

## LibreEOL and G-Lorep Training and Coaching event

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### AIMS OF THE EVENT

The training and coaching event following the TC coordinators meeting was devoted to the illustration of the consolidated features of both the LibreEOL and the G-Lorep tools. In addition details were given of more recent EChemTest® evolutions focusing on reporting and educational support materials. The present report refers for the consolidated features of EChemTest® to the related existing official sites (<https://echemtest.libreeol.org/> and <https://glorep.unipg.it/>) while dealing in some detail with more recent evolutions.

### LibreEOL ACHIEVEMENTS

The most recent advances of LibreEOL are related to the software developments, the consolidation of the Proficiency Certificates, the deployment of the demo Tests, the dissemination initiatives and the possibility of offering EChemTest® to non ECTN members.

#### LibreEOL developments

The rendering part of the various views on data has been rewritten and we have achieved a terrific increase in performance. Furthermore, to access the system it is now necessary to accept the ECTN Privacy Policy, as shown in Figure 1, to be compliant with GRPR.

#### Proficiency Certificates

The Proficiency Certificates, as agreed during the Training Event, can be delivered only if the exam has been deployed using the EchemTest setting. The definition of Settings has been limited only to Teachers. The Examiners may only access the Settings for defining an Exam session, but cannot modify them.

#### Demo Tests

The Demo Tests are now available to the students. When the Student login into the system will see the list of available Exam Sessions and, at the End, the submenu *Demo Tests*. Clicking on the

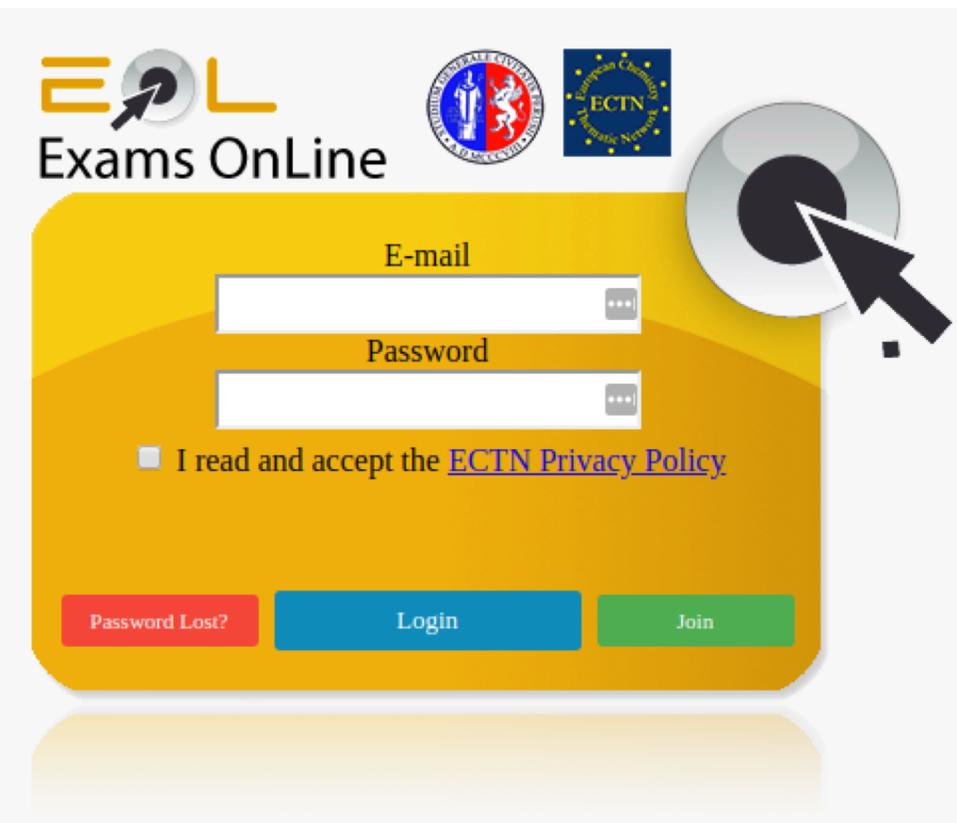


Figure 1: Echemtest Login prompt, GDPR compliant.

submenu the list of the Demo Tests available in English and in her/his language will be shown. The Demo Tests can be performed as often as you wish, and they will look always the same.

## **Dissemination initiatives**

The Dissemination Initiatives are related mainly to the Chemistry for Everyday Life (CEL), in particular during the EChemTest Workshop, reported separately in the present Newsletter, a contest has been carried out by some participants.

## **Deploying EChemTest<sup>®</sup> to non-ECTN members**

The possibility of offering EChemTest<sup>®</sup> to non-ECTN members has been made possible thanks to the adoption of the Prosumer model (the most important example is the attempt to extend its usage to EuChemS) that is commented here in some detail.

