The Changing Face of Scientific Reference

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Complex Information Ecology
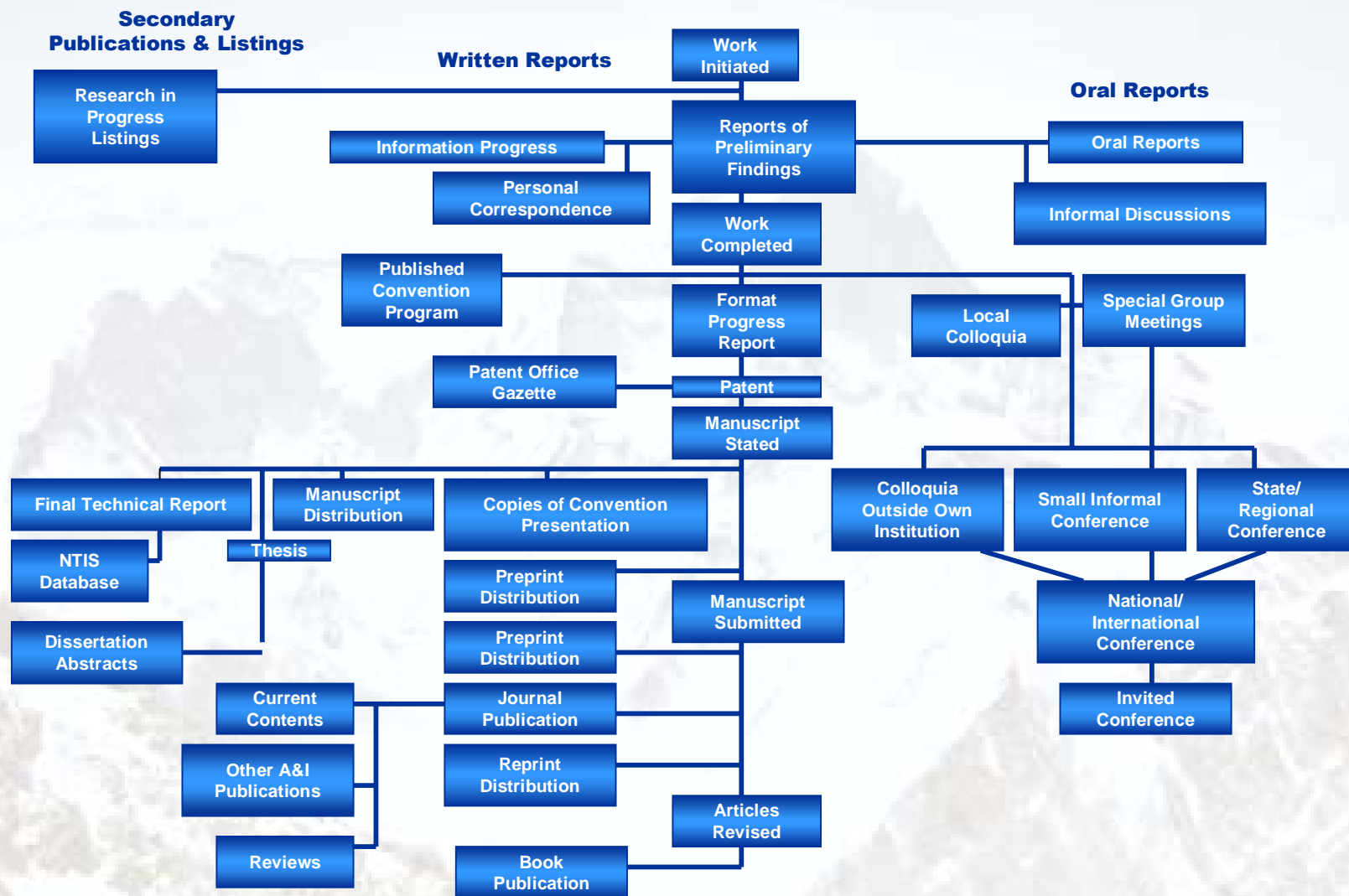
- ❖ **DISCOVERY**
- ❖ **COMMUNICATION**
- ❖ ACCESS
- ❖ PRESERVATION

