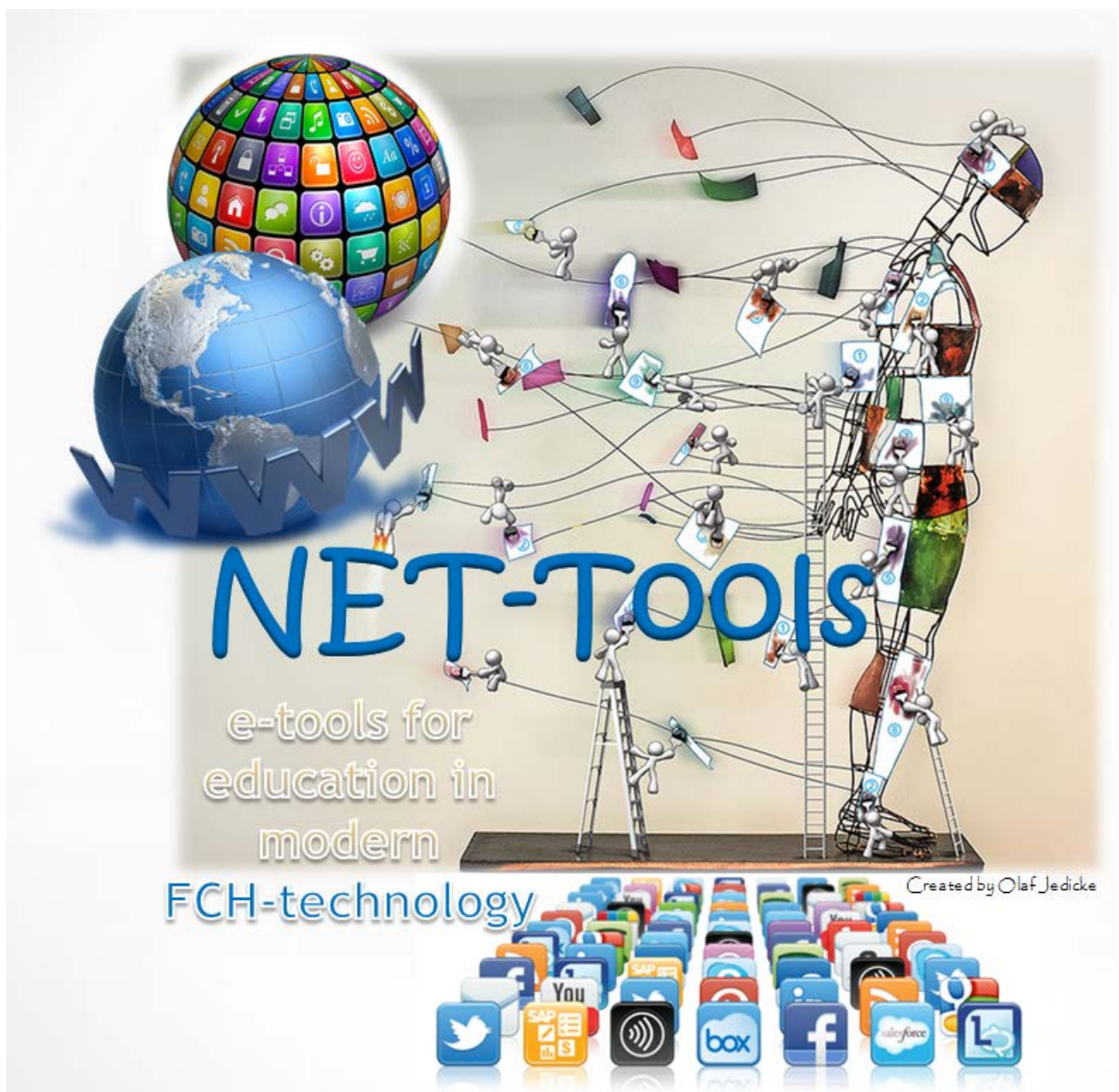


Novel Education and Training Tools based on digital applications related to hydrogen and fuel cell technologies

Deliverable



D5.4: Expert Workshop

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1 Expert Workshop

1.1 Introduction

The Expert Workshop is one of major deliverable of the project and aims to share with the stakeholder community the objectives and the preliminary activities of NET-Tools especially concerning the development of e-Laboratory and e-Learning. In details, as described in the project's Description of Action (DoA):

