Rubber Division
American Chemical Society
www.rubber.org

Rubber & Affiliated Industries Opportunities

Student Guide

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Call to the Next Generation

The rubber, elastomer and polymer industry needs you. If you are a high school or college student interested in becoming part of a fascinating profession in chemistry, rubber or polymer technology, this guide will show how you can get involved from your freshman year to graduation and your first job in the industry. You will learn how to join a Student Chapter, apply for scholarships and internships, take education courses toward your career discipline, present technical papers or posters at student colloquia and apply for your first job.

The Rubber Division, local Rubber Groups and Corporate Leaders are partnering with universities to assist in financing education, offering valuable hands-on experience and encouraging students in the rubber, elastomer, polymer and other chemical fields of study to build the qualified workforce of tomorrow. This is your opportunity to obtain an exciting and challenging degree while actively being involved in a profession that is seeking the next generation of chemists, engineers and technologists.

Opportunities in the Rubber Industry

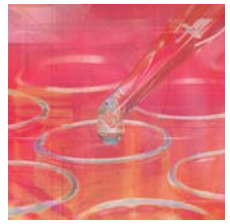
Individuals seeking employment in the rubber and related industries will find many positions available to them. Those holding degrees in chemistry, chemical engineering, mechanical engineering, polymer chemistry and rubber technology are but a few of the disciplines that will find ample opportunities. Some examples of the job positions available include research chemists and engineers, laboratory managers, research technologists and technicians, chemists, process engineers, rubber compounders, tire engineers and much more. The degrees required for these positions range from an associate degree to a Ph.D.

Those desiring a job in management, law, business, sales or marketing will find numerous opportunities as well. A technical background in these types of positions gives one a definite advantage in the job search process. As an example, many intellectual property attorneys hold an undergraduate degree in engineering or science. Sales and marketing personnel with a science background are able to understand both the processes and the business theories that go into decision making. Many of these types of positions require an advanced degree like an M.B.A. or J.D.

Median starting salaries for chemists and chemical engineers within the rubber and related industry tend to range from $35,000 to $70,000, depending upon level of degree and expertise. Up to date information on starting salaries for chemical and engineering positions can be found in the American Chemical Society's (ACS) *Chemical & Engineering News*. Go to the ACS website at www.chemistry.org for information on the magazine. A career in the rubber industry is very lucrative, with the industry offering much to both new graduates and experienced individuals. With an aging population of chemists in the rubber industry, the potential for advancement is great too, as many older workers are expected to be retiring in the next several years.

Whether you desire a position in the sciences, engineering, sales, marketing or law, you will find a rewarding career with a lifetime of opportunities available in the rubber industry.

Visit our website at www.rubber.org



Rubber Division and Rubber Groups

The Rubber Division of the American Chemical Society was founded as the India Rubber Chemistry Section in 1909 and became a Division of ACS in 1919. The Rubber Division is a professional organization dedicated to providing educational programs, technical resources and other vital services for the people associated with rubber and affiliated industries. Our mission is to promote the professional growth of individual members and to meet the needs of companies and academic centers that support our members.

Division membership includes individuals who are also members of the American Chemical Society (called Members) and individuals who are only members of the Rubber Division (called Affiliates). A student can join the Rubber Division as either a Student Member or a Student Affiliate. You may also join a local Rubber Group.

The local Rubber Groups are known as Subdivisions of the Rubber Division. They are formed in different locations based on a specific field of interest within the industry and/or for the purpose of holding technical meetings in specified geographical areas at which mutual technical issues are discussed. We currently have local Rubber Groups located throughout the United States and in several other countries. These can be found on the Division's website, www.rubber.org. The Rubber Groups host separate technical meetings and social events throughout the year in their localities.

The Division meets its mission via numerous avenues. We conduct two meetings a year (spring and fall) at which we offer technical symposia filled with expert speakers from around the world presenting the latest research and technological advances. We also offer a Business Summit at our fall meetings that brings in other experts who talk on relevant business-oriented issues in the industry. The fall meetings host our expositions, where hundreds of companies come to exhibit their products, services and state-of-the-art equipment and processes. In conjunction with our spring meetings, we also partner with other related associations and industries to host technical conferences such as our Rubber Modified Asphalt Conference and our Thermoplastic Elastomers Conference.

The Division furthers its educational commitment through our education workshops, online correspondence courses, technical publications, scholarships, career center and student chapters. We also offer various awards throughout the year such as Service Awards, Best Paper and Symposium Awards, Student Awards and our prestigious S&T Awards. The S&T Awards include the Charles Goodyear Gold Medal, Melvin Mooney Distinguished Technology Award, Fernley H. Banbury Award, Sparks-Thomas Award, George Stafford Whitby Award for Distinguished Teaching and Research and the Chemistry of Thermoplastic Elastomers Award. A gala formal banquet is held during our spring meetings to honor the S&T Award winners.

