



DELIVERABLE REPORT 7.3

D7.3 – I	PROJECT DISSEMINATION A	ND COMMUNICATION PLAN		
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DISSEMI	NATION LEVEL			
PU	Public		X	
РР	Restricted to other program	nme participants (including the Commission Services)		
RE	Restricted to a group speci	fied by the consortium (including the Commission Services)		
со	Confidential, only for mem	bers of the consortium (including the Commission Services)		
NATURE	OF THE DELIVERABLE			
R	Report		x	
Р	Prototype			
D	Demonstrator			
0	Other			





D7.3 – SUMMARY		
Keywords	Dissemination	
Full Abstract (Confidential)	The dissemination of the project results is a key part of the project. This deliverable includes details of the dissemination activities to spread information about the project to the public. All established dissemination tools are listed and examples of different dissemination activities which were organized by the members of the MAMA-MEA consortium are provided.	
Publishable Abstract (If different from above)	Dissemination activities of the project "MAMA-MEA - Mass Manufacture of MEAs Using High Deposition Processes"	

REVISIONS	VISIONS		
Version	Date	Changed by	Comments
0.1	13.11.2018	TUC	Initial draft
0.2	12.12.2018	UNIMORE	small adjustments
0.3	28.05.2019	TUC	small adjustments
1.0	21.06.2019	UNIMORE	updates on conferences, publica- tions and courses taught
1.0	25.06.2019	TUC	Finalisation





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1. INTRODUCTION

All dissemination activities within the MAMA-MEA project serve the purpose of improving and maximising the dissemination of its research results. The disseminated scientific findings need to be comprehensible for various audiences as diverse as scientific experts, industry partners and suppliers, the public as well as policy makers and students in the field of natural sciences. Other objectives are to promote the project findings at scientific workshops, in publications, etc. to accelerate the implementation of research findings in a targeted way. This should enable the scientific community to use the results for their own purposes.

Based on the Grant Agreement, the dissemination will be continued throughout the project. The dissemination manager UNIMORE and TUC as the lead partner are tracking the dissemination activities. The detailed input of the partners is collected and provided for the consortium on a shared MAMA-MEA platform.

Members of the MAMA-MEA consortium:

Technische Universität Chemnitz (TUC) Fraunhofer-Institut für Elektronische Nanosysteme (ENAS) Università degli studi di Modena e Reggio Emilia (UNIMORE) Johnson Matthey Fuel Cells Ltd (JMFC) System Ceramics S.R.L. (SG) INEA d.o.o. (INEA) Nedstack Fuel Cell Technology B.V. (NFCT)

1.1. AIM

The dissemination of the MAMA-MEA project results is highly significant for realising the project's purpose and success, even beyond the project lifetime, which includes the evaluation of the project impact as well as confirming and undertaking the steps required to achieve that impact.

Dissemination activities aim at

- informing the related communities
- acquiring input and feedback from the related communities
- raising awareness for the purpose of the project
- promoting results
- ensuring the sustainability of the results/effects after the funding for the project expired

To ensure a maximum impact of the project activities and a consistent project identity, the dissemination plan is essential for the future diffusion.





2. DISSEMINATION APPROACH

The MAMA-MEA project is funded by the EU, and thus by taxpayers' money. Therefore, a maximum benefit for the widest possible target audience and potential users is important, especially with regard to the European leadership in the hydrogen and fuel cell industry.

In WP7, a strategy for internal and external communication and activities will be established. The deliverables D7.1 and D7.2 will be updated according to the project progress.

3. DISSEMINATION ACTIVITIES

3.1. MAMA-MEA PROJECT WEBSITE

The MAMA-MEA project is represented online through a website with a user-friendly and attractive design that complies with the EU's specifications for publication and is described in deliverable D7.1. The funding through the EU can be immediately recognised thanks to the respective logos and the link to the FCH2 JU website at the bottom of the homepage.