...discussion with the FCH community will be carried out during the whole project duration. The interaction will be initiated by organizing an international expert workshop at early stage to obtain most benefit from the feedback arising from industry and academia. The aim of the task is to ensure that NET-Tools deliverables, i.e. educational materials and content of e-tools will be of definite practical use. Key issues to discuss will include:

- *confirmation of the topic areas to be included within the educational materials (e.g. fuel cells (all kind), hydrogen production technology, storage materials and technology, safety aspects, etc.)*
- *quantitative measures that are used to develop educational materials of high quality*
- *availability of existing educational materials and especially experimental data for inclusion in WP 3 and WP4 for further processing*
- *ensure in general the practical relevance of the educational materials to students, technicians, engineers and also to lecturers*

On this basis and in line with the planned activities, potential participants addressed and invited to the workshop were from:

- *academia, companies that have access to relevant data, industry and university teaching staff*
- *at least sixteen internationally recognized specialists in the field selected from the FCH community (e.g. Hydrogen Europe and Hydrogen Europe Research) who have an interest in developing educational materials*
- *participants from other related FCH projects will be also invited to benefit from their specific knowledge*

The work shop took place at “Levico Terme” in Italy at 19th to 20th of March 2018. Eighteen international experts mostly from industry followed the invitation to be an active part of the work shop. Twelve consortium members participated to the workshop to present the specific project activities and support the work shop by leading tasks and practical discussions.

The present deliverable is completed by:

- Workshop short summary and list of actions
- Workshop agenda
- Workshop list of attendees
- Analysis of questionnaires
- Images of the event



1.2 Workshop Summary and List of Actions

1.2.1 General introduction and conclusions

The workshop was executed on March 19th and 20th in Levico Terme, Italy. 18 external attendees registered to the workshop of which 2 couldn't participate due to weather reasons and cancel flights. 16 external experts plus 12 internal attendees (from project consortium) started into a fruitful discussions regarding the necessities and demands of e-tools and e-learning related to FCH technologies. The workshop was introduced by different presentations on the project status of NET-Tools, its already developed e-tools and further planning regarding the development of the e-Laboratory and e-Learning part.

The workshop was organised to ensure that the FCH community can provide advice and suggestions to the NET-Tools project partners in the early phase of the project as a first list of demands and point of views. However, due to the more or less "fixed" planning restricted by DoA, the list of demands and suggestions will get taken into account as far as possible but will especially influence the ongoing of NET-Tools at all. The final objective of this workshop was for the project to:

- engages with and gains traction from the wider FCH community concerning the further development of digital educational content
- incorporate the needs from stakeholders others than the academics already involved, which have formed the basis of the work to date

To raise efficiency, participants became instructed beforehand to provide their impressions, remarks, comments and general feedback. Objectives tackled were among other things:

- feedback on already developed e-Tools (e.g. user-friendliness) and further development required (e.g. improvement, additional areas to be covered)
- highlight the needs of industrial stakeholders (e.g. thematic areas, educational materials, demands on training and education courses)
- confirm the e-tools selected to be used for the development of educational materials
- clarify what existing educational materials and especially experimental data could be available for inclusion in further processing and activities
- comment generally on the business proposition

To support the workshop in front of the event, the invited participants received a link to the server to investigate and test already developed e-tools. This

The feedbacks received during the workshop are sorted in the following sections: e-laboratory and e-learning. Overall, the project was well received and participants expressed interest in supporting the development of the platform as well as providing content and creating partnerships. This is compiled in the table below [table 1].

Table 1: Interests of stakeholders in using the NET-Tools platform and contributing to the NET-Tools platform

Types of Users	e-laboratory	e-learning
academics (researchers, teachers, students)	Use for development of own activities	Both
education specialist (excluding academics)	Use as is	Use as is
small specialist industry	Use as is	Both
large specialist industry	Both	Both
non specialist industry	Use as is	Use as is
regional / sector	/	Use as is



associations		
Types of Contributors	e-laboratory	e-learning
academics (researchers, teachers, students)	Peer reviewing	Provide Materials / Develop bespoke new materials (Main contributor)
education specialist (excluding academics)	/	Provide Materials / Develop bespoke new materials (Main contributor)
small specialist industry	Peer reviewing / Develop bespoke new tools	Provide Materials / Develop bespoke new materials (Minor contributor)
large specialist industry	Peer reviewing / Develop bespoke new tools	Provide Materials / Develop bespoke new materials (Minor contributor)
non specialists industry	/	/
regional / sector associations	/	/