The Division produces the globally recognized *Rubber Chemistry and Technology* journal five times a year. This journal offers the most up to date research and technology in the rubber and polymer profession. The best part though is that the journal (dating back to 1928) has all of its articles published in a searchable online database that is offered free to our members. In addition to this excellent resource, technical information and literature searches are available through the Division sponsored Library Services. This is provided by a librarian who also has a degree in chemistry and is located in The University of Akron's Science and Technology Library.

How Can You Participate?

This guide provides details in six areas of involvement that will give you the skills and networking opportunities necessary to be ready to seek employment in the rubber industry. These six areas include Student Chapters/Affiliates, Scholarships, Education, Internships, Student Colloquia and Career Assistance. By becoming active in as many of these programs as possible, you increase your opportunity to land that first job!

Student Chapters/Affiliates

Joining a Student Chapter is a wonderful and educational way to learn more about the industry and your chosen profession while meeting other students and just having fun. Field trips to local rubber industry companies and the possibility of attending Rubber Division and Rubber Group meetings are also part of the excitement of joining a chapter.

The Rubber Division currently has two Student Chapters, one located at Ferris State University in Michigan and one at the University of Massachusetts-Lowell. The Division also has a Student Affairs Committee that is actively pursuing establishing more student chapters at other universities. To learn more about existing Student Chapters or if one exists at a specific university and how to contact the chapter President, go to the Workforce Recruitment & Development section on the Division's website, www.rubber.org/workforce. This includes information on Student Chapters relating to rubber, elastomer, polymer and chemistry. If you are attending a university without such a Student Chapter and would like to start one, then the Division would be happy to work with you, the faculty and the nearest Rubber Group to accomplish this. We have a "How to Establish and Maintain a Student Chapter" manual that you can obtain for free. Questions on starting a Student Chapter or obtaining the manual and/or a list of universities currently being considered for possible establishment of new Student Chapters should be addressed to studentaffairs@rubber.org.

The Rubber Division and local Rubber Groups work closely with Student Chapters to assure their faculty and chapter Presidents are involved in the Division's Student Affairs Committee, funding travel when available. This helps the committee gain insight into needs of the students, improved ways to work with students and how to improve the Annual Student Colloquium offered by the Division at fall meetings. As a member of a Student Chapter, you have the opportunity to get more involved in the industry, provide input to the Rubber Division and local Rubber Groups and even serve as President of the chapter.

As a student, you can also become more directly involved with the Rubber Division by becoming a Student Member or Student Affiliate of the Division. Student Members are those who join the Rubber Division and join the American Chemical Society. Student Affiliates are those who only join the Rubber Division. As a student, the membership fees are kept very low so that students can afford to join and experience the many benefits, technical education, networking opportunities and student oriented programs offered by the Rubber Division. We are also working toward building additional student programs to include social events and recognition at the spring and/or fall meetings. More information on benefits and the student application process can be found on the Division's website.

Scholarships

The Rubber Division, local Rubber Groups and industry recognize and support the need for financial assistance in obtaining a college degree. With this in mind, there are many scholarships available for those students who wish to pursue a degree in rubber technology, polymer science or the chemical profession. The Rubber Division has a Scholarship Foundation and currently offers a number of national scholarships annually to qualified students who apply and are selected. As the foundation grows, the number of annual scholarships will also grow. Most local Rubber Groups offer scholarships oriented toward universities within their state or region. The American Chemical Society also offers various scholarships, as do most of their 33 Divisions. Additionally, many industry companies offer scholarships, often tied to internships within their company.

Current information on these resources can be found on the Division's website. This site includes the scholarship application process and forms for Division scholarships; a section on Rubber Groups, locations and contact information to include links to their websites; and a link to the American Chemical Society's website, www.chemistry.org. This section provides a national listing of available scholarships and direct links for applying online. As more scholarship opportunities are determined, these will also be added to this national listing.

Training and Education

Training and education are essential to maintaining a qualified workforce and for a student to be competitive when searching for a job in the industry. You have taken the first step by committing to college and obtaining your degree. There are other venues also available to help increase your knowledge and gain valuable experience toward a position in the rubber, polymer or chemical profession. Training via internships is one method; however this will be discussed in the next section. The Division is working toward a more comprehensive list of available training and education programs to include industry, associations and universities that offer such programs. This is available on the Division's website.

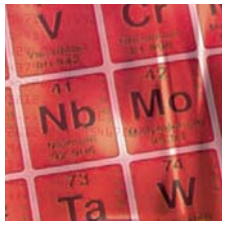
The Student Chapters often offer trips to industry companies where you can see the equipment and processes, meet others in the current workforce who have similar degrees as you, learn what job positions are available and start your networking. Student Chapters also host specific seminars and industry lecturers to further your knowledge.

The Rubber Division offers many opportunities to expand your education. One program is our online correspondence courses. The Division currently has three online courses that can be taken via your computer and meet your individual time constraints. These courses are in Basic, Intermediate and Advanced Rubber Technology; however we are working to develop additional courses in a partnership with the Akron Global Polymer Academy, located with the Rubber Division in The University of Akron's Polymer Engineering Academic Center. Continuing Education Units (CEUs) are available for these online courses via a Rubber Division/University of Akron collaboration. The Division also offers education workshops at our spring and fall meetings and hopes to offer additional workshops on site at universities in the future, in conjunction with our local Rubber Groups. Information and registration for online correspondence courses and education workshops can be found on the website.

