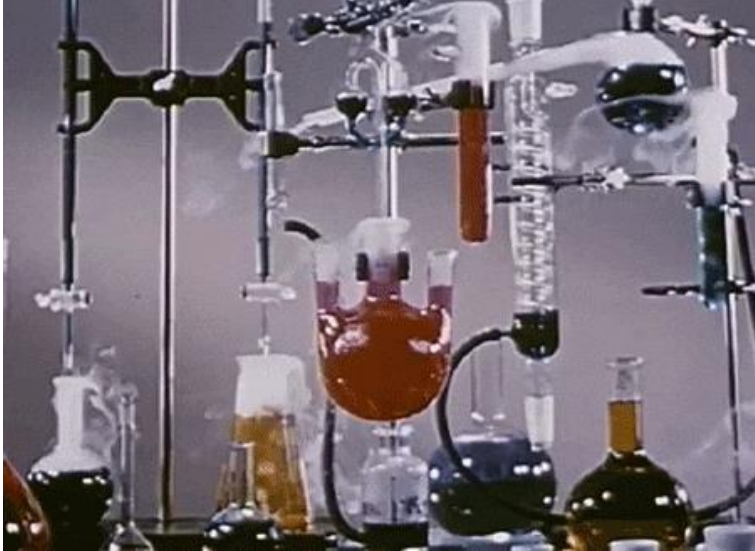




ORIENTATION TO
PRE-ENGINEERING STUDENTS
MARCH 2023

What is Chemical Engineering?

❑ Chemical engineering is an engineering field which deals with the **study of operation** and **design of chemical plants** as well as methods of improving production.



What is Chemical Engineering?



Using principles of **chemistry**, **physics**, **biology**, **mathematics** and **economics**, chemical engineers **design equipment**, **processes** and **systems** to **refine raw materials** into **useful products** through chemical manufacturing.