The NET-Tools consortium intend to reflect on the proposed improvements following the workshop and following a continuous improvement process during the course of the project for implementing feedback received from the workshop participants but also, in the future, from the wider FCH community to obtain feedback from a community of users and experts:

- initially and following the workshop via questionnaires that will be shared via a newsletter to be distributed especially to the attendees but also to the FCH community
- via hands-on session and further technical schools (invitations to the technical school will also be shared by the newsletter)
- the expert community will be invited to get in touch bilaterally if they are interested by collaboration either to provide materials into the platform or for sponsorship opportunities

1.2.2 Outcomes to the e-Laboratory (e-Tools)

The e-Laboratory is subdivided into two major categories, the e-Engineering and the e-Science toolboxes which include up to 33 different e-Tools addressing different FCH topics from safety to basic science.

Specifically the e-Engineering toolbox includes already existing and new validated models and tools for FCH engineering. It is a valuable toolbox not only for to support practically education, yet for pre-design of FCH systems and infrastructure, new experiments and structures of operational platforms.

The e-Science toolbox is the second component of the e-Laboratory, which bridges the cutting-edge research in FCH technologies with academic research-led education and industrial professional engineering design using basic physical laws and contemporary CFD tools. For example, numerical experiments with thoroughly validated CFD tools are able in many cases to substitute expensive and hazardous field tests. Research students can do numerical experiments as a part of their post-graduate or doctoral studies using e-Science.

The general voice of the workshop was dominated by the interests to develop both further, the general e-platform (to add more e-tools to the e-Laboratory) and the single e-tools. The received feedback from external attendees helped the consortium to understand the general demands of industry as well as academia which differs related to the usage. The feedback from advisors highlighted also the needs of very specific and more general improvements of current version of the e-laboratory (e.g. some single e-tools, e-tools related explanations and its correct usage, general guidelines “how to use e-tools correct”, design of e-tools, further potential e-tools etc.). The further outcome of the workshop received from round table discussions but also individual exchange of information and impression of single attendees.



So far, these further suggestions and meanings became also collected and listed as follows:

- disclaimer required for the e-Laboratory
- external approval by industry proposed (kind of review or certification)
- include/extend mitigation measures
- develop the standard on tool assessment
- majority of the tools are for safety, thus more diverse integration of other tools became suggested to incorporate additional e-tools, for instance addressing production of hydrogen by gasification and from biomass

At that stage it must get mentioned, that it is already planned within the project to execute two online hands-on sessions addressing in usage of e-Laboratory in order to interact directly with industrial representatives, scientists and students and to instruct them further and more detailed about the e-tools. These hands-on sessions will help users to understand the online engineering tools in various directions i.e. safety, fuel cells, renewable energy, electrochemistry, H₂ properties, H₂ storage etc. and to use them in their day-to-day activities for instance to calculate different parameters or pre-results. The consortium, in turn, will benefit from the interaction with users by getting the feedback from using it, which will help at least to advance the platform.

1.2.3 Outcome of the e-Education (e-learning)

The e-Education in NET-Tools aims at providing a platform for online learning based on massive open online courses, so called MOOCs. It became explained to the attendees during the expert workshop, that NET-Tools project focus only on providing this opportunity to the broader FCH community, especially industry. NET-Tools project itself was not created in order to develop an essential number of MOOCs and has therefore fewer efforts for this activity. However, to demonstrate the opportunities and especially the advantageous incorporation of developed e-tools in teaching materials, the consortium will develop a short course for demonstration. The status and plans were presented and the feedback from the audience became collected.

Because e-Education shall get provided via a cloud based LMS at least, already at this stage Open-edX gets chosen as a potential and stabile running learning management system (LMS) to provide MOOCs via Open-edX (<https://open.edx.org/>). To express different advantageous of the chosen solution to the auditorium, based on existing technical features to incorporate specific information based on video, functional graphs, e-tools, etc., a presentation was held to demonstrate the strength and also attractiveness of the LMS.