A central feature of the model is the mechanism supported by the Chem-Learn portal of the Master-Up Agency assigning Academic Debts/Credits (D/C) to the Test Centres (TC) running the Self Evaluation Sessions (SES)s. This feature is managed by the electronic form given in Figure 2.

Upload Data for Sessions done by your NTC/ATS

Number of own sessions to add (if any): : <number of sessions>

Sessions to add done on behalf of other ECTN Member (if any): : <number of sessions>  
<institution name, 50 chars max.>

External sessions to add done on behalf of ECTN (if any): : <number of sessions>  
<event's title, 50 chars max.>

Other Contributions (if any): : <number of credits>  
<short description, 100 chars max.>

Figure 2: A partial screenshot of the e-form managing the input of D/C data for TC SESs

The analysis of data collected through the online forms leads to Debts when a TC runs SESs for its own institution and to Credits when it runs services (including SESs) for third parties (including ECTN itself, a different TC, an ECTN agency and an ECTN member). Debts in excess to Credits can be offset either by paying the corresponding amount, or by compensating them with net gains (if any), or by spending the corresponding sum for ECTN activities (like traveling to General Assembly, participating to work group meeting, etc.) after specifically planning and agreeing it in advance with ECTN or having included it in an already approved project. Excess Credits can be set aside for offsetting next year Debts (upon agreement with VEC).

## **G-Lorep ACHIEVEMENTS**

The work carried out on G-Lorep and distributed repository activities on chemical knowledge during the year 2018 focused on adding some functions on both user and admin interfaces.

### **Multimedia LOs**

In particular, new features and contents were developed for the use of Multimedia Learning Objects. A set of LOs designed for the “Mechanisms and Dynamics of Chemical Reactions” (MDCR) course were developed. As shown in Figure 3, introductory information on the course, details on

book [1] (see also <http://services.chm.unipg.it/ojs/index.php/virtlcomm/article/view/207>), examples of the Learning Objects (LO)s produced in collaboration with the Multimedia Centre of the University of Perugia were made accessible at the University of Perugia G-Lorep address.

The screenshot displays the G-Lorep repository interface. At the top, there is a blue header with the logo and the text 'glorep.unipg.it'. Below the header, there is a search bar and a navigation menu. The main content area shows a Learning Object (LO) titled 'Chemical Reactions: basic theory and computing'. The LO is submitted by Laganà on Tue, 04/17/2018 - 22:49. The LO is a 'Linkable Object General' with the following details:

- Title:** Chemical Reactions: basic theory and computing
- Description:** The course we discuss here, Chemical Reactions: basic theory and computing written by Gregory .A. Parker and myself, has been designed to help the students of the European Erasmus Mundus Master in "Theoretical Chemistry and Computational Modelling" (TCCM) to familiarize with both theoretical methods and computational techniques useful to handle the treatment of chemical reactive processes at microscopic level. The general scheme of the book is illustrated by the Learning Object (LO) L000. In it the reader is driven to disentangle elementary events out of the kinetics of complex systems in which reactive and non-reactive processes combine and compete in different ways depending on the interactions and moments of the involved species. Then theoretical and computational techniques for dealing with two-, three-, four- and many-body collisions are discussed (by leveraging preferentially elementary gas phase processes) and out of the obtained detailed microscopic information complexity is regained in order to extend the treatment to very large systems by introducing the necessary approximations, using the appropriate experimental and computational apparatuses with specific reference to Open Science approaches
- Author(s):** Antonio Laganà
- Language:** en
- Structure:** linear

Below the LO details, there is a slide titled 'CHEMICAL REACTIONS: basic theory and computing'. The slide lists the following topics:

- From chemical reactions to elementary processes: the H<sub>2</sub> combustion
- Thermal rate coefficients k(T): experimental measurements and transition state theory
- State to state cross sections and two body collision experiments
- The crossed beam machine
- Quantum and classical mechanics
- Back to complexity and distributed computing

Figura 3: Screenshot of the book introductory page and of the related first slide

In order to facilitate access, the LO video was put into a private youtube location. The files stores given in the Glorep repository are only links to the youtube videos.

### **Interaction of G-Lorep with Moodle**

In order to increase the links between the platforms Moodle and G-Lorep a new plugin Linkglorep was implemented and installed in Moodle to the end of adding a new button to the editor for creating quiz questions. A download count module (supplementary to Drupal core) was also installed in order to hold trace of the downloaded files from the G-Lorep federation. For this reason some view using graphics and tables in which the downloaded files are reported were added to the administrator dashboard.

### REFERENCES

1) A. Laganà, G.A. Parker, Chemical Reactions Basic Theory and Computing, Springer International Publishing 2018; ISBN 978-3-319-62355-9