Some Chemical Engineering Products



Some Chemical Engineering Products



Some Chemical Engineering Products



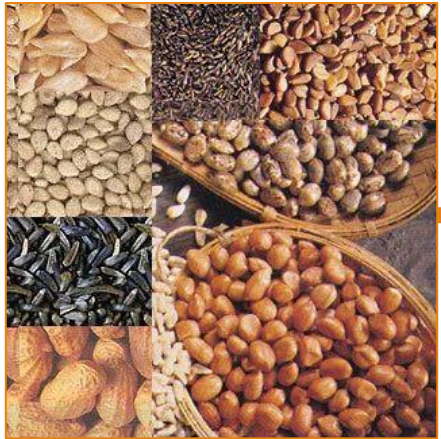
Some Chemical Engineering Products



Some Chemical Engineering Products



Some Chemical Engineering Products



Some Chemical Engineering Products



Some Chemical Engineering Products



Some Chemical Engineering Products



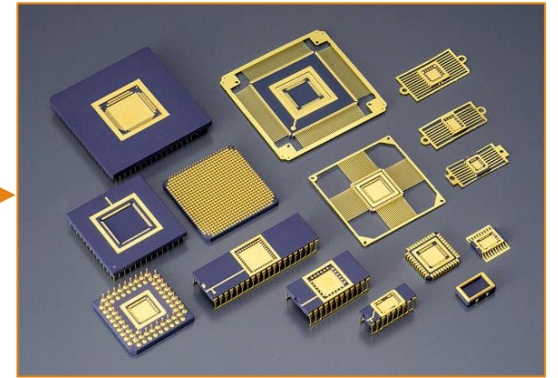
Some Chemical Engineering Products



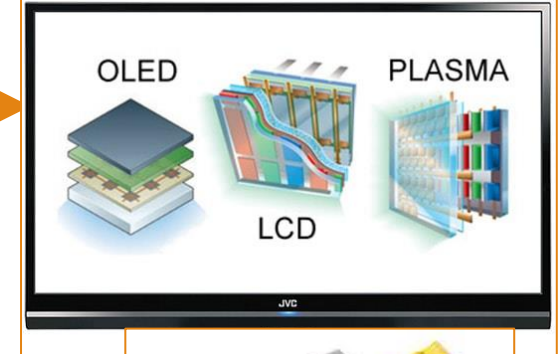
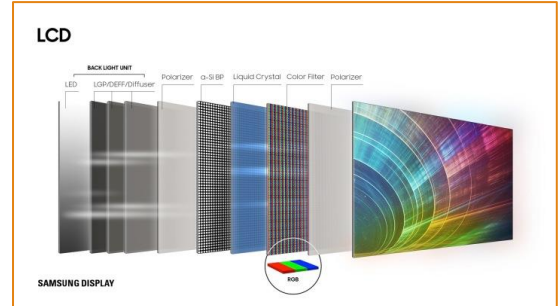
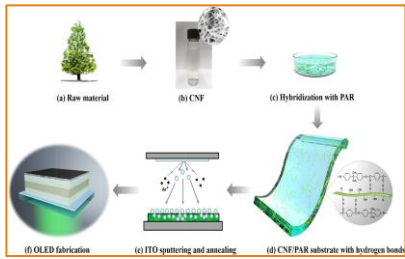
Some Chemical Engineering Products



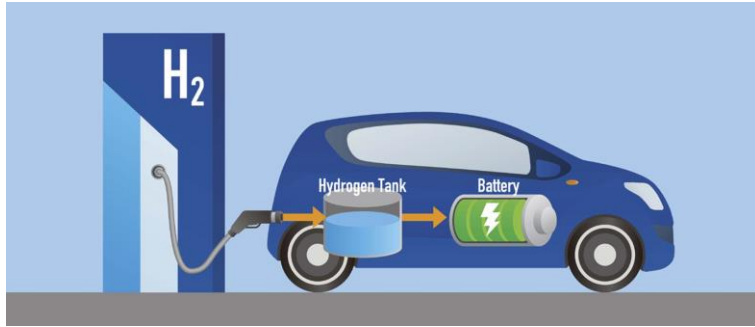
Some Chemical Engineering Products



Some Chemical Engineering Products



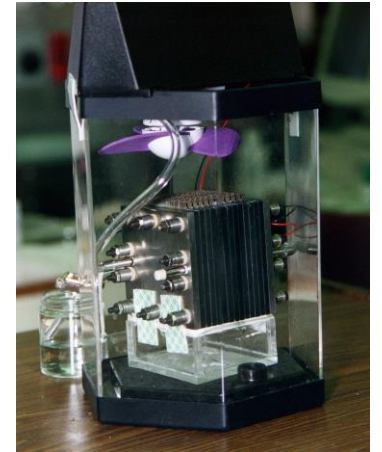
Future of Chemical Engineering -Examples