The e-Education shall provide e-learning content and materials for demonstration in three “open” areas:

- Hydrogen production
- Hydrogen handling
- Hydrogen use

The areas were kept open to be influenced by the outcome and demands of the attendees from industry and academia. In round table discussions separated into groups from industry and academia the following major points became tackled and appeared relevant for both groups:

- user group can be broad, thus various access routes should get installed, e.g. by topic to easy navigation and select specific content relevant to the users (or user groups)



- governing and quality assurance: acceptance of content, role of certificates (if some) needs to be clarified and explained
 - o ranking of content (ranking by quality, length, depth, etc.)
 - o probably “peer reviewing“
 - o installation of an evaluation committee
 - o review of individual content / or institutions / content providers
- Relation between e-Education and e-Laboratory
 - o Use e-learning to introduce the e-tools
 - o Use the e-tools in e-Education

Specific suggestions and question raised by academia:

- Who is intended to use the platform in the future, and how open can and will it be?
- Additional suggestions for content/introduction/ further qualification
 - o standardised test procedures
 - o practical how to dos: e.g. how to use a hydrogen filling station
- Interaction with other LMS platforms and E-learning related activities / e.g. TeachHy
- Additional benefits are based on:
 - o feedback to lecturers from a broader group
 - o multiple purposes (e.g. preparation for job interviews)
 - o supports mobility by overcoming language barriers, e.g. possibility for subtitles

Specific suggestions and question raised by industry:

- Interest in short courses (lectures)/concise educational material, easy to select topics of relevance
- Incentive for content providers: open access, facilitation of collaboration between content providers
- What is the business model?

Some of the input can be addressed in the example courses provided in the course of the NET-Tools, while other information is important regarding further communication and dissemination strategy for the NET-Tools platform.



1.3 Potential areas of improvements identified by the workshop participants

Table 2: Long list of comments received during the workshop

#	<u>e-Laboratory</u>	<u>e-learning</u>	<u>e-platform</u>
1	/	/	Only accessible when connected to the internet
2	Align Tools with regulations	/	/
3	Instructions should be provided alongside the tools. YouTube tutorial for each tool were suggested	/	/
4	Develop an additional tool to calculate leak from pipe fitting (in addition to leak from connection - slide 6 presentation) as occurs more commonly	/	/
5	Develop an additional tool to calculate reflect blast wave in a room (see slide 43 in presentation)	/	/
6	Develop an additional tool in re with liquid hydrogen	/	/
7	Develop additional tool / tools re injection of H2 into natural gas grid as well as for purification	/	/
8	Develop additional tool re degradation effect (catalyst)	/	/
9	Include functionalities for comparison with other fuels in the future	/	/
10	/	/	Harmonise terminology between tools e.g. "fictious" vs "effective"
11	Give more easily understandable name to tools for use by non-specialist audiences	/	/
12	Provide different functionalities and access depending on the profile of the users (specialist or non-specialist and advanced versus beginner profile). For example, an option with preloaded values could be included for some tools	/	Could be considered at the platform level rather than from e-laboratory alone
13	/	Develop strategy to incentivize stakeholders to contribute to the provision of materials (e.g. create a top list of contributors)	/
14	/	/	Clarify plan for maintaining platform in the medium to long term



15	Clarify plan for quality assurance in the medium to long term. External approval by industry was proposed (certification). This would require developing a standard on tool assessment	Clarify plan for quality assurance in the short term	Clarify plan for quality assurance in the medium to long term
16	/	Clarify plan for IP and confidentiality aspects to be taken into account for stakeholders providing content to LMS in the short term	Clarify plan for IP and confidentiality aspects to be taken into account for stakeholders providing content / tools in e-lab in the medium to long term
17	/	/	Offer option to use the platform as a brokerage platform for contributor to develop bespoke material for users
18	/	/	Review opportunities for sponsoring options for medium to long term
19	/	/	Ensure that detailed analytics can be taken on users of the platform
20	Disclaimer required for the e-Laboratory	/	/
21	References missing	/	/
22	Limitations of tools should be included in the description / instructions e.g. for the tools calculating safety distances its crucial to look to the risk which is a combination of the safety distance and the probability of the scenario.	/	/
23	The majority of the tools are for safety more diverse integration of other tools suggested to include e.g. production by gasification and biomass to h2 technology etc.	/	/
24	The current tools do not fully reflect industrial demands due to difficulty to re orientate to use e-Laboratory instead of company tools. There are more teaching orientated	/	/
			Suggestion for functionality: easy accessible structure to select content through various routes, topic, user group
25	/	/	Suggestion for additional functionality: A database with all national and European projects, classified in research (storage, production, conversion) and demonstration (mobility LV & tucks & buses, power to gas / power to hydrogen / power to power, energy storage, smart grids,



			and fuel cell systems for homes...). incl. the deliverables / reports of these projects
26	/	/	Suggestion for additional functionality: A database presenting the existing successful business models with references (taxi fleets, forklifts, submarines, drones...)
27	/	/	Suggestion for additional functionality : a tool (e.g. for mobile phones) guiding me to the next operable hydrogen station after entering the refuelling system needed (350 bar/700 bar LV/Bus) for the whole Europe



