

Evdokia Patsilina
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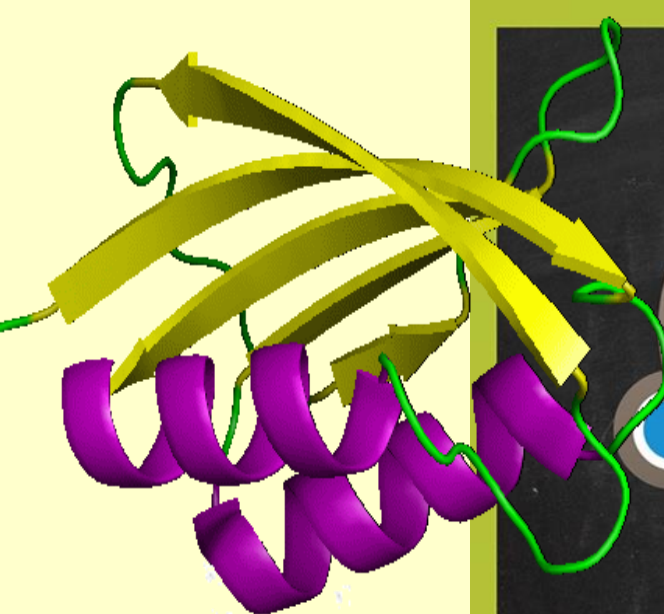
making science real

STEM across Europe: making it real

15 November 2016, London, UK.



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CHEMISTRY
CARD GAME!

chemistry WONDERLAND

Give the right answers
to most of the questions
to **WIN** a journey
to **Lightland**!!!



Which gas is instantly lethal:
A. CH_4 (methane)
B. CO_2 (carbon dioxide)
C. CO (carbon monoxide)

CARBON MONOXIDE (CO)
POISONING

CAN'T BE SEEN	CAN'T BE SMELLED	CAN'T BE HEARD	CAN BE STOPPED	

(c)



SUPER MARKET
of chemical elements



PETROCHEMICAL PLANT



UNIVERSITY

CHEMICAL LAKE



VOLCANO



SCIENTISTS' WAX MUSEUM



FIRE POINT



PHOTOCHEMISTRY POINT



ORGANIC CHEMISTRY LABORATORY



INORGANIC CHEMISTRY LABORATORY



PHYSICAL CHEMISTRY LABORATORY



CHEMICAL GARDEN



BOTANICAL GARDEN



ERUPTION POINT



RAINBOW



ERUPTION POINT



AURORA BOREALIS



ANALYTICAL CHEMISTRY LABORATORY



Great Chemists

Who was awarded with the Nobel Prize in Chemistry 1911?

Marie Curie
(1867-1934)



Additional information

The Nobel Prize in Chemistry 1911 was awarded to Marie Curie "in recognition of her services to the advancement of chemistry by the discovery of the elements Ra (radium) and Po (polonium), by the isolation of Ra and the study of the nature and compounds of this remarkable element".



Inorganic Chemistry

Which is the molecular formula for Potassium ferricyanide?

$K_3[Fe(CN)_6]$



Ferricyanide ion

Additional information

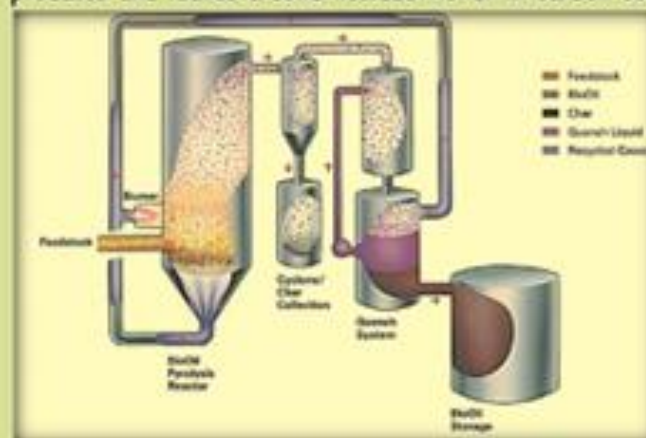
Potassium ferricyanide is the chemical compound with the formula $K_3[Fe(CN)_6]$. This bright red salt contains the octahedrally coordinated $[Fe(CN)_6]^{3-}$ ion. It is soluble in water and its solution shows some green-yellow fluorescence.



Organic Chemistry

What is pyrolysis of organic substances?

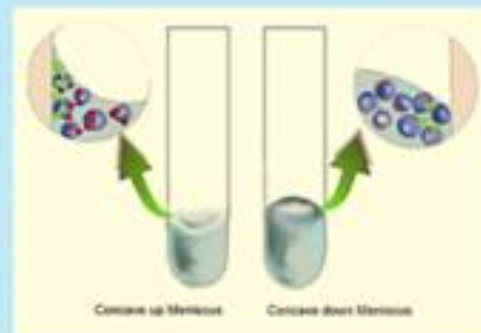
In general, pyrolysis of organic substances produces gas and liquid products and leaves a solid residue richer in carbon content.



Experimental Chemistry

Name two examples where the cohesive force dominates over the adhesive force and vice versa.

When cohesive force is stronger than the adhesive force: concave up meniscus, water forms droplets on surface. When adhesive force is stronger than the cohesive force: concave down meniscus, the surface is covered by the wetting agent, the last drops of liquid in the bottle always refuse to come out.





