



## Chemical Society Annual Report to the EuCheMS Division of Chemical Education for 2015-2016

### 1. Abstract

In 2015-2016 the *Division of Chemical Education and Dissemination* of the *Portuguese Chemical Society*, carried out a set of activities, including outreach activities, aiming to promote the chemistry's teaching and learning. These main activities are mentioned in this report. As an overview it is possible to underline the regular and institutional cooperation with Portuguese Ministry of Education; the organization of the *XXIV National Conference of Chemistry Portuguese Society* and the *VI Conference of the Division of Chemical Education and Dissemination*; the *Chemistry Olympiads* and the publication of the national study about the use of educational multimedia in the teaching of sciences in Portugal.

### 2. National educational policy

#### ***Institutional Cooperation - Ministry of Education***

The University 1<sup>o</sup> (BSc), 2<sup>o</sup> (master) and 3<sup>o</sup> (PhD) cycles must apply for the accreditation of a National Institution A3ES (*Agência de Avaliação e Acreditação do Ensino Superior*) devoted to perform the evaluation and accreditation of all the studies programmes of Higher Education. 2015 was the year devoted to the Chemistry and related areas cycles of study, namely Chemistry, Biochemistry, Biotechnology and Chemical Engineering. Almost all courses were accredited for the next 6 years.

The period 2015-16 is the last year of implementation of the "curriculum goals" ([http://www.dge.mec.pt/sites/default/files/ficheiros/eb\\_cfg\\_metas\\_curriculares\\_3c\\_0.pdf](http://www.dge.mec.pt/sites/default/files/ficheiros/eb_cfg_metas_curriculares_3c_0.pdf)) document (in Portuguese), which is now mandatory not only for the 7<sup>th</sup> and 8<sup>th</sup> (2014-15) but also for the 9<sup>th</sup> grade.

At High School level the new "curriculum goals" are implemented as a wave front being mandatory for the 10<sup>th</sup> grade this year and in 2016-17 for the 11<sup>th</sup> grade.

Between the 7<sup>th</sup> and 11<sup>th</sup> grade Chemistry is thought together with Physics becoming a separate course only in the 12<sup>th</sup> grade but the "Curriculum goals" will not be mandatory until 2017-18.

This year (July/2016) 49000 students took the final examination in Physics and Chemistry to gain access to Higher School Institutions with the average scores increasing by 11.4% as compared with last year (July/2015).



Keeping the commitment started in 2010, the Portuguese Chemical Society continued to integrate the Consultative Committee of the IAVE (Institute for Educational Evaluation), taking part in regular meetings with the National Examinations Commission where are prepared and emitted assessments of curricula and programs, among other matters. The *Portuguese Chemical Society* representative at the Scientific Council of the IAVE, Doctor João Paulo Leal, held its Presidency during 2014-2016.

### 3. Events in chemical education

#### ***XXIV National Conference of Chemistry Portuguese Society***

##### ***VI Conference of the Division of Chemical Education and Dissemination; 1-3 July 2015***

The XXIV *National Conference of the Portuguese Chemical Society* (XXIV ENSPQ) was held at the Chemistry Department of the University of Coimbra with 350 participants. The Conference theme was *Chemistry for Sustainable Development*. During the XXIV ENSPQ was held the VI *Conference of Division of Chemical Education and Dissemination*. This conference worked like a teacher's training course for teachers in the basic and secondary schools, contributing to the scientific and didactic updating of the teaching staff (<http://xxivenspq.eventos.chemistry.pt/>).

##### ***5<sup>th</sup> Conference of Physics and Chemistry teachers***

The *Portuguese Physics Society* organized in 2015 the 5<sup>th</sup> *Conference of Physics and Chemistry teachers* at FCT-UNL (New University of Lisbon), which was sponsored by *Portuguese Chemical Society* (<https://eventos.spf.pt/5enpfg/pt/>).

##### ***XVI National Meeting for Education in Sciences***

The *Education Institute of Lisbon University* organized the XVI *National Meeting for Education in Sciences* dedicated to the theme *Science as a source of culture* ([http://www.ie.ulisboa.pt/portal/page?\\_pageid=406,1855098&\\_dad=portal&\\_schema=PORTAL](http://www.ie.ulisboa.pt/portal/page?_pageid=406,1855098&_dad=portal&_schema=PORTAL)).