Training and Education (continued)

The Rubber Division offers a wide variety of technical publications via our website. This list continues to expand as we develop or locate other resources to help students and the current workforce. Additional technical publications can be found on the American Chemical Society's website. At Division meetings, students can attend technical symposia and learn from global recognized experts in industry and academia, attend special student technical colloquia (more information follows in a separate section of this manual), take education courses as previously mentioned, take career workshops (when available) and visit hundreds of exhibitors to see and learn about their equipment, processes, services and careers in the industry. Local Rubber Groups also offer education and networking through their local technical meetings and seminars. Information on this is also found on our website.

Various universities offer courses and/or full degrees in rubber, polymer and/or chemistry. A list of those universities is available on the Division's website. In conjunction with the Rubber Manufacturers Association, Ferris State University in Michigan has developed a Rubber Technology degree that includes laboratory and hands-on training. If you are not attending Ferris State University, then you may want to check to see if your university would accept accredited courses from Ferris State in rubber technology. By taking some of these courses, you would expand your education and competitiveness in the rubber and polymer industries.



Internship and Co-Op Programs

Working as an Intern or Co-Op with an industry company is one of the most rewarding and educational programs available to students. Internship and/or Co-Op positions exist in many locations and with most companies within the United States. An internship is where a company hires a student for a period of time (typically for one semester or during summer break) to work specific projects or in many sectors of the company. The student is paid a salary and sometimes receives additional travel and living expenses while working with the company. A university and company may also have a Co-Op agreement whereby students are hired by companies, paid a salary, work for longer periods of time (often alternating between work and school) and receive academic credit for the periods of work as well. If you are interested in an Internship or Co-Op program, then you can look at what is available in the Rubber Division's online listing under the Workforce Recruitment and Development section of our website. You can also contact your university academic advisor or department chair to determine if one is available through your school.

Studies have shown that students who intern or participated in a co-op program are more likely to find a job quicker than others, many times being hired by the very company in which they performed the internship. This knowledge plus the real life educational experience a student receives should be enough to convince you of the value of an internship or co-op program.

The Rubber Division established a national internship/co-op listing on our website that will grow as more companies choose to participate. This listing will allow students to identify what and where internship and/or co-op programs are available and then apply for the positions via direct links. You can also find more information about internships/co-ops on the Division's website to include a free manual, "Operational Guide for Starting and Improving Internship/Co-Op Programs."

Student Colloquia

The Rubber Division established a Student Affairs Committee that developed our first Student Colloquium program in 2004. The colloquia are held each year during the Division's fall meeting and include opportunities to present technical papers or posters in a non-threatening venue among peers and other attendees. The added benefit of a technical paper is that it offers the student a chance to show their poise and presentation skills as well as their work. The Rubber Division pays travel costs for those students selected to present a paper or poster. Additionally, there are several scholarships awarded to the ones chosen as the best papers and posters during the colloquia.

Participating in a colloquia is an excellent way to present your talents and work to other attendees, including peers and industry representatives. The requirements for student colloquium papers are also much less stringent than those for technical symposium papers. As another benefit, those who present papers or posters also get to attend the Division's technical symposia, business summit, exposition and other special events.

A new benefit that was added in 2005 is a Job Fair held in conjunction with the Student Colloquium. This is hosted by the participating Rubber Groups. This is your chance to meet industry representatives, see what jobs are available and apply for those jobs.

Each year, the Division goes out with a Call for Papers for the upcoming Student Colloquium. You can find the call for papers and requirements for submittal on the Division's website.

Career Center

The Rubber Division launched its online Career Center in 2003. There is a link to the Center on the Division's website home page as well as in the Workforce Recruitment & Development section. The center is free to students (and others in industry) who wish to post resumes and/or search for jobs in the rubber industry. It also allows companies to post jobs and/or search resumes. The Division is working to expand the services of the Career Center to offer information on job searching, writing resumes and interviewing. Periodically, the Division will host an ACS Career Workshop for students and industry personnel during our fall meetings. This workshop includes an expert who speaks on job searches, resume writing and interviewing. The workshop includes career publications and the ability to have your resume reviewed by the expert.

In addition to the Rubber Division's Career Center, the American Chemical Society hosts an online Career Center in the chemical profession. You can access this via a link to their website on the Division's website. ACS has an extensive program that includes setting up interviews with companies during their annual meetings. They also offer a wide variety of career workshops during their meetings.

Summary

The rubber industry is an exciting career choice, with hundreds of companies seeking the next generation of qualified chemists, engineers and technologists. By obtaining your degree in these or related fields, especially one in rubber or polymer technology, you have started the process to enter the rubber industry. Your involvement in the Workforce Recruitment & Development Program and getting involved with the Rubber Division, local Rubber Groups and industry during your college tenure further enhances your opportunity to land your first job. With competition in today's world, remember that "when opportunity comes, it is open to those who are prepared, but it waits for no one." Will you be prepared?