## Importance and Scope:

The term Materials Chemistry covers various chemical sciences such as inorganic, organic, physical and chemical engineering in which information about the scope of the newly emerging discipline of materials was assembled, collated, and disseminated leading to an authoritative definition of the subject. However the presence of "chemistry" indicates the design, synthesis, processing and utilization of materials. The objective was not so much to produce lists of specific topics or categories of compounds and phenomena, which would quickly become out of date, but to establish some principles that could be deployed by IUPAC and the chemical community. It was recently established that materials with completely new properties can be made using nanoscale manipulation. This poses a major challenge to basic research, but nanoeffects also provide interesting perspectives for new industrial processes and applications. In general, emphasis is placed on the interdisciplinary nature of materials science and issues at the forefront of the field, such as energy and environmental issues, as well as medical and bioengineering applications.

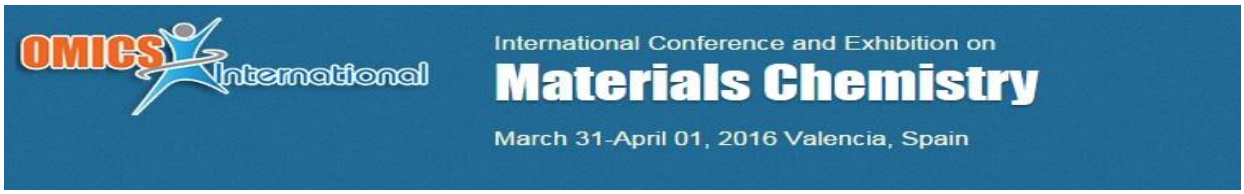
Materials scientists and engineers work in materials process engineering, research and development, quality, technical support, management, technical sales and marketing, and more. Employers range from primary material producers and refiners to utility providers, the transport industry, the defence force, universities, research institutions and multinational technical consultancy firms. There are a multitude of opportunities for scientific and commercial endeavour in the areas of forensics, bio-materials, electronic devices, nano-materials, the environment as well as new and innovative materials and processes.

## Why it's in Valencia, Spain:

The chemical sector has become the second largest exporter within the Spanish economy. It is one of the basic pillars of the Spanish economy, and is made up of more than 3,300 companies. Spain was the fifth largest producer in Europe (after Germany, France, Italy and the United Kingdom), accumulating 7% of European business and 2% of international trade.

The good performance of the Spanish chemical industry over the past 30 years has also seen a progressive move towards products with greater added value. By sub-sector, pharmaceutical products account for 25% of the total, followed by plastic and rubber raw materials (15%). Also significant are organic chemicals, detergents and cleaning products, which all account for more than (9%), and paints and inks, pharmaceutical raw materials and perfumes and cosmetics, all of which account for more than 5%.

Valencia stood third generating 8% of total Spanish chemical sales. It is an active industrial and commercial center producing textiles, metal products, chemicals, automobiles and so on.




## Why to attend:

To have a broader view on the materials used in case of manufacturing different chemicals, pharmaceuticals, and the innovative methods employed for their development and processing in various fields of materials science. The current conference also deals with the advanced technologies like nanostructures, microstructures which distends the growth in formulating new medicines thereby promoting healthcare. It not only gives an idea on the materials but also creates a unique approach towards novel strategies.