Figure 1: MAMA-MEA homepage - news





The websites' contents are updated regularly. Project publications and public deliverables will be made available for the general public in the future. For further details on the website see Deliverable D7.1.

3.2. CONSORTIUM MEMBERS' WEBSITES

The partners involved in the MAMA-MEA project present the project on their own websites. This has a dynamic effect on the maximisation of the projects' reach. The contributions of each partner can be found on the lead partners' website <u>https://www.tu-chemnitz.de/mb/DigiTech/projects/project-mama-mea.php.</u>

For example, following the link on the website of consortium member INEA, interested visitors can find a short project description of MAMA-MEA: <u>http://www.inea.si/en/raziskovalni-projekti/mama-mea-2/</u>. The entry on the website of consortium member UNIMORE is displayed in Figure 2.









3.3. PUBLIC WEBSITES

The MAMA-MEA-project is also disseminated in public media, e. g. websites that are not directly related to the project. Public interest is achieved by increasing visibility of the technology. Further details and materials are available on:

- <u>http://www.modenatoday.it/economia/ricerca-unimore-suystem-celle-combustibile-</u> 2018.html (accessed on 25/06/2019, language: IT)
- <u>http://reggio2000.it/2018/02/02/mama-mea-unimore-nel-progetto-europeo-per-innovazi-one-fuel-cell/</u> (accessed on 25/06/2019, language: IT)
- <u>http://www.sassuolo2000.it/2018/02/02/mama-mea-unimore-nel-progetto-europeo-per-innovazione-fuel-cell/</u> (accessed on 25/06/2019, language: IT)

3.4. PRINTED MEDIA: MAMA-MEA POSTER AND FLYER

For specific purposes, especially representation at fairs and exhibitions, the use of printed media likes flyers and posters is of utmost importance. The poster (see Deliverable 7.2) provides an overview of the project. The design of a new one, which reflects the progress made in the first half of the project, is currently under process. The flyer has been shown and described in the appendix of D7.2. Some design changes of the original and new photos were done. The flyer has been distributed in most fairs that the consortium members attended, for example on FC Expo 2018 and 2019 in Tokyo, or during discussions on Hannovermesse 2019.



Figure 3: Design changes in the flyer





3.5. MAGAZINES

Easily accessible articles for the public such as entries in magazines will be published.

	vM Mirs.
	UNIMORE UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA MODENA E REGGIO EMILIA
	Ti trovi qui: Home = International news
	Unimore is scientific partner of MAMA-MEA European project for fuel cell innovation
	<text><text><text><text><text><text></text></text></text></text></text></text>
	Categorie: International - english
	Articolo pubblicato da: Ufficio Stampa Unimore - ufficiostampa@unimore.it
u e M	Jniversità degli Studi di Modena e Reggio Emilia - Partita IVA (VAT Code): 00427620364 =-mailurg@unimore.it Modena: Via Università 4, 41121 Modena, Tel.059 2056511 - Fax 059 245156 Borola Emilia: Via da Alleone 9. 40131 Borola Emilia: Tal 1622 659041 - Eax 0592 659045

Figure 4: Article in the online magazine of UNIMORE

3.6. CONFERENCES/WORKSHOPS/EVENTS

The main objective of the consortiums members' participation at conferences, workshops and events is the information of the scientific community and networking with relevant and potential industry partners. The goal is to raise as much awareness for the project as possible. In the first year of the MAMA-MEA project, the main focus laid on making the project (its logo, website, etc.) widely known.