1.4 Conclusions

The executed expert workshop related to the NET-Tools objectives, especially the development and further ongoing of the e-Laboratory and e-Learning alongside industrial and academic demands was successful as far as, critics, suggestions and demands were expressed by the advisory board members (external attendees to the expert workshop). The introduced strategy to develop first time an e-infrastructure as an online portal to access and share e-Learning content, e-Laboratory for practical approaches and allocated databases was supposed in principle by the advisory board members. Furthermore, the attendees agreed fully to the major aim of NET-Tools to have an e-infrastructure available under open access regarding the broad spectrum of education in fuel cells and hydrogen technology.

However, based on the presented pre-developed e-tools, structure of e-learning materials (lectures, modules, small courses, etc.) and detailed discussions between all attendees a common appreciation was accomplished to concentrate on further development and crucial support:

- Specific instructions on “how to use” e-tools correctly
- Implementation of additional e-tools focusing on extended FCH technologies (also simple programming done in excel or other computer programs but based on free ware)
- Guidelines for external proposers of e-learning content and probably e-tools
- Improvement of common design to raise attractiveness and thus motivation to study provided online content
- Enhancement of collaboration between NET-Tools and industry (or academia) to locate their training and teaching materials at NET-Tools

A common agreement persisted, that NET-Tools project must be seen as a kind of “initiation” of a spread activity which depends not only on the acceptance (usage) of such an e-platform but also on conductive collaboration by the FCH community (industry and academia). To implement the digital outcome of other project, e.g. TeachHy, to provide e-content (complete online courses) at NET-Tools, is one fruitful step forward but needs to get sustained.

No agreement was achieved concerning potential business concepts to support and finance necessary activities (e.g. reviews, administration and technical maintenance) beyond NET-Tools project. Especially the active ongoing of NET-Tools (updates and maintenance of e-materials and contents) is important, because history shows that those activities engrosses if financial funding ends. Potential strategies to keep NET-Tools activity alive could base on:

- NET-Tools e-infrastructure gets taken over with all included and formulated responsibilities by Hydrogen Europe and/or Hydrogen Europe Research
- NET-Tools e-infrastructure affiliates with national or European FCH associations
- NET-Tools develops a business concept which finance the updates and maintenance of e-content and materials (probably by fees for providers and/or users)
- NET-Tools develops as an online portal for FCH technologies and raises membership and consequently membership fees for open access (e.g. as its done by several editors)



All in all, the expert workshop with the advisory board members was pretty interesting and exciting and helped the NET-Tools consortium to keep orientation in the development of e-Laboratory and e-Education and to concentrate on first priorities for improvements.

The forthcoming activities (technical schools and hands-on session webinars) became mentioned as further opportunities to collaborate constructive with NET-Tools consortium, to lay the foundations for a comprehensive and sustainable e-infrastructure for digital FCH issues.



2 Workshop Agenda

NET-Tools Workshop

19th and 20th March 2018

Novel Education and Training Tools based on digital applications related to Hydrogen and Fuel Cell Technology



Organised and chaired by:

Prof h.c. Olaf Jedicke, Karlsruhe Institute of Technology Germany


Dr Giovanni Cinti, University of Perugia, Italy

Ben Madden, Element Energy LTD, United Kingdom



(Version 17.03.2018)