## Conference Highlights:

Materials Science and Engineering

Basic Informatics in various fields

Role of Materials chemistry in Pharmacy

Design and Synthesis of Materials

Foundational Challenges in predictive Materials chemistry

Rational Chemical Sythesis on Nanoscale and Nanostructured materials

Study of Polymer Science and Technology

Applied Materials Chemistry

Current Innovations and Emerging areas

Research aspects

Science of Advanced Materials

## Famous Chemists across the globe:

Charles M. LIEBER, Harvard University

Omar M. YAGHI, University of California Los Angeles

Michael O'KEEFFE, Arizona State University

K. Barry SHARPLESS, Scripps Research Institute

A. Paul ALIVISATOS, University of California Berkeley

Richard E. SMALLEY, Formerly Rice University

Hongjie DAI, Stanford University

Xiaogang PENG, University of Arkansas

Valery V. FOKIN, Scripps Research Institute

Peidong YANG, University of California Berkeley

## Famous Chemists in Spain:

Manuel Ballester

Heribert Barrera i Costa

José Elguero Bertolini

Avelino Corma Canos

Antonio M. Echavarren

Fausto Elhuyar

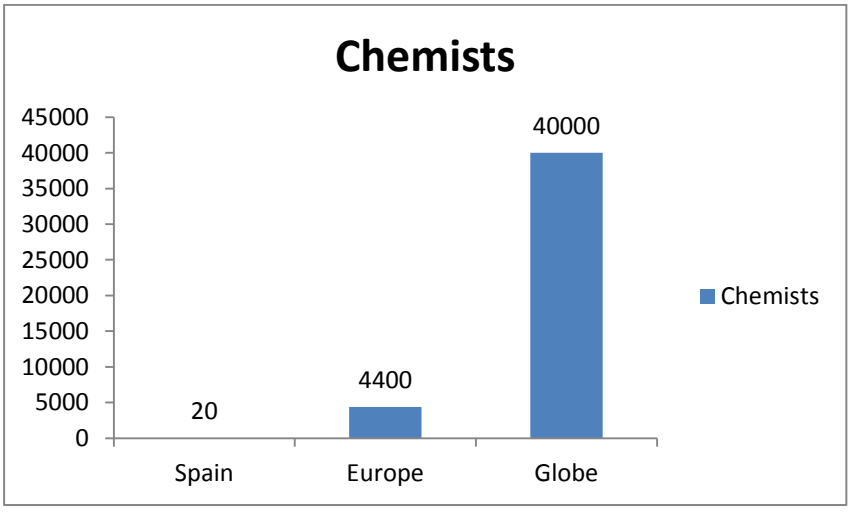
Juan José Elhuyar

Josu Jon Imaz

Jesús Jiménez Barbero

Enrique Moles Ormella

## Statistical Analysis of Chemists:



## International Chemistry Associations:

Cooperation on International Traceability in Analytical Chemistry

Electrochemical Society

European Association for Chemical and Molecular Sciences

European Colloid and Interface Society

European Federation for Medicinal Chemistry

European Federation of Chemical Engineering

European Precious Metals Federation

Federation of Asian Chemical Societies

International Association of Catalysis Societies

International Association of Nanotechnology