##### ***I and II Meeting in Sciences Teaching and Dissemination***

In 2015 and 2016 took place at the Sciences Faculty of Porto University, respectively, the I and II Meeting in Sciences Teaching and Dissemination involving among others the *Portuguese Chemical Society* representatives at EuCheMS Carla Morais and João Paiva (<http://eedc.fc.up.pt/>)

##### ***Meeting for Physics and Chemistry teachers***

The António Damásio Secondary School organized with the publishing company Porto Editora a *Meeting for Physics and Chemistry teachers* (<http://www.esad.edu.pt/index.php/images?id=371>)



#### 4. Activities of the National Chemical Society

##### ***Chemistry Olympiads***

The *Portuguese Chemistry Olympiads*, also known as *Chemistry Olympiads* has been organized by the *Portuguese Society of Chemistry* (<http://olimpiadas.chemistry.pt>). It is a competition where students, from middle and secondary schools, need to be able to solve theoretical and practical problems of Chemistry. The objectives of these *Chemistry Olympiads* are: a) stimulate the study and teaching of Chemistry; b) provide a closer approach between schools and universities; c) generate interest in chemistry among students, disseminate chemistry as science and attract vocations to scientific and technological careers. Currently the *Chemistry Olympiads* include three types:

1. *Chemistry Olympiads Plus* – directed to secondary education;
2. *Chemistry Olympiads Junior* – directed to basic education;
3. *International Chemistry Olympiads (IChO)*, the *Latin American Chemistry Olympiads (OIAQ)* and the *European Science Olympiads (EUSO)* – international competitions in which the *Portuguese Society of Chemistry* ensures the representation of Portugal.

##### ***Salt Science Project: pedagogical dissemination***

The *Portuguese Society of Chemistry* joined the project *Salt Science* (<http://sal.spq.pt>) inspired by a chemical compound as common as salt - "sodium chloride" - and contributed to its pedagogical dissemination.

##### ***ChemRus – 2015-16***

The *Young Chemists Group (GQJ)* of the *Portuguese Chemical Society* has held the *ChemRus* competition targeted for students up to 12<sup>th</sup> grade, which aimed to promote the interest for chemistry by developing a video about a chemistry experiment

(2015 edition - <http://gqi.spq.pt/?setLn=en#chemrusModal2015>)

(2016 edition - <http://gqi.spq.pt/?setLn=en#chemrusModal2016>)

##### ***Meetings organization***

The *Portuguese Chemical Society* organized in 2016 these international meetings: XVI-COLACRO, EYCheM, 11ICC, the joint French-Portuguese NMR conference, the XXII Luso-



Galego Chemistry Meeting. The *Portuguese Chemical Society* also organized several meetings of its Scientific Divisions

## 5. Publications

### ***Boletim of Chemistry***

There are no publications in English. The *Portuguese Chemical Society* publishes *Boletim of Chemistry*, (ISSN 0870-1180), a trimestral magazine with news from the society and publishing popular science articles, some scientific articles on specific subject and also articles devoted to chemical education and to help teachers from the secondary school. The *Boletim of Chemistry* was distributed free of charge to members of the *Portuguese Society of Chemistry* and shared with some international and national associations. The average print run was 1500 copies. The volumes are available electronically to the general public through the portal of the Portuguese Society of Chemistry (<http://www.spq.pt/magazines/bspq>).

The *Portuguese Chemical Society* is co-owner of ChemPubSoc Europe which are responsible for the publication of several journals.

### ***Study about the use of educational multimedia in the teaching of sciences in Portugal***

The *Division of Chemical Education and Dissemination* of the *Portuguese Chemical Society* joined the *Foundation Francisco Manuel dos Santos* in order to carry out a study about the use of educational multimedia in the teaching of sciences in Portugal (2010-2015). The project was coordinated by João Paiva and Carla Morais, professors of the University of Porto. Study site: <http://spq-ffms.spq.pt>

## 6. Liaison with the chemical industry

***Salt Science Project*** – previously mentioned in point 4 of this report.

## 7. International and European initiatives

***Chemistry Olympiads (IChO), Latin American Chemistry Olympiads (OIAQ) and European Science Olympiads (EUSO)*** – previously mentioned in point 4 of this report.

Portugal will host the EUSO in 2019.

## 8. Other events and activities

### ***Grants to support the undergraduate students in Chemistry***

In the academic year 2015-16, the *Portuguese Chemical Society* opened a call in order to fund five grants per Chemistry degree available in Portugal, with the value of the annual fee (for each university), in total of 30 grants. The *Portuguese Chemical Society* has taken this initiative with the expectation that the chemistry departments of the involved



universities can contribute to this initiative, in particular by funding five grants each, for a total of 10 grants per university. The University of Coimbra, the University of Lisbon and the New University of Lisbon have joined to this initiative.

#### 9. Name of delegate and deputy

**Delegate** – Carla Morais

**Deputy** – João Paiva

#### 10. Contact details of delegates

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#### 11. CV of delegate

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