Monday, 19th March 2018



10:30 – 12:00	Internal Meeting NET-Tools partners	
13:00 – 14:00	Registration	
14:00	Starting of Workshop 1st Day	
14:00 – 14:15 (15min)	Welcome and Introduction <ul style="list-style-type: none"> - Course and schedule at location (Giovanni Cinti) - Administrative instruction to the refunding of costs (Olaf Jedicke) - Introduction of workshop objectives (Lisa Ruf) - Introduction attendees - Agenda to the workshop (course of action) 	<i>Chair</i> <i>Lisa Ruf</i>
	<i>Aim: understand who is attending and their interest</i>	
14:15 – 14:30 (15min)	NET-Tools Concept <ul style="list-style-type: none"> - Overview project structure and general aim - Opportunities for participants - Beyond NET-Tools 	<i>KIT</i> <i>Olaf Jedicke</i>
	<i>Aim: explain overarching objective</i>	
14:30 – 15:30 (60min)	Presentation of e-Laboratory (1st part) <ul style="list-style-type: none"> - Overview of e-Laboratory - Live demonstration - Q&A - Key aspects requiring guidance from attendees 	<i>Ulster (lead)</i> <i>PersEE</i>
	<i>Content: Already developed e-tools to be presented, overview of further e-tools to get programmed, explanations and background, functionalities, applicability and benefits as well as limitations</i>	
15:30 – 16:00	Coffee break	
16:00 – 16:45 (45min)	Presentation of e-Laboratory (2nd part) <ul style="list-style-type: none"> - Overview of e-Laboratory content and guidelines 	<i>NCSR (lead)</i> <i>DTU</i>



	<p>which shall get developed</p> <ul style="list-style-type: none"> - Live demonstration (if available) - Q&A - Key aspects requiring guidance from attendees 	<p>UNIPG</p> <p>IEES</p>
	<p><i>Content: Already developed e-tools (if some available) to be presented, overview of different e-tools and strategy (guidance etc.) to get incorporated in e-Laboratory (also costume software e.g. NCSR), explanations and background, functionalities, applicability and benefits, limitations</i></p>	
<p>16:45 – 17:30 (45min)</p>	<p>Presentation of e-Learning and education Material</p> <ul style="list-style-type: none"> - Overview of e-learning and education materials - Live demonstrations - Q&A <p>Key aspects requiring guidance from advisory</p>	<p>DTU (lead)</p> <p>IEES</p> <p>KIT</p> <p>Ulster</p> <p>UNIPG</p>
<p>17:30 – 17:45 (15min)</p>	<p>Conclusions</p> <p>Instructions</p>	<p>Lisa Ruf</p> <p>Giovanni Cinti</p>
<p>17:45</p>	<p>Closing 1st day</p>	
<p>19:30 – 22:00</p>	<p>Networking time and dinner – dinner at Grand Hotel Imperial Levico Terme</p>	

Tuesday, 20th March 2018

<p>9:00</p>	<p>Registration</p>	
<p>9:00</p>	<p>Starting of Workshop 2nd Day</p>	
<p>9:00 – 9:15 (15min)</p>	<p>Conclusion 1st Day and Introduction to Round Table Discussions</p> <ul style="list-style-type: none"> - Introduction of Workshop Objectives - Introduction Attendees - Agenda to the Workshop (course of action) 	<p>Chair</p> <p>Lisa Ruf</p>
<p>9:15 – 10:30 (75min)</p>	<p>Round Tables</p> <ul style="list-style-type: none"> - Round Table on e-Laboratory (chaired by Ulster and 	<p>Overall chairing</p>

	<p>assisted by PerSEE)</p> <ul style="list-style-type: none"> - - Round Table on e-Learning (chaired by DTU and assisted by IEES) - - Round table on Beyond NET-Tools and Business Strategies (chaired KIT and PerSEE) 	<i>Lisa Ruf</i>
10:30 – 11:00	Coffee break	
11:00 – 11:45 (45min)	<p>Round Tables (continuation, summarization of comments and remarks)</p> <ul style="list-style-type: none"> - Round Table on e-Laboratory (chaired by Ulster and assisted by NCSR D) - Round Table on e-Learning (chaired by DTU and assisted by IEES) - Round table on Beyond NET-Tools and Business Strategies (chaired KIT and PerSEE) 	<p><i>Overall chairing</i></p> <p><i>Lisa Ruf</i></p>
11:45 – 12:30 (45min)	<p>Summarization of Round Table Discussion</p> <ul style="list-style-type: none"> - Round Table on e-Laboratory (Ulster and PerSEE) - Round Table on e-Learning (DTU and IEES) - Round table on Beyond NET-Tools and Business Strategies (chaired by ?) 	<p><i>Overall chairing</i></p> <p><i>Lisa Ruf</i></p>
12:30	<p>Conclusions Remarks</p> <p>Instructions</p>	<p><i>Lisa Ruf</i></p> <p><i>Giovanni Cinti</i></p>
17:45	Closing 2nd day and Workshop	all
12:30 – 14:00	Networking lunch – at Grand Hotel Imperial Levico Terme	



