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The Role of Chemistry in Life career

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Apart from these major fields, the new innovative discoveries using services of chemistry are coming up like waste management systems, forensic science, crime investigation chemicals, telecommunication systems, Information technology and space missions.

Chemistry jobs vary in nature, salary, and required qualifications; the information and list below is intended to help you to judge the right chemistry career for you.

1. Forensic Scientist

Forensic scientists collect and analyze evidence from a crime scene. This might include items like dirt samples, blood samples, fingerprints and more. They are responsible for using their expertise to report on and present their findings in legal cases.

2. Materials Scientist

Materials scientists study man-made and natural substances to determine their properties, composition and how they could be transformed or combined to increase effectiveness or create new materials. By analysing and experimenting with existing materials, materials scientists are able to enhance the way they are used and create new materials to better serve humanity's needs.

Materials scientists study and analyze both natural and manmade items to learn more. Their findings might be used to develop new materials, alter materials or make decisions about using materials in a different way.

Materials scientists must be strategic thinkers and problem solvers. You should be comfortable leading teams, working in highly regulated environments. This position works with engineering and production and, thus, should be able to communicate and synthesize information in a succinct, valuable way.

3. **Research Scientist**

This role is right if you're an adventurous researcher with a keen eye for details. You will be directly involved in developing new medicines, technology and more. You will need a strong foundational understanding of chemistry and comfort in technological proficiency as a research scientist.

4. Analytical Chemist

Analytical chemists use their skills and expertise to analyse substances, identify what components are present and in what quantities, as well how these components may behave and react with one another. This can include the analysis of drugs, food and other products to determine effectiveness, quality and to ensure they are safe for human consumption or use.

Analytical chemists study substances for toxicology examinations, developing pharmaceuticals, answering forensic questions and more. Analytical chemists might work for a particular lab or organization, and might also adopt particular specialties like forensics or toxicology.

5. Synthetic chemist

Synthetic chemists test and develop chemical compounds to create new material for a specific purpose. They typically work in a lab and can develop materials for nearly any industry including healthcare, manufacturing and food and beverage**.**

6. Quality control chemist

Quality control chemists, or QC chemists, monitor and test the use of materials during the production process to ensure all standards are met. QC chemists typically work in the pharmaceutical or manufacturing fields. They might also develop new products and testing methods.

Quality control chemists are essential to laboratory function. As a QCC, you oversee and assist in calibrating all laboratory events, documentation and archiving. Further, the QCC is responsible for training new lab personnel as well as all quality control functions as needed.

7. Organic chemist

Organic chemists research, manipulate and study materials that contain carbon. They might perform various scientific studies to identify or find applications for materials. Many different professions might employ organic chemistry like chemical engineers, veterinarians, pharmacology and more.

8. Water Chemist

Water chemists, as the name suggests, are concerned with analysing and maintaining the quality and condition of water, essential for human life on Earth. This is a highly interdisciplinary field, so as well as chemistry you may also need knowledge of linked fields such as microbiology and geology. You may find similar roles under a variety of names, for example hydrologist or hydrogeologist.

Water chemists are responsible for studying and monitoring the presence of chemicals in water. They might perform tasks like ensuring water purification processes are safe, collect and analyze water from various ecosystems and make projections to help determine various rules, regulations and policies.

9. Hazardous Waste Chemist

Hazardous waste chemists deal with the management and safe relocation of hazardous materials (hence the common abbreviation ‘hazmat’). They use their expertise to identify harmful chemical components in the air, water or soil, evaluate the danger they present and coordinate their removal and containment.

Hazardous waste chemists are responsible for monitoring and managing chemical pollutants in the air and water. They might work for entities with large production and manufacturing operations to ensure processes adhere to rules and regulations. They might also work to develop plans for better, more efficient ways for organizations to manage hazardous waste.

10. Geochemist

Geochemists study the physical and chemical properties of the Earth, particularly rocks and minerals. They use their knowledge to determine the make-up and distribution of rock and mineral components, and how these may affect the soil and water systems in which they are found. Geochemists may help to identify oil drill sites, improve water quality or deternine how best to remove hazardous waste.