## Chemical Societies in Spain:

National Association of Chemists of Spain

Spanish Royal Society of Chemistry

Spanish Society of Biochemistry and Molecular Biology

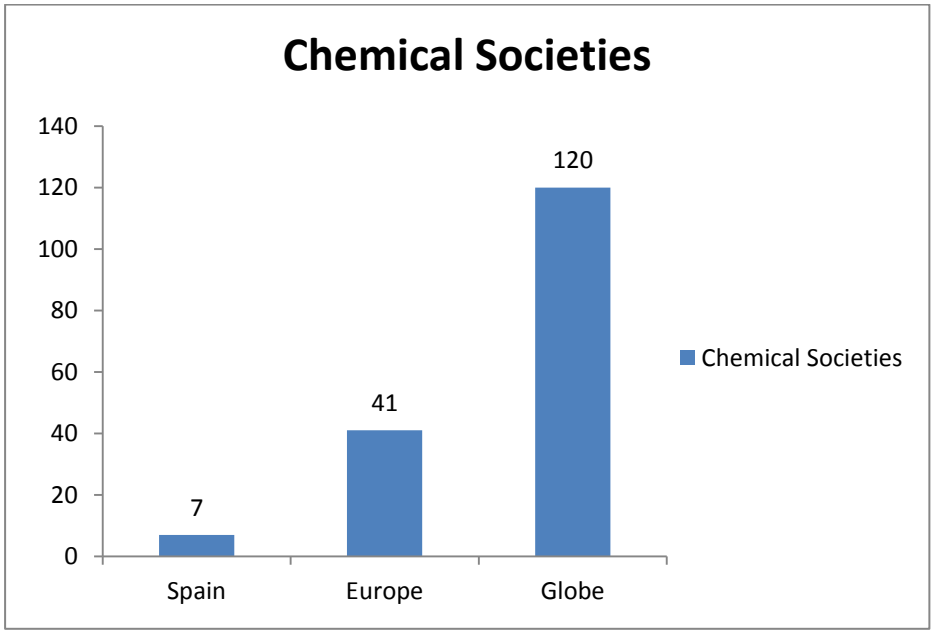
Spanish Catalysis Society

Spanish Society of Mass Spectrometry

Analytica Spanish Society of Chemistry

Catalan Chemistry Society

## Statistical Analysis of Chemical Societies:




## Top Chemical Industries across the globe:

BASF, Ludwigshafen, Germany

Sinopec, Beijing, China

Dow Chemical, Midland, USA

SABIC, Riyadh, Saudi Arabia

Royal Dutch Shell, The Hague, Netherlands

ExxonMobil, Irving, USA

Formosa Plastics, Taipei, Taiwan

Lyondell Basell, Houston, USA

DuPont, Wilmington, USA

Ineos, Rolle, Switzerland

Mitsubishi Chemical, Tokyo, Japan

Bayer, Leverkusen, Germany

LG Chem, Seoul, South Korea

Akzo Nobel, Amsterdam, Netherlands

Air Liquide, Paris, France

Mitsui Chemicals, Tokyo, Japan

The Linde Group, Munich, Germany

Reliance Industries, Mumbai, India

## Top Chemical Industries in Valencia, Spain:

Uquifa, Barcelona

Comercial Godo, SL, Barcelona

Tecnufar , Madrid

Panreac, Barcelona

Quimicas Merono, Cartagena Murcia

Catalysa S.L

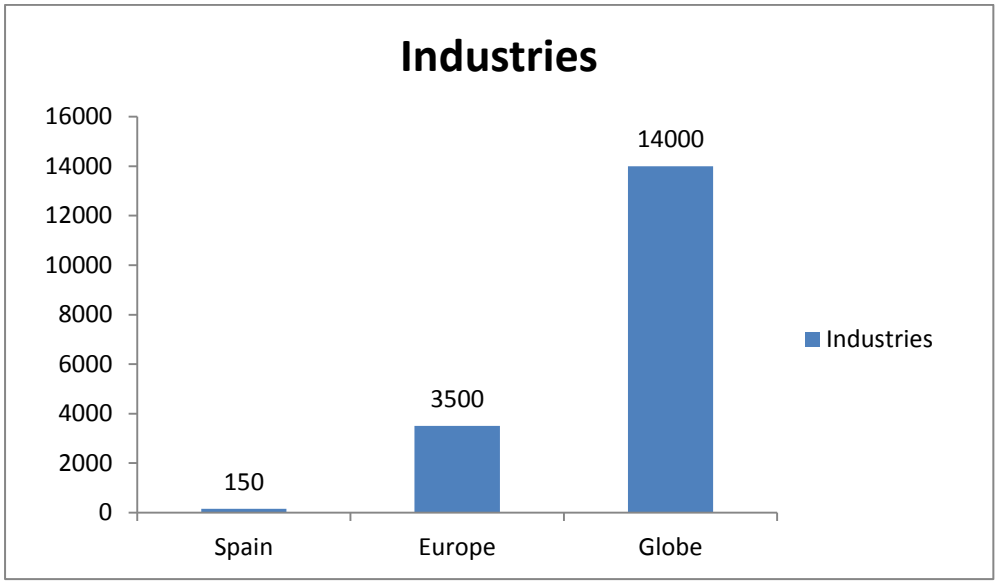
Global Quimia SL, Barcelona

Simar, Igualada

AAA Chemist, Valencia

Gadea Pharmaceutical Group, Boecillo Valladolid

## Statistical Analysis of Chemical Industries:




## Worldwide Top Chemical Universities:

Massachusetts Institute of Technology, United States

University of California, Berkeley, United States

University of Cambridge, United Kingdom

Harvard University, United States

Stanford University, United States

University of Oxford, United Kingdom

Swiss Federal Institute of Technology, Switzerland

California Institute of Technology, United States

The University of Tokyo, Japan