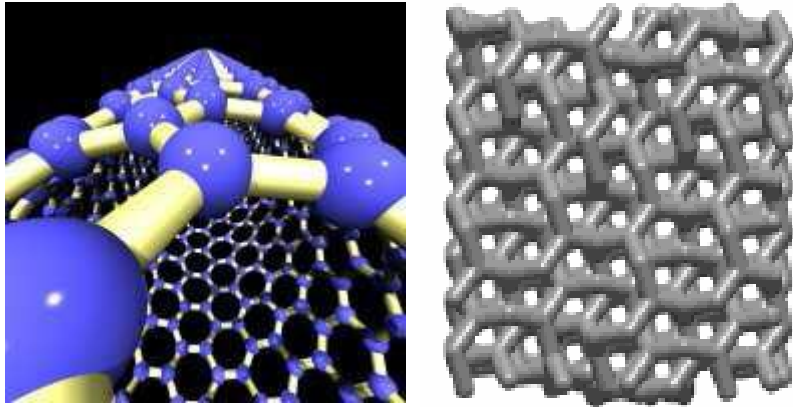
Hydrogen fuel



Biotechnology



Methanol Fuel Cells



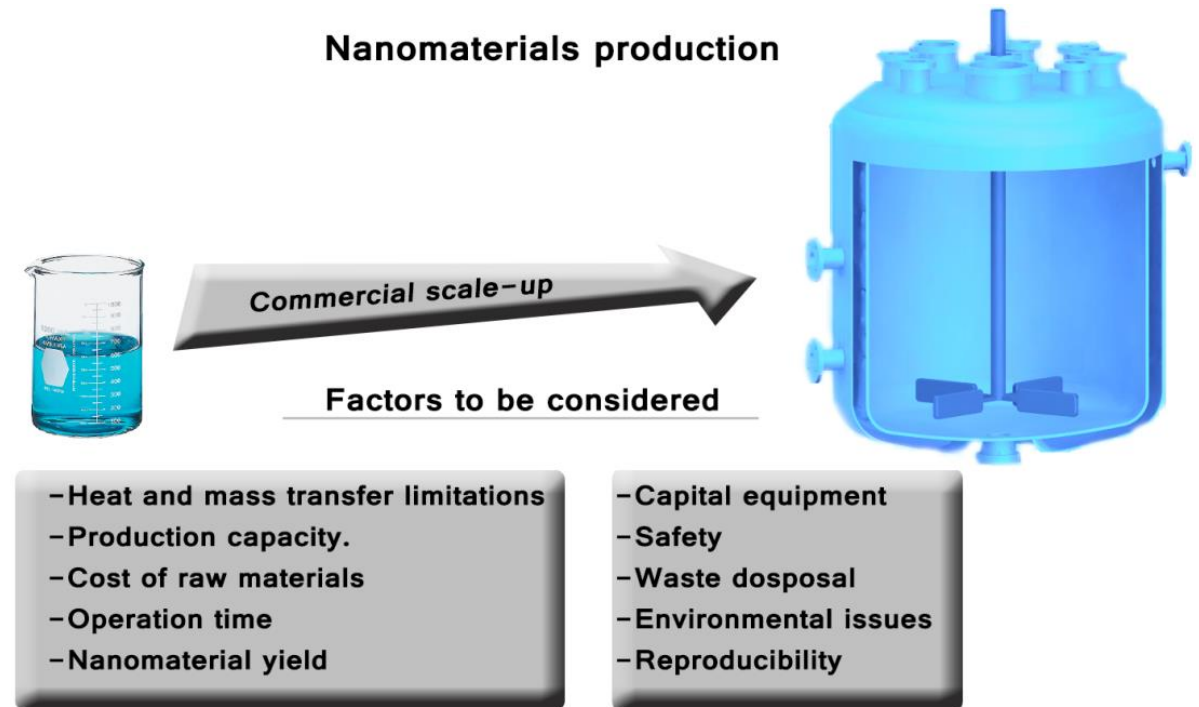
Nanotechnology



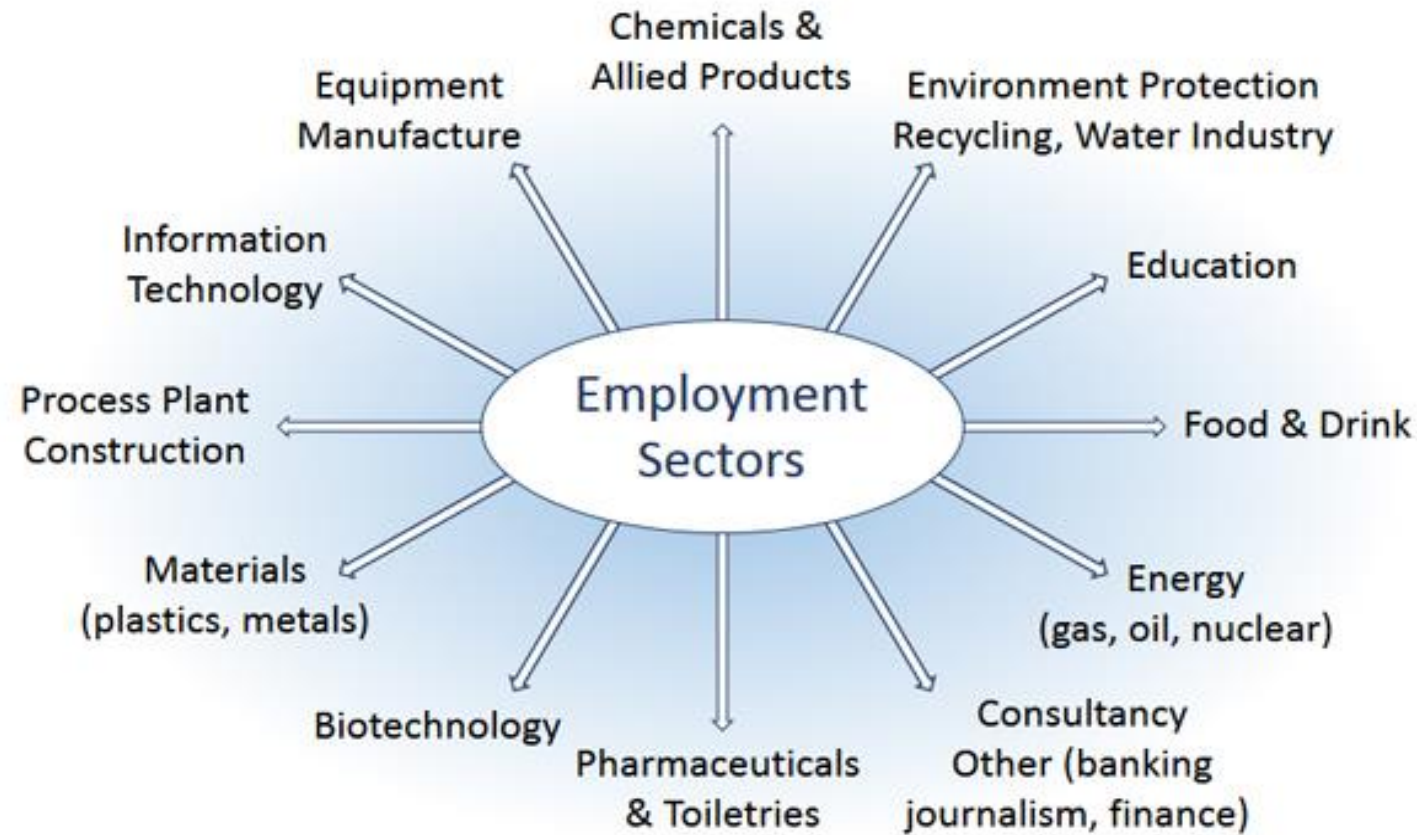
Environment

Chemical Engineering work?

❑ Chemical engineers work with the **smallest scale nanomaterials** in a **laboratory** setting through to developing **large-scale, industrial production systems**.



Professional Profile



Chemical Engineering Area of Specialization

- Process Engineering
- Food Process Engineering
- Environmental Engineering
- Material Engineering
- Biochemical Engineering
- Biomedical Engineering
- Sustainable Energy Engineering
- Pharmaceutical Engineering
- Petroleum Engineering
- Mineral Process Engineering



SCBE'S Resource (staff and Laboratory facility

Staff

Academic Rank	Number
Professor	3
Associate professor	9
Assistant Professor	11
Lecturer	54
Technical Assistant	12



Most of our course are integrated with laboratory work



Laboratories

- ❑ Chemical reaction engineering
- ❑ Mineral and Construction input material laboratory
- ❑ Thermal unit operation
- ❑ Mass transfer unit operation
- ❑ Mechanical unit operation
- ❑ Environmental engineering
- ❑ Food engineering
- ❑ Analytical Laboratory
- ❑ Biochemical Laboratory



International Partnership

- University of Cagliari, Canada
- Stellenbosch University , South Africa
- Hochschule für Technik und Wirtschaft (HTW) Berlin, Germany
- Case Western Reserve University, USA
- University of Toulouse, France.
- Cumhuriyet University, Turkey
- Deutsches Biomasseforschungszentrum (DBFZ, German Biomass Research Center), Germany
- STEMPower, USA
- Dow Chemical, USA
- China AID, China



When writing the
story of your life,
don't let anyone
else hold the pen.