Scholarly Communication

Secondary Publications & Listings

Written Reports

Oral Reports

- Work Initiated
- Research in Progress Listings
- Reports of Preliminary Findings
- Information Progress
- Personal Correspondence
- Oral Reports
- Informal Discussions
- Work Completed
- Published Convention Program
- Format Progress Report
- Local Colloquia
- Special Group Meetings
- Patent Office Gazette
- Patent
- Manuscript Stated
- Final Technical Report
- Manuscript Distribution
- Copies of Convention Presentation
- Colloquia Outside Own Institution
- Small Informal Conference
- State/ Regional Conference
- NTIS Database
- Thesis
- Preprint Distribution
- Dissertation Abstracts
- Preprint Distribution
- Manuscript Submitted
- National/ International Conference
- Current Contents
- Journal Publication
- Invited Conference
- Other A&I Publications
- Reprint Distribution
- Reviews
- Book Publication
- Articles Revised

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Reference Books:
Not Your Normal E-Book

- ❖ **Reference books are grouped together in a library. They function better when cross- referenced.**

- ❖ **They function best when they are accessible at the point of use.**

- ❖ **They cannot be borrowed. They are for lookup by multiple people.**

- ❖ **They are updated often.**

- ❖ **They are structured as databases and indexes even in book format.**

- ❖ **They are utilitarian. Focus on look-up and use.**

Knovel Service

❖ **Database Subscription Model – Aggregation and Frequent Updates**

❖ **Internal Links and Index Structure – Aggregation, Integration and Enhanced Discovery**

❖ **Data Normalization – Integration of Multiple Content Types**

❖ **TOC Structure – Browsing and Lookup Integrated with Search**

❖ **Federated Search – Multiple Points of Access and Means of Discovery**

❖ **Analytical Tools – Workflow Integration and Utility**

Hybrid Functionality

❖ **Meta Publisher:**

- **Adding Value by Aggregation and Integration**

- **Enhancing Unique Structural Features**

- **Applying analytical tools to data elements**

❖ **Reference Service**

- **Providing Answers to the Remote Desktop**

- **Delivering Access to Hard to find information**

- **Making Favorite Titles More Useful**

❖ **End User Tool**

- **Facilitating Peer to Peer Communication**

- **Enhancing Productivity With Analytical Tools**

Navigation and Discovery

❖ **Early and Late Stage Discovery Strategies**

- **Berry Picking**

- **Orienteering**

- **Directed Search**

- **Parametric Search**

- **Browsing**

- **Look-up**

Adding Value

❖ **Aggregation as viewed from the user perspective**

❖ **Transforming complex reference books into deeply and easily navigable electronic databases**

❖ **Bringing data elements to life with analytical tools**

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Advanced Search [Search Results] Subject Areas Publishers Preferences

Modify Search Criteria or Reset to Perform a New Search.

Search for: bolts   [Search]