3 Workshop List of Attendees

NET-Tools Workshop

19th and 20th
March 2018

Novel Education and
Training Tools based on
digital

applications related to
Hydrogen and Fuel Cell
Technology



Organised and chaired by:

Prof h.c. Olaf Jedicke, Karlsruhe Institute of Technology Germany

Dr Giovanni Cinti, University of Perugia, Italy

Ben Madden, Element Energy LTD, United Kingdom



3.1 External Attendees Registered

(Version 17.03.2018)

1	Prof George MARNELLOS	Department of Mechanical Engineering University of Western Macedonia (Greece)	Confirmed
2	Prof Oleksandr VASYLYEV	Frantcevyh Institute for Problems of Materials Science Laboratory for Ceramic Fuel Cells (Ukraine)	Confirmed
3	Dr Yehor BRODNIKOVSKYI	Frantcevyh Institute for Problems of Materials Science Laboratory for Ceramic Fuel Cells (Ukraine)	Confirmed
4	Prof Karl BOUZEK	University of Chemistry and Technology Prague (Czech Republic)	Confirmed
5	Simon HEYLENS Senior Technical Trainer	Toyota Academy Product & Technology TOYOTA MOTOR EUROPE NV / SA Zaventem (Belgium)	Tied up with other business
6	Yannis MICHOS Marketing Director	Horizon Educational Horizon Fuel Cell Europe s.r.o. Prague 1 (Czech Republic)	Confirmed
7	Stefano MODENA	SOLIDpower s.p.a. Mezzolombardo TN (Italy)	Confirmed
8	Ahmed ALY Project Manager	Energy and Sustainable Development FAST - Federazione delle associazioni scientifiche e tecniche Milano (Italy)	Confirmed attendance Monday
9	Dr Simon JALLIS	AIR LIQUIDE Research & Development Jouy en Josas (France)	Confirmed
10	Ulrik Torp SVENDSON Product Management & BD Director	Nel Hydrogen Fueling Oslo (Norway)	Confirmed
11	Dr Massimiliano Della PIETRA	ENEA Energy Department Hydrogen and Fuel Cells Rome (Italy)	Confirmed
12	Dr Ioan IORDACHE	National R&D Institute for Cryogenics and Isotopic Technologies - ICSI Rm. Valcea Valcea (Romania)	Confirmed
13	Dr Deborah HOUSSIN	AIR LIQUIDE Research & Development Jouy en Josas (France)	Confirmed
14	Dr Luigi CREMA Head of Ares Unit	Fondazione Bruno Kessler Applied Research on Energy Systems	Attend on Monday



		Povo (Trento) (Italy)	
15	Katja MATTNER	Sunfire GmbH Research & Development Dresden (Germany)	t.b.c
16	Dr Kyrre SUNDSETH	SINTEF Industry New Energy Solutions (Norway)	Confirmed
17	Dr Benno WEINBERGER	INERIS Institut National de L'environnement Industriel et des Risques (France)	Confirmed
18	Elisabeth OBERPARLEITER	IIT - Institut für Innovative Technologien Bozen (Italy)	Confirmed
19	Dr HUBER	IIT - Institut für Innovative Technologien Bozen (Italy)	Confirmed attendance Monday



3.2 Internal Attendees

#	Name and Position	Organisation/Institution
1	Evelina Slavcheva	Bulgarian Academy of Sciences
2	Alexandros Venetsanos	National Center for Scientific Research "Demokritos"
3	Stella Giannissi	National Center for Scientific Research "Demokritos"
4	Volodymyr Shentsov	Ulster University
5	Vladimir Molkov	Ulster University
6	Adrén De Rosiere	PersEE
7	Laurence Grand-Clément	PersEE
8	Morten Vesterager Madsen	Technical University of Denmark - DTU
9	Peter Holtappels	Technical University of Denmark - DTU
10	Giovanni Cinti	University of Perugia
11	Olaf Jedicke	Karlsruhe Institute of Technology - KIT
12	Lisa Ruf	Element Energy

4 Impressions



Introduction to the NET-Tools Expert Workshop by Lisa Ruf (EE) and Olaf Jedicke (KIT)



Round Table Discussions on e-Learning



Comments in between done presentations



Workshop Attendees



Workshop Location in Levico Terme (South of Tirol)



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