

CSIR – National Chemical Laboratory (NCL)

Chemistry plays an important role in shaping modern science and industry. From medicines and plastics to new materials and sustainable technologies, chemical research helps improve everyday life. Scientists at the **CSIR – National Chemical Laboratory (NCL)** work to develop innovative chemical solutions that support industries, technology, and environmental sustainability.

Located in **Pune**, NCL is one of the premier research laboratories of the **Council of Scientific and Industrial Research (CSIR)**. Since its establishment in 1950, the institute has been known for its contributions to **chemical sciences, materials research, catalysis, and polymer technology**.

One of the major research areas at NCL is **catalysis**, which involves developing substances called catalysts that speed up chemical reactions without being consumed. Catalysts are widely used in industries such as petroleum refining, pharmaceuticals, and environmental protection. By designing better catalysts, scientists can make industrial processes faster, cleaner, and more energy – efficient.

NCL is also a leader in **polymer and materials research**. Scientists study new types of materials that can be used in packaging, electronics, healthcare, and energy technologies. These materials can have special properties such as flexibility, strength, or resistance to heat and chemicals.

Another important focus of the institute is **green chemistry and sustainable technologies**.

Researchers work to design chemical processes that produce less waste, consume less energy, and reduce environmental impact.



Activity Idea for Teachers

Teachers can help students explore the importance of chemistry through a simple **materials observation activity**. Students can identify different materials around them, such as plastic bottles, metal objects, glass items, or rubber products and discuss what properties make them useful.

Students can then think about questions like:

- Why are different materials used for different purposes?
- How do scientists design new materials?
- How can chemistry help create environmentally friendly products?

This activity helps students understand how **chemical science influences everyday materials and technologies**, connecting classroom learning with the innovative research carried out at institutes like NCL.