Query Example: "polyphenylene oxide" AND chemical resist*   Search Tips ▶

Search in: All Text ▾   All Subject Areas ▾

⦿ Entire Knovel Library   ○ My Subscription

Search Query: (bolts)
No. of Titles Retrieved: 355

Browse Search Results in: | **Entire Knovel Library** | **My Subscription**

All Titles New Titles Updated Titles Titles with Productivity Tools

Sort by: ⦿ Relevancy ○ Subject ○ Title Name ○ Popularity

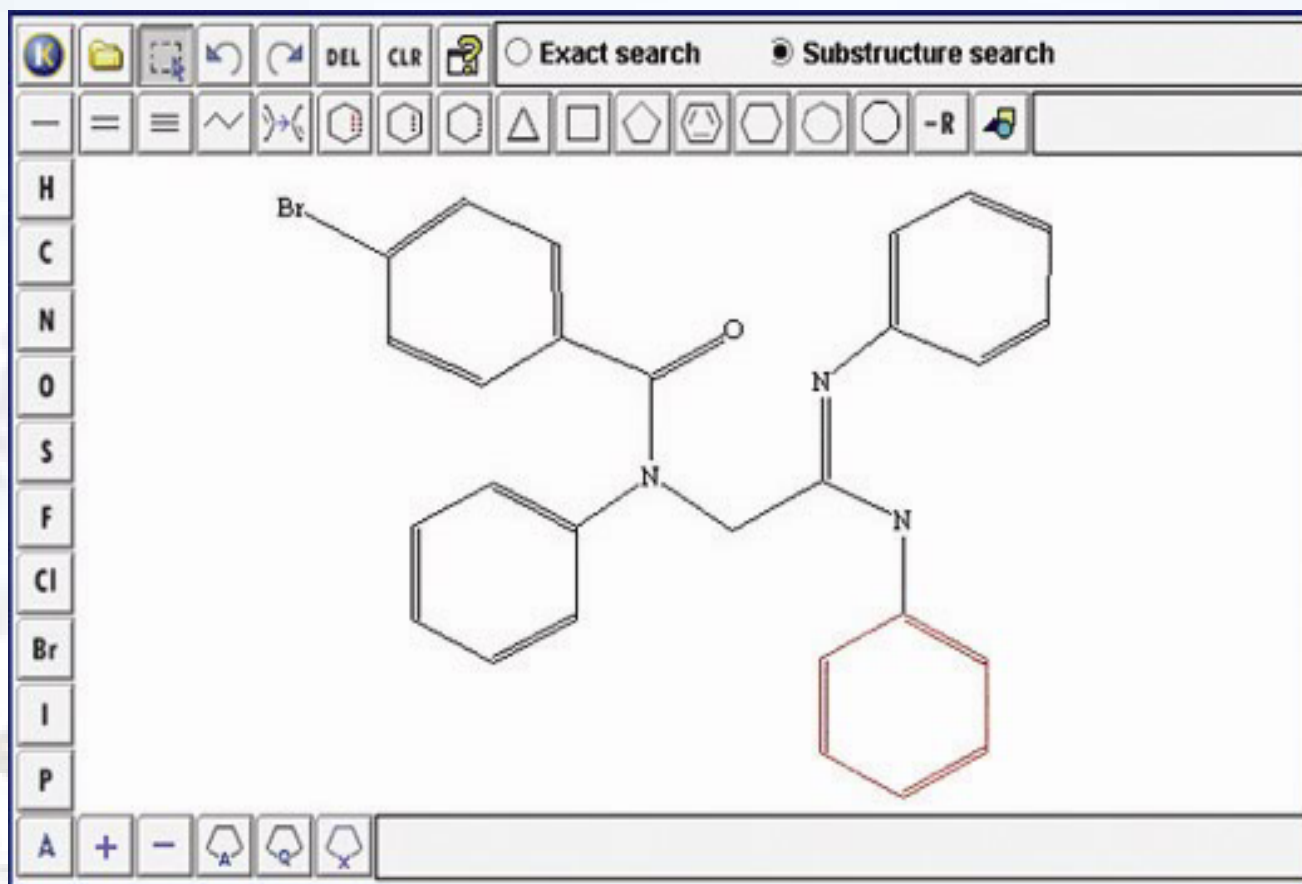| Titles	Relevancy
2004 ASME Boiler and Pressure Vessel Code, Section II - Materials ★▦	100%
2001 ASME Boiler and Pressure Vessel Code, Section II - Materials (Includes 2002 and 2003 Addenda) ★▦	100%
2004 ASME Boiler and Pressure Vessel Code, Section II - Materials (Includes 2005 Addenda) ★ NEW ▦	95%
Military Handbook - MIL-HDBK-17-1F: Composite Materials Handbook, Volume 1 - Polymer Matrix Composites Guidelines for Characterization of Structural Materials	74%
Standard Handbook of Machine Design (2nd Edition)	73%
Mechanical Engineer's Reference Book (12th Edition)	73%
Civil Engineer's Reference Book (4th Edition)	73%
Process Engineering Equipment Handbook	73%
Building Design and Construction Handbook (6th Edition)	73%
Mechanical Engineers' Handbook (2nd Edition)	73%
Piping Handbook (7th Edition)	73%
Construction and Structural Adhesives and Sealants - An Industrial Guide	73%
Machinery's Handbook (26th Edition)	73%
Cold-Formed Steel Design (3rd Edition)	72%