University of California, Los Angeles, United States

Imperial College London, United Kingdom

National University of Singapore, Singapore

## Top Spanish Chemical Universities:

University of Barcelona

Autonomous University of Madrid

University of Sevilla

University of Valencia

University of Cordoba

University of Granado

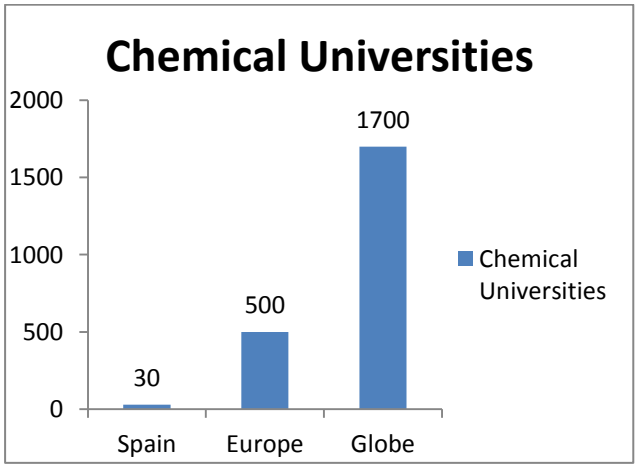
University of Navarra

Charles III University of Madrid

University of Alcala

University of the Balearic Islands

## Statistical Analysis of Chemical Universities:




## Global Market Value on Materials Chemistry:

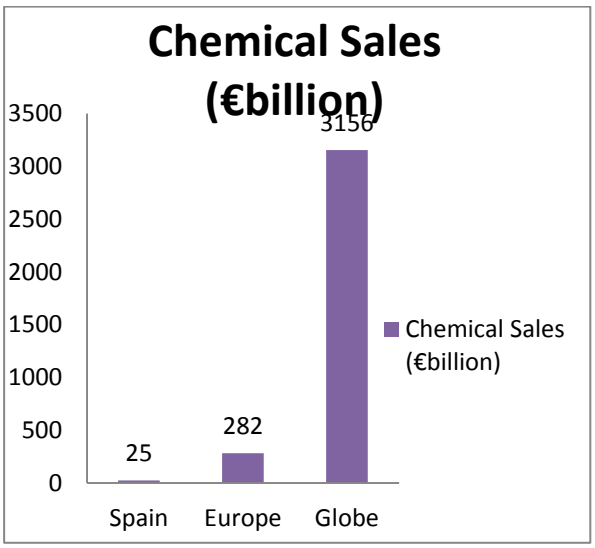
World chemicals turnover was valued at €3,156 billion in 2013. This marks a slow recovery of the chemical industry compared with 2012. Global sales grew by 2.4 per cent from €3,084 billion in 2012 to €3,156 billion in 2013.The sales growth rate was considerably lower compared to the 10 year trend, when average annual sales expanded by 10.3 per cent from

2003 to 2012.World chemicals sales in 2013 grew by nearly €73 billion compared with 2012, marking a modest recovery in the world chemical industry.

## Spanish Market value on Materials Chemistry:

The chemical sector has become the second largest exporter within the Spanish economy. In 2010, exports exceeded €25 billion, 24% more than in 2009, when sales to foreign markets already accounted for more than 40% of revenues. This industry is also a leader in R&D +I investments and environmental protection, accounting for 20% of national investments in this field. Companies based in Catalonia generate 44% of the country's total chemicals sales, followed by Madrid (16%), Valencia (8%), Andalusia (8%) and the Basque Country (4%).

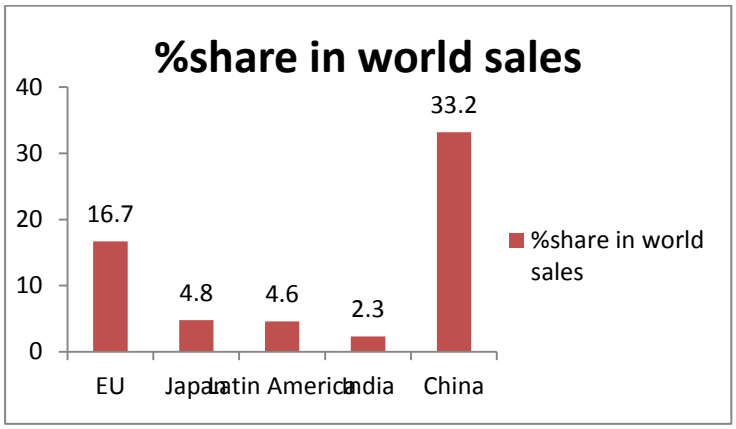
## Statistical Analysis of Chemical Sales:




## Worldwide Chemical Market Growth:

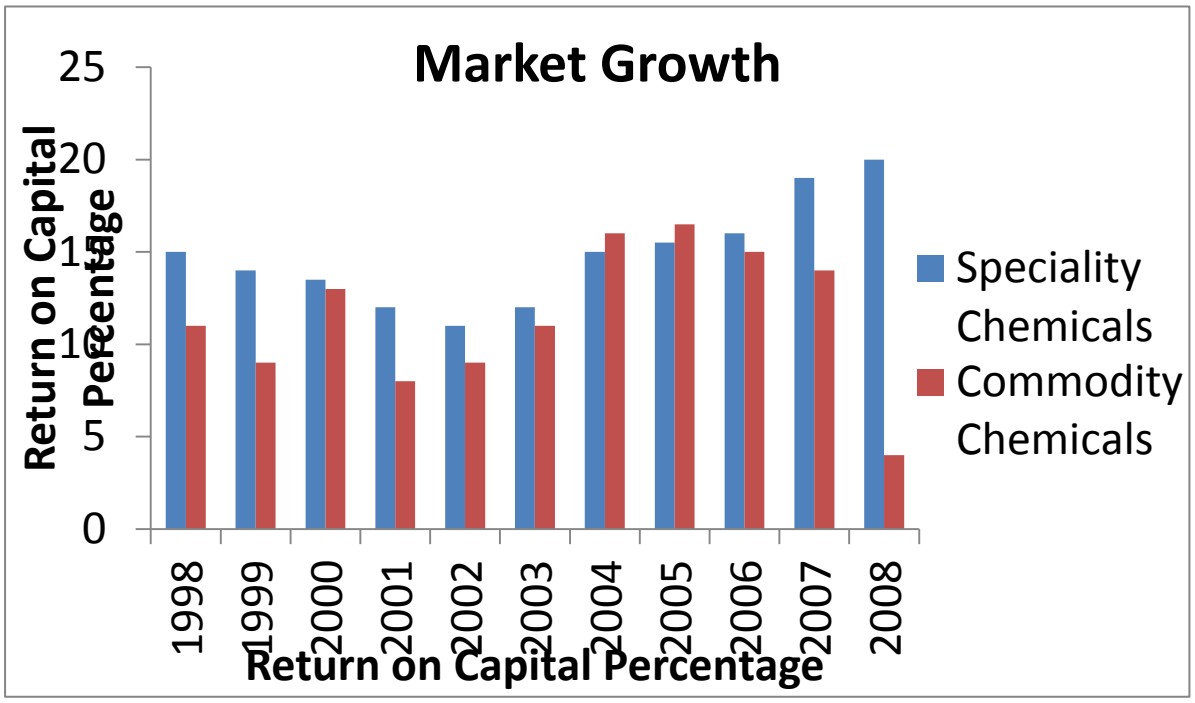
During the period from 2003 to 2013, the European Union gradually lost its top spot in world chemicals sales to China and the rest of Asia (excluding Japan). The EU contribution to world chemicals sales between 2003 and 2013 dropped by 14.5 percentage points from 31.2 per cent in 2003 to 16.7 per cent in 2013. The NAFTA contribution to world chemicals sales also decreased from 25.9 per cent in 2003 to 16.7 per cent in 2013. Japan showed a less pronounced decline of its chemicals sales contribution during the 11-year period. The total value of sales in the European Union has been continuously growing, but overall world chemicals sales have outpaced that rate of growth. World chemicals sales increased by 2.4 times in value terms in 2013 compared with 2003. China's share of world chemicals market sales in 2013 swelled to33.2 per cent, nearly a fourfold increase on 2003 when the country held an 8.7 per cent share. Taking advantage of emerging market opportunities will require

EU leadership in creating competitive framework conditions that enhance the global position of European chemicals.




## Market Growth before 10 years:

To gain deeper insights into the performance of the chemical industry, the analysis shows that the falling margins across sectors are a contributing factor, with the commodity chemicals sector experiencing the sharpest decline-19 percent between 1998 and 2008. Gross margin in the speciality chemicals sector fell 4.8 percent between 1998 and 2008.



## Market Growth in the Upcoming 10 years:

Since the mid-1980s, the global chemical industry has grown by 7 percent annually, reaching 2.4 trillion in 2010. Most of the growth in the past 25 years has been driven by Asia, which now owns almost half of global chemical sales. If current trends continue, global chemical markets are expected to grow an average 3 percent in the next 20 years, mostly pushed by the major players in Asia and the Middle East.

Sixty-six percent of global chemical sales in 2030 will be in Asia, according to current growth patterns. The rise of emerging players, especially in Asia and in the Middle East, has lead to the deconsolidation of the chemical industry.

## Chemical R&D Revenue:

The forecast for R&D growth in the chemical and advanced materials industry reflects the improving global economy and the key markets the industry serves. U.S. R&D spending in chemicals and advanced materials is forecast to grow by 3.6% to reach $12 billion in 2014. Overall global R&D is forecast to grow at a slightly higher 4.7% rate to $45 billion in 2014.The R&D activities within the chemical and advanced materials industry reflects improvements in the U.S. and global economy, and the role this industry plays in support of other demand-driven industries. We forecast U.S. chemical and advanced materials R&D to increase by 3.6% in 2014, reaching $12.2 billion. Worldwide R&D is expected to increase by 4.7% to $45.3 billion.