Geochemists study the appearance, movement and effect of chemical compounds of the earth. This might involve the movement and distribution of compounds through water systems, the chemical makeup of minerals and more.

11. Pharmacologist

Pharmacologists undertake the development and testing of drugs, analysing how they interact with biological systems. This is essential for ensuring that drugs are effective and safe for human use, and may involve the testing of drugs on animals or on human volunteers. Pharmacology roles are often lab-based and may involve non-standard hours in order to monitor ongoing experiments.

Pharmacologists perform studies on new and existing drugs and other pharmaceuticals for their effect on humans and animals. They study the source and chemical makeup of drugs. They might be responsible for ensuring drugs are safe and adhere to rules and regulations.

Pharmacologists perform a variety of research and data-based duties. In this role, you would be responsible for monitoring patient response to treatment, organizing and maintaining documentation on trials and compiling data on research. This job requires a high-degree of organization and attention to detail as well as a curious nature.

12. Toxicologist

Toxicologists, like pharmacologists, may study the effects of drugs on biological systems but also look at the effects of other substances, both natural and man-made. They work with and develop methodologies for determining harmful effects of substances, as well as how to judge correct dosages and therefore avoid them. As with pharmacology, toxicology roles are often lab-based and involve the monitoring of experiments and interpretation of results.

Toxicologists are responsible for testing various blood and tissue samples to detect the presence of pharmaceuticals, poison, alcohol and other substances in the body. They might help answer questions related to criminal cases.

13. Chemical Engineer

Chemical engineers are involved the the design and development of new products from raw materials. They use their knowledge of chemical properties and reactions to transform materials from one state to another, for example making plastic from oil. Chemical engineers may work in almost any industry, assisting in the production of innovative, high-end products such as ultra-strong fabrics or biocompatible implants.

Chemical engineers use various methods of research including mathematics and biology to create and develop production processes related to chemicals. Their work aids in manufacturing products like pharmaceuticals, food, fuel and more.

Chemical engineers must be creative and innovative in their research of product quality. They must have strong analytical skills as well as communication skills to relay information to outside parties.

14. Chemistry Teacher

Chemistry teachers work in schools passing on their knowledge of chemistry to the next generation, following a set curriculum and helping their students to pass and excel in their school examinations. As well as a degree or equivalent qualification in chemistry, you may also require a teaching qualification (such as a PGCE in the UK) in order to become a chemistry teacher.

Chemistry teachers develop and present curriculum related to chemistry science. They are responsible for ensuring the effective transfer of knowledge to their students through lectures, tests, projects and more.

15. Chemical technician

Chemical technicians are responsible for ensuring research chemists are able to properly and efficiently perform studies in a lab. They might complete items such as monitoring equipment or using techniques to help in specific research tasks.

16. Laboratory Technician

Laboratory technicians are integral to the functioning of any laboratory environment. Lab techs support the team in inventory, servicing lab equipment and communicating with leadership. Further, he or she is responsible for ensuring all standards and protocols are followed during procedures.

17. Oceanographer

Oceanographers are responsible for researching marine ecosystems. They perform scientific studies on topics like seafloor geology, ocean life, water compounds, circulation and more.

18.Doctor

Doctors obviously require extra degrees after Bachelor's, depending on the area of study. With a full comprehension on the medical world, doctors also need to be able to juggle a handful of tasks flawlessly as well as relay information to nurses, patients and staff alike. This is a high-pressure, high-risk role, which is indicative by its competitive hiring field and salary.

19. **Environmental Consultant**

Environmental consultants must have a deep passion and functional intelligence of environmental science. Project management and review are essential when rolling out initiatives and policies. Relationships are important in this role so ideally, you would be able to forge bonds with people easily.

Conclusion

Most of the chemistry jobs listed above will require you to have some level of qualification in chemistry, whether that's a bachelor's degree, master's degree or PhD.

Many chemistry jobs are lab-based, though not all - a number of roles may include field work, office work, or even teaching in a school, university or other academic environment.

In the modern world, no field is left untouched with the extended hand of chemistry.

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