Analytical Tools

- ❖ **Interactive Tables**

- ❖ **Equation Plotter**

- ❖ **Graph Digitizer**

- ❖ **Graph Plotter**

- ❖ **Equation Solver**

- ❖ **Unit Converter**

Next Generation

❖ **Chemical Structure Searching**

❖ **Advanced Search**

❖ **Hybrid Software/Content Tools:**

- **Structural and Mechanical Design**

- **Material Selection**

❖ **Multimedia**

Chemical Structure Search

Beam Design Tool

Spectra Viewer

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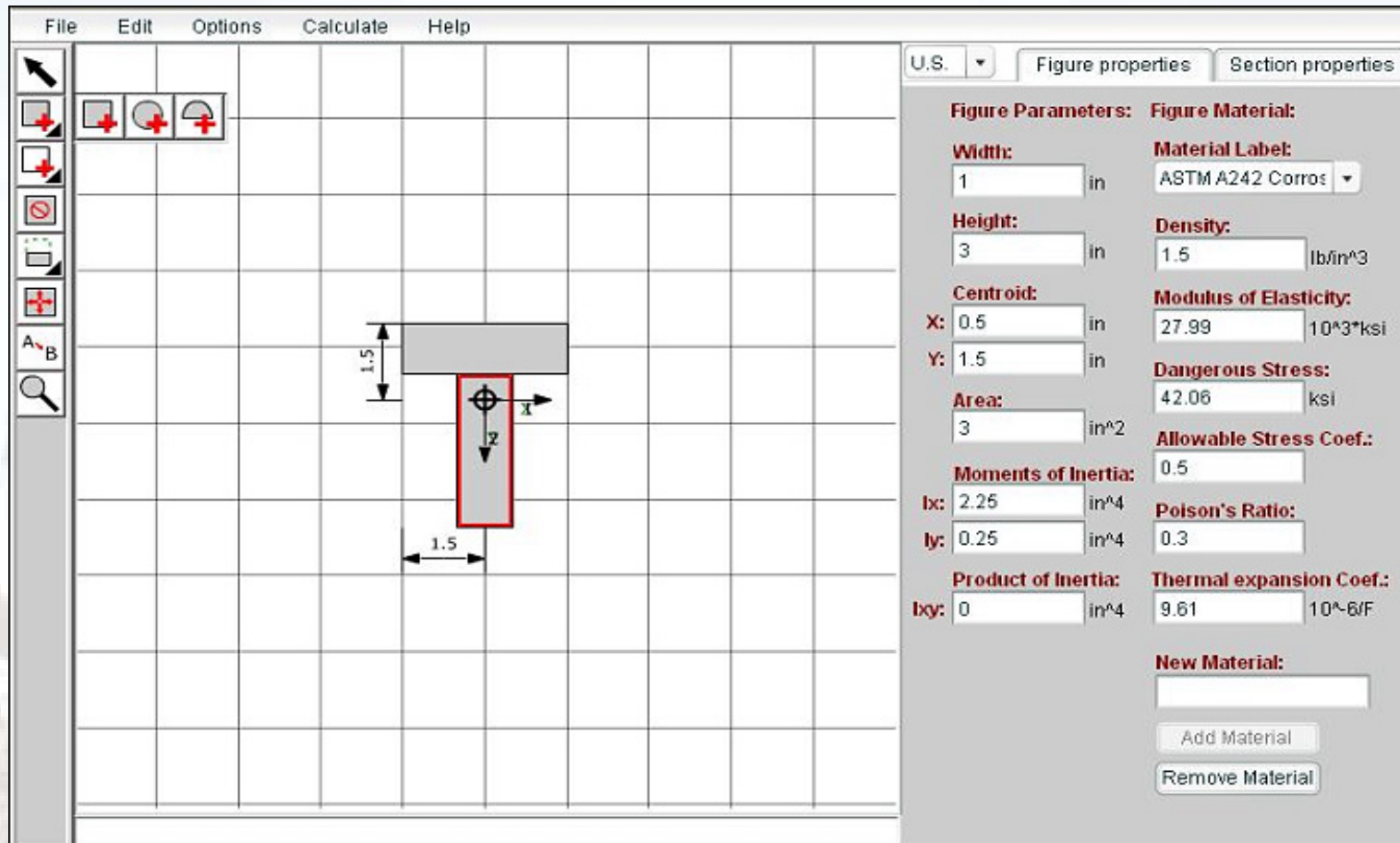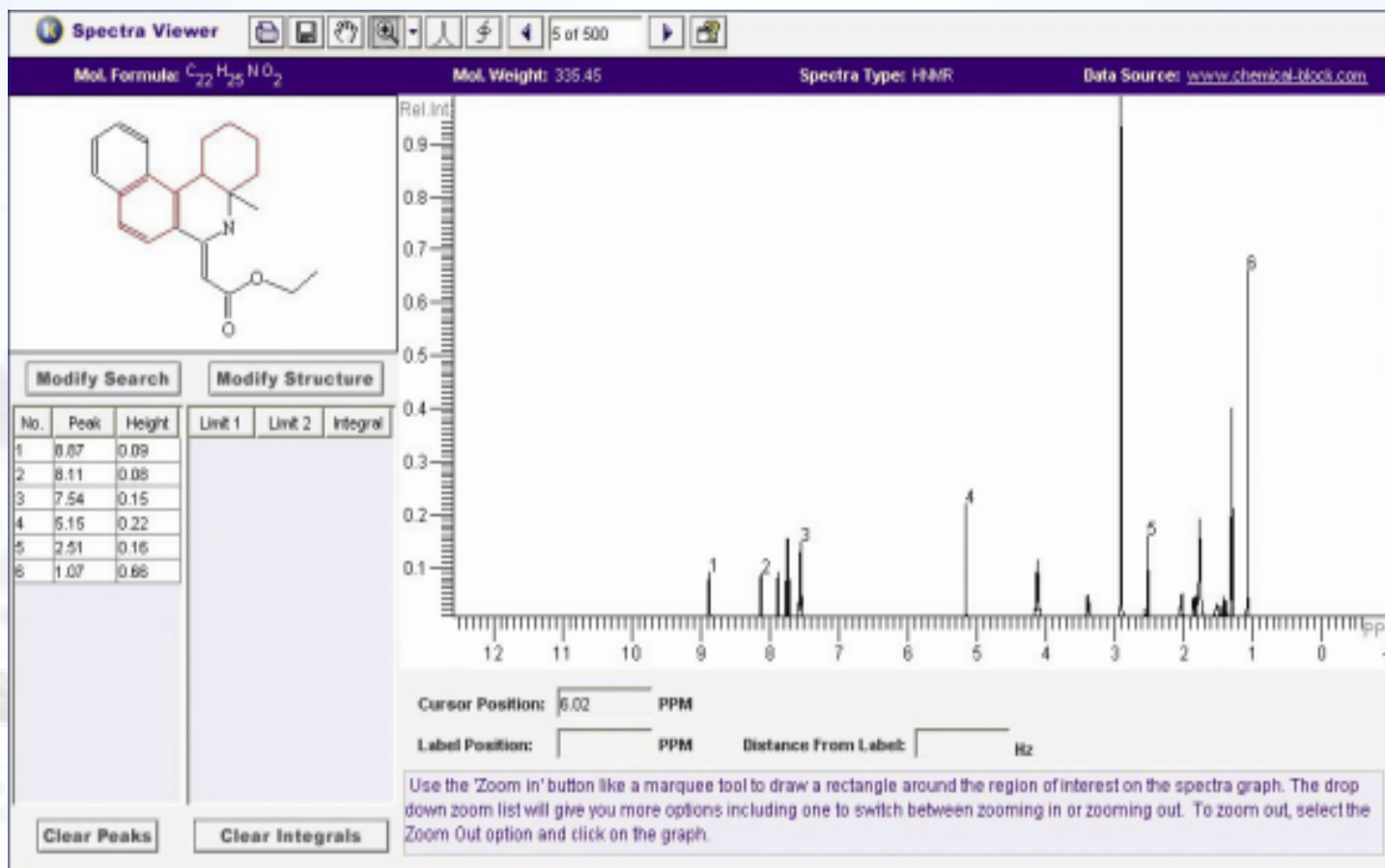
Development Drivers

- ❖ **Workflow Integration**

- ❖ **Intuitive Patterns of Discovery**

- ❖ **Peer to Peer Communication**

- ❖ **Shared Workflow**

- ❖ **Awareness, Access, and the Open Web**

- ❖ **Shared End User Focus With Librarians**