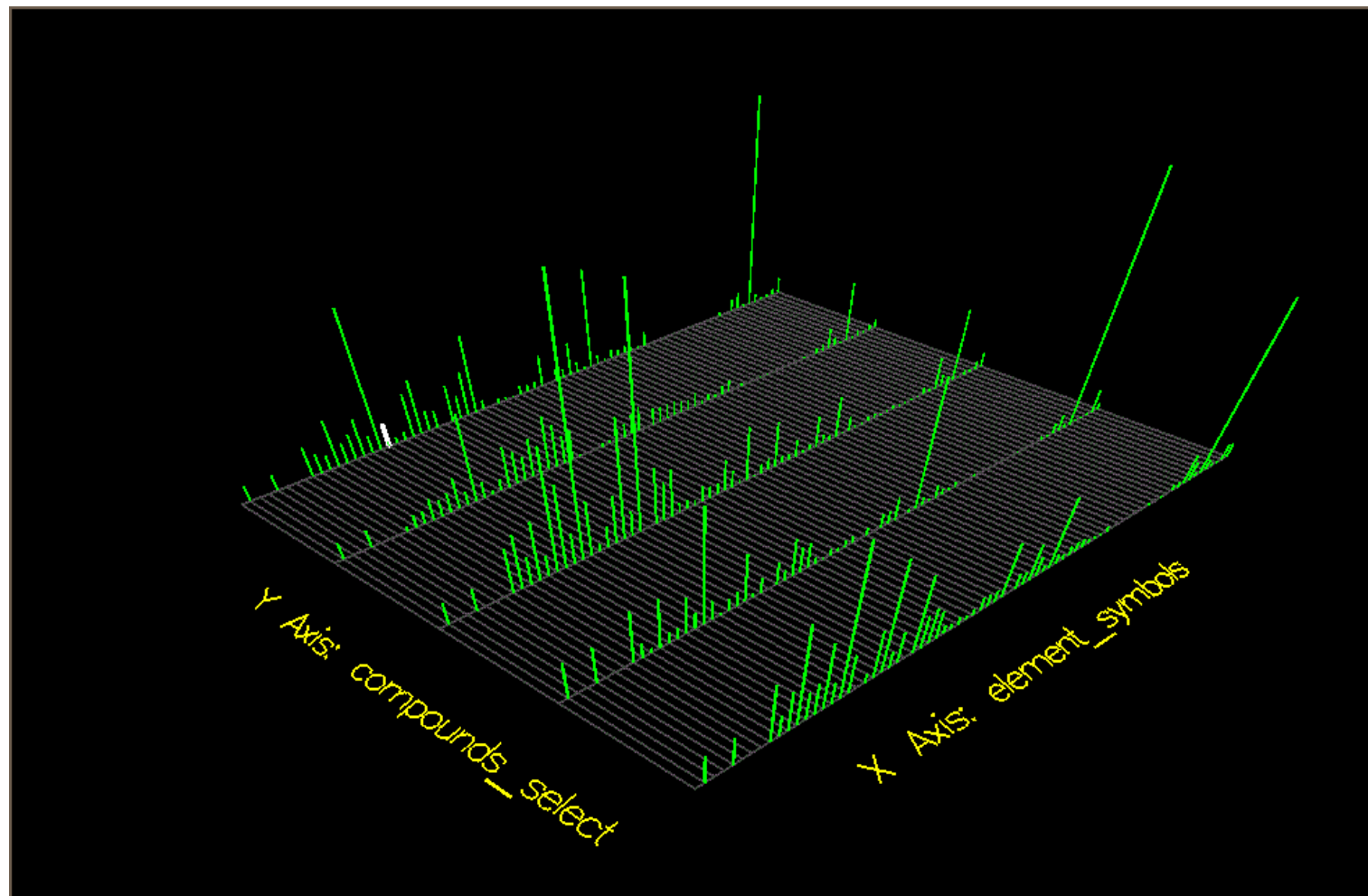




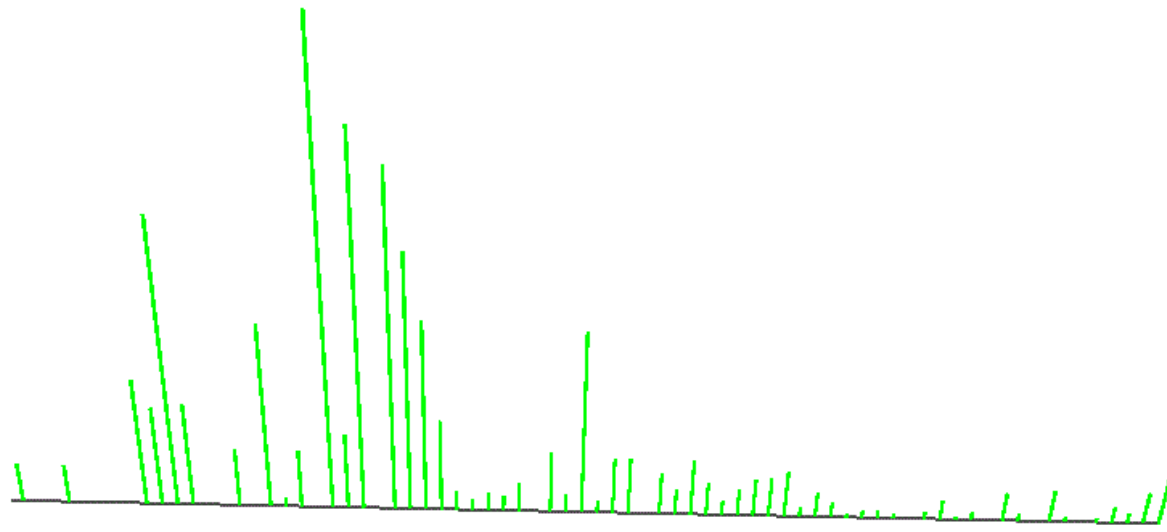
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Ethylbenzene element distribution for dehydrogenation database without oxidative, Pt or Pd (5600 hits)



X Axis: element_symbols

Summary

- These are tools only; they are not a reading substitute.
- Have a process; then iterate !
- These tools save time if you ask questions; if you don't ask they don't do much for you.