

COLLECTION AREA
Chemistry

April 2006

I. General Purpose

Resources are selected to support the instructional and research needs of faculty, graduate, and undergraduate students in the Department of Chemistry. In FY 2005, the Department consisted of 34 faculty, 183 graduate students, and 112 undergraduates. Advanced degrees granted in FY 2005 consisted of 25 at the Ph.D. level, 5 at the M.S. level, and 16 at the B.S./B.A. level. Resources to support the research of Ames Laboratory and the Institute for Physical Research and Technology (IPRT) are also collected.

II. History

In January 1869, Assistant Professor Albert E. Foote was hired to teach chemistry classes and develop a Chemistry Department. In 1871 the department was formally established and Professor Foote was named as the first Department Head. All courses dealing with Chemistry were taught in the Chemistry Department until 1891 when an Agricultural Chemistry Department was established. The Agricultural Chemistry Department was short lived, however, and was transferred back to the Chemistry Department in 1903. All Chemistry courses have been taught through the Chemistry Department since that time.

III. Iowa State University Program

Undergraduate Study

Both B.S. and B.A. degrees are offered. Graduates of the B.S. degree program qualify in many fields: as teachers of chemistry, as supervisors in industry, as technical sales personnel, and as research chemists. Students often continue with graduate work where they can specialize in a particular area of chemistry. The B.A. degree is useful for students who intend to pursue studies in parallel areas, such as secondary school teaching, to obtain joint majors or strong minors. The American Chemical Society approves the chemistry curriculum so students Completing the program obtain an ACS certified baccalaureate degree.

Graduate Study

The department offers work for the master of science and doctor of philosophy degrees with majors in analytical, inorganic, organic, and physical chemistry. Ph.D. students may specialize in one of five areas: Materials Chemistry, Industrial Chemistry, Biomolecular Sciences, Chemical Instrumentation, and Forensic Chemistry. The department participates in the interdepartmental major in toxicology.

Ames Laboratory (see <http://www.external.ameslab.gov>)

IPRT (see <http://www.iprt.iastate.edu>)

IV. Subject Boundaries

Chemistry is a ubiquitous science dealing with the entire physical universe at the atomic and molecular levels. At a rudimentary level is the basic study of elements, compounds, and substances: composition, structure, and properties including their transformation together with changes in energy. Beyond this, boundaries are blurred since chemistry permeates other sciences, technology, and everyday life. The subject and its literature is not only vast but is growing and changing rapidly.

V. General Collection Guidelines

- A. Linguistic – English is preferred. However, if an item fulfills all other collection requirements and it is not available in translation, it may be acquired.
- B. Geographical – Not relevant
- C. Types of Materials Collected – Monographs and serials are the main focus of the collection, but dissertations, government documents, and other items are acquired as appropriate. Indexes and abstracts, both print and electronic are maintained with an increasing emphasis on electronic resources.
- D. Format of Materials – No information format is excluded.

VI. Specific Collection Guidelines

Within the subject field, content level is selected according to needs. Content levels collected are general academic, advanced academic, and professional. General academic refers to works of scholarship accessible to non-specialists or applying to broad subject areas such as survey works on a topic. Advanced academic level applies to works of

scholarship treating narrowly defined topics, but generally accessible to undergraduates, graduates and professionals reading in a specialty outside that of his/her own. Professional level applies to works of extreme technical difficulty or treating such esoteric subjects as to interest only well-trained specialists in the field. Undergraduate and graduate textbooks are collected only selectively. Conference proceedings and conference monographs are only acquired for conferences held within the preceding 24 months.

One of the major focuses is maintaining a first class journals collection. The current status of the collection has been assessed against the top chemistry journals in the various specialized areas of chemistry according to the Institute of Scientific Information. The top serials in each area were selected by ISI Impact Factor.

Area	Total #	Cur Held	Electronic	Cancelled
Chemistry, Multidisciplinary (General)	60	45	43	8
Chemistry, Analytical	40	35	33	3
Chemistry, Applied	20	17	16	0
Chemistry, Inorganic & Nuc	20	20	16	0
Chemistry, Organic	20	19	17	0
Chemistry, Physical	40	40	37	0
Crystallography	20	15	15	1
Electrochemistry	20	14	13	1

In recent years the Department and the library have cooperated to convert much of the currently received journals into electronically accessible versions. The table above reflects the success of those efforts. In fact, in most of the cases above where the publication is not in electronic form this is usually because it does not have an electronic format available.

Although some titles are mentioned as having been cancelled above, it must be noted that these were cancelled in consultation with the department and for the most part do not reflect the department's primary research and instructional interests. Also, not reflected as a category above are many new titles that have been made available to the department through new subscriptions or through the library's consortial efforts with other institutions.

VII. Detailed Subject Areas

Analytical chemistry, Inorganic chemistry, Organic chemistry,

Physical and theoretical chemistry (includes quantum chemistry, stereochemistry, chemical reactions, surface chemistry, thermochemistry, solution chemistry, electrochemistry, radiochemistry, radiation chemistry, photochemistry), and Crystallography

VIII. Other Resources Available

Several indexes and abstracts give the researcher and student the ability to access the journal literature in the field of Chemistry. Interlibrary Loan service is available for obtaining materials either not available (either in print or electronically) through the Iowa State University Library.

IX. Cross-references to Collection Policies

Agronomy
Biochemistry, Biophysics and Molecular Biology
Chemical Engineering and Biological Engineering
Food Science & Human Nutrition
Government Documents
Mathematics
Materials Science and Engineering
Physics and Astronomy

X. Creation Date - September 2000

XI. Revision History – April 2006

XII. LC Class(es)

QD1-145 and QD450-999

XIII. Bibliographer Name

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