What is a reference standard?

A reference standard, or reference material, is a substance prepared for use as the standard in an assay, identification or purity test. It has a quality appropriate to its use.



Everyday Chemistry

What is a pigment?

A pigment is any of a group of compounds that are intensely colored and are used to color other materials.

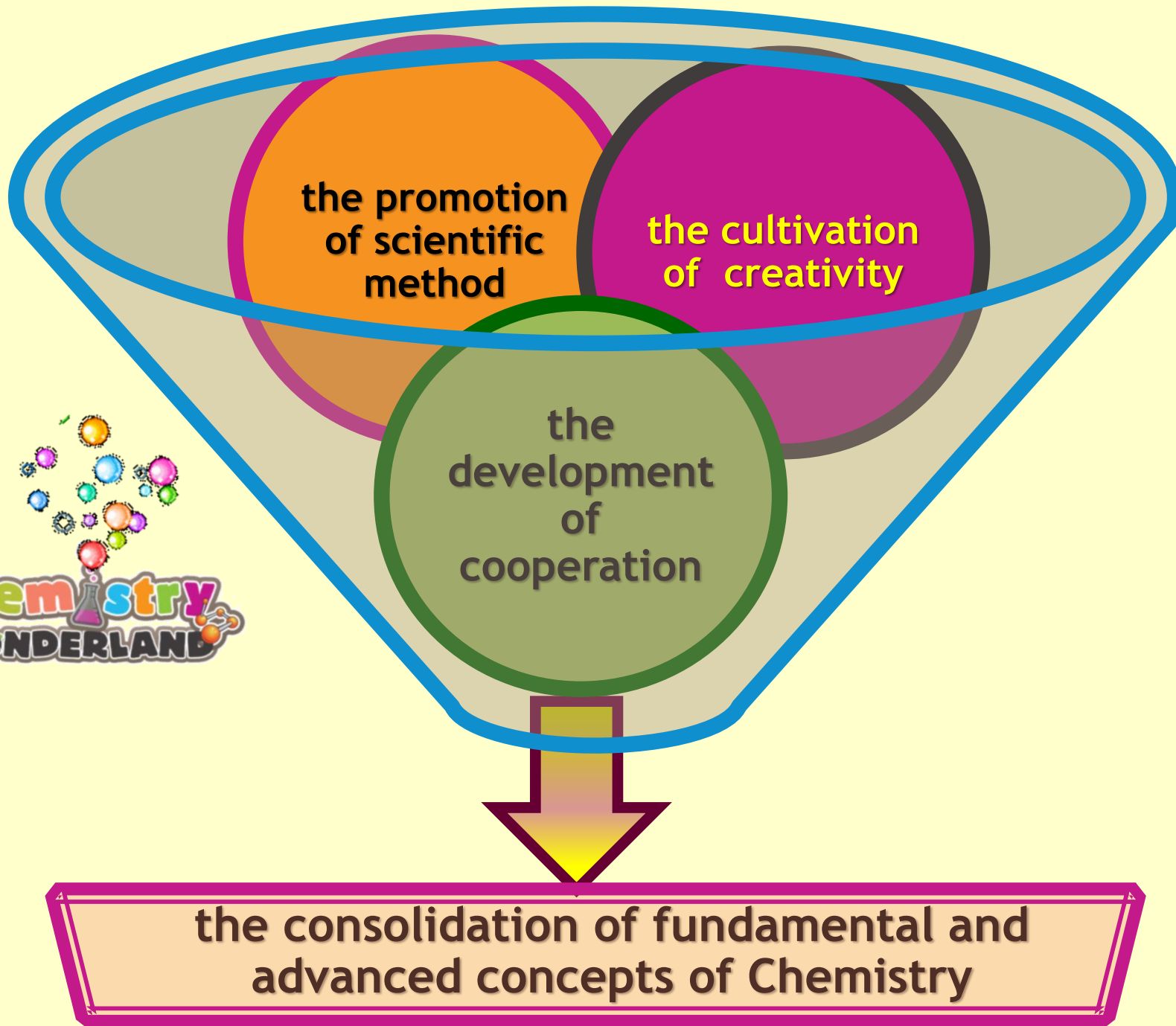


Additional information

A pigment is a material that changes the color of reflected or transmitted light as the result of wavelength-selective absorption. This physical process differs from fluorescence, phosphorescence, and other forms of luminescence, in which a material emits light.



The objectives
of this project
focus on:



the promotion
of scientific
method

the cultivation
of creativity

the
development
of
cooperation

the consolidation of fundamental and
advanced concepts of Chemistry



question

What is a pigment?

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answer

Additional information

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additional
information



Strategic
planning:



Definition of issues to study.



Identification of learning objectives.



Development of a method of guided discovery.



Enabling creative thinking.



Creating a database to recall knowledge from the past and from the experience of everyday life.



Relating the subject to the real world and to the personal experiences of each student.



Student evaluation.



Subject
identity:



Basic concepts about Chemistry



Advanced Level Chemistry



History of Chemistry



Chemistry experiments



Basic knowledge of several areas of Chemistry



Basic concepts about light



Chemistry and life



Conclusions:




It's an endless game that is always in progress.



It has been created by the interaction between teacher and learners.



It is directly connected to experiment.



The participants are actively involved in the whole procedure.



Through this method both teachers and students improve.



It is the result/outcome of a 25-year teaching experience.



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Thank you



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