Most relevant activities:

- Future Powertrain Conference 2018:
 - 28.02.-01.03.2018, Solihull (United Kingdom)
 - approx. 250 participants from the automotive industry
 - main focus: future powertrain requirements, significant focus on both, fuel cell and battery vehicles, talk was designed to address the future challenges in terms of performance, lifetime and volume supply of the MEA components
 - attendee: JMFC
- FC Expo 2018 and 2019:
 - 28.02.-02.03.2018, Tokyo (Japan) / 27.02.-01.03.2019
 - World's Largest Show for Hydrogen & Fuel Cell, part of World Smart Energy Week
 - About 64,399 participants from different energy sectors (battery, wind, PV, thermal, smart grid, biomass) 1,580 exhibitors (245 exhibitors in the FC Expo hall)
 - The MAMA-MEA members also attended as visitors the technical conference part and introduced the MAMA-MEA project to variety of experts in discussions
 - FC Expo main focus is on fuel cell systems and their application, water electrolysis, fuel cell materials
 - attendee: TUC, NFCT



Figure 5: Dissemination activities for FCH JU projects





- The 3rd AIGE/IIETA International Conference and 12th AIGE 2018 Conference:
 - 14.-16.06.2018, Reggio Calabria and Messina (Italy)
 - website: http://www.aige-iieta2018.unirc.it/
 - 1 plenary session, 9 regular sessions, 2 poster sessions
 - approx. 200 participants, mostly academics from thermal fluids, energy, chemistry and physics fields
 - final program available at URL: http://www.aige-iieta2018.unirc.it/wp-content/up-loads/2018/06/final-program.pdf
 - contribution presented in the "Session 5: Hydrogen, fuel cells and electrical storage"
 - contribution selected for journal publication (Sub-section 3.7)
 - Attendee and presenter: UNIMORE
- Nanoinnovation 2018:
 - 12./13.09.2018, Rome (Italy)
 - special auditorium of 8 people
 - advertising and introduction of the project MAMA-MEA
 - Attendee: UNIMORE
- Project Review Days 2018:
 - 14.-15.11.2018, Brussels (Belgium)
 - focus on the FCH JU-funded projects and their latest achievements, participants have had the opportunity to interact with the project coordinators and participate in a poster exhibition organised on this occasion
 - attendee: TUC
- HZwo Technologieforum:
 - 29.11.2018, Chemnitz (Germany)
 - 160 participants (experts from industry, scientific community, politicians)
 - advertising and introduction of the project MAMA-MEA
 - main focus: exchange of experiences, networking
 - attendee: TUC
 - link: <u>https://www.tu-chemnitz.de/tu/pressestelle/aktuell/9152</u>
- DECHEMA seminar:
 - 05.12.2018, Munich (Germany)
 - advertising and introduction of research in fuel cell production and recent developments of the project MAMA-MEA
 - main focus: batteries, fuel cells, energy conversion products, state of the art in the industry, future aspects
 - attendee: TUC





- Lecture for the Groningse Chemische Kring:
 - 11.04.2019, Social Cultureel Centrum't Clockhuys, Haren
 - more than 20 chemists
 - introducing the project, promoting technology
 - main focus: creating interest among peers (chemists), improving networking
 - attendee: NFCT
- HydroRACE4schools (project in which students of Czech and German grammar schools race with remote-controlled fuel cell cars):
 - 09.02. and 30.03.2019 (Děčín, Czech Republic), 18.05.2019 Chemnitz (Germany)
 - about 110 participants and 30 visitors at each event
 - main focus: creating interest among students
 - attendee: TUC





Figure 6 (top) and 7 (bottom): HydroRACE4schools on 9th February 2019 in Děčín (CZ)



Moreover, the Abstracts "MAMA-MEA, Mass Manufacture of MEAs Using High Speed Deposition Processes" (<u>www.europeanfuelcell.net/gestione/view_edit_abstract.php?codiceabs=EFC19076</u>) and "Manufacturing of PEMFC functional layers by inkjet printing" (<u>www.europeanfuel-</u> <u>cell.net/gestione/view_edit_abstract.php?codiceabs=EFC19079</u>) were submitted at EFC2019, European fuel cell conference & exhibition that will takes place in Naples December 9-11, 2019.

3.7. TRADE FAIRS

Informing interested parties and engaging in dialogue at trade fairs provides the opportunity