LiLa – Library of Labs
Remote and Virtual Laboratories for Natural Sciences and Engineering

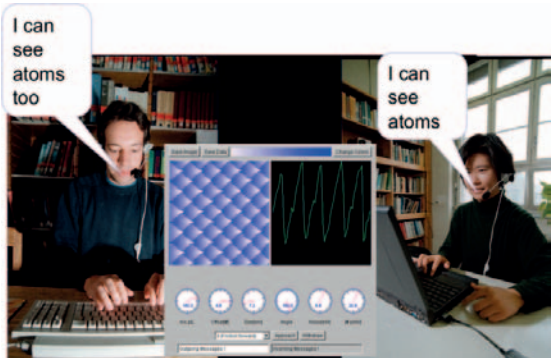
- Do your students need more convenient access to lab experiments?
- Would they benefit from „virtual“ mobility within the Bologna process?
- Would you like to have access to important experiments you can’t provide locally (e.g. with real radioactive sources)?
- Do you want to have a comprehensive and attractive variety of remote and virtual labs for your students?
- Would you profit from exchanging access to remote or virtual labs with other institutions all over the EU?
- Do you have remotely controlled laboratories that you would like to make known across Europe and beyond?

If you can answer YES to any of these questions, you should find out more about the services offered by LiLa.

The LiLa portal at www.library-of-labs.org will grant access to virtual labs (simulation environments) and remote experiments (real laboratories which are controlled remotely via the internet).
It includes services like
- a booking system,
- a connection to library resources,
- tutoring functionalities,
- a 3-D environment for online collaboration.

Moreover, LiLa creates an organisational framework for the exchange of experiments between institutions and for the access to experimental setups. LiLa’s primary target groups are university teachers and their students in undergraduate and graduate classes within natural sciences and engineering.

Find out more at www.lila-project.org or join the LiLa conference on 11-12 April 2011 in Cambridge!



Members of the LiLa Consortium

- Universität Stuttgart (Computing Center & University Library), Germany
- Technische Universität Berlin, Germany
- Sun Microsystems GmbH, Germany
- Technische Universiteit Delft, Netherlands
- Linköping University, Sweden
- Universität Basel, Switzerland
- Universidad Politécnica de Madrid, Spain
- Aristoteleio Panepistimo Thessalonikis, Greece
- University of Cambridge, United Kingdom
- Computational Modelling Cambridge Ltd., United Kingdom
- MathCore Engineering AB, Sweden

Contact LiLa / Join LiLa
The LiLa Project is open to new partners!

If you would like to find out more about LiLa, feel free to contact us:

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Subscribe to the LiLa newsletter at www.lila-project.org

LiLa
Library of Labs

Remote and Virtual Laboratories for Natural Sciences and Engineering

A European initiative of eight universities and three enterprises for the mutual exchange and dissemination of virtual laboratories and remote experiments.

co-funded by the Community Programme *eContentplus*

Labs within LiLa

OpenModelica (Linköping University)

OpenModelica is an open source Modelica-based modeling and simulation environment for use in industry and academia. The purpose of the OpenModelica release is to provide a comprehensive modeling, compilation and simulation environment based on free software, which can be distributed in binary and source code form for research, teaching, and industrial usage.

www.openmodelica.org

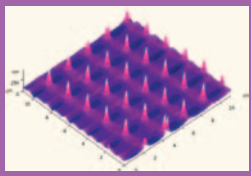
Weblabs (University of Cambridge)

The Cambridge WebLabs use state-of-the-art Siemens automation hardware and an industrial interface to control bench-scale chemical processes. Almost any PC with an internet connection can be used to give students a glimpse of how a new generation of industrial processes is being operated. Development of the Weblabs' capabilities is ongoing, but two experiments have been designed so far. The first looks at the effect of poor mixing on reactant conversion. The second investigates the response of a well-mixed reactor to different control systems. The Weblabs have been used successfully by MIT in the USA as well as several institutions in the UK.

www.lila-project.org/content/ucam

Nanotechnology Remote Lab (Aristotle University of Thessaloniki)

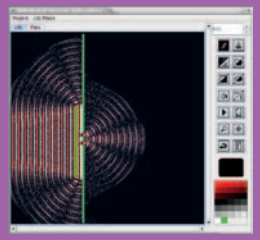
The Nanotechnology Remote Lab (NRL) of the Physics Department, Aristotle University of Thessaloniki consists of Scanning Probe Microscopy remote experiments based on the NanoEducator platform (NT-MDT Co.). The NRL aims to introduce undergraduate and postgraduate students coming from different disciplines, such as physics, chemistry, engineering, biology and medicine, to Nanoscience and Nanotechnology experimental methods, tools & phenomena via special Atomic Force Microscopy, Scanning Tunneling Microscopy and Force Nanolithography course materials & experiments.



nrl.physics.auth.gr

VideoEasel (University of Stuttgart)

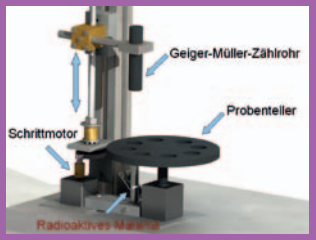
Refraction of planar waves on a double slit in a virtual experiment – just one of over 50 experiments offered by the virtual laboratory in Stuttgart.



www.lila-project.org/content/ustutt/

Remote Farm (TU Berlin)

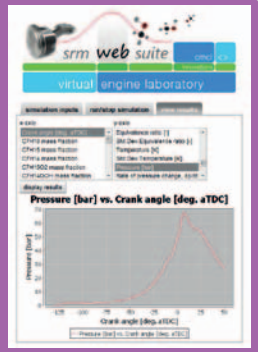
In Berlin, remote experiments are used in undergraduate engineering courses. In our online practical courses with remote experiments the participants study the fundamentals of physical phenomena with live experiments. The picture shows a schematic view of the radioactivity setup. This setup enables people who are not able to handle real radioactive sources, to perform the experiment from any web browser in the world.



www.lila-project.org/content/tuberlin

srm websuite (CMCL)

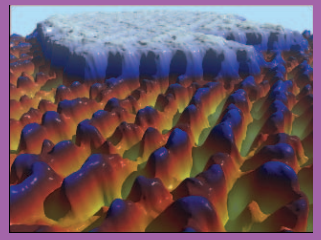
The srm websuite is a series of virtual labs designed to gain insight into fuels, combustion and emissions in conventional and next generation internal combustion engines. The simulations in the srm websuite use the same technology as cmcl's srm suite adopted by engine manufacturers to improve engine performance and emissions. The virtual lab provides a web-interface for running simulations on cmcl's simulation servers, allowing students to perform the virtual labs from almost anywhere, including on smartphones and other mobile devices. Using a "Mash-up" of supporting materials including video clips, animations, articles, and assessment exercises, the srm websuite offers an engaging and up-to-date experience to its users in academia and industry.



www.lila-project.org/content/cmcl

Nanoworld (Universität Basel)

The Virtual Nanoscience Laboratory of the University of Basel consists of virtual and remote experiments, collaborative 3D visualization tools, interactive game-based learning methods, and an infrastructure that offers mobile access to remote and virtual experiments. Hands-on examples, course materials, and simulations give an insight into the methods of Nanoscience and nanotechnology for undergraduate students of different disciplines such as physics, biology, and chemistry. The NanoSimulator, a simulator for learning the basics of atomic force field microscopes, is based on five virtual experiments using the raster scanning method.



www.lila-project.org/content/ubas

OpenWonderland

OpenWonderland is a 100% Java open source toolkit for creating collaborative 3D virtual worlds. Within these worlds, students and teachers can communicate with high-fidelity, immersive audio, share live desktop applications and documents and conduct remote experiments. OpenWonderland is completely extensible; developers and graphic artists can extend its functionality to create entirely new worlds and add new features to existing worlds.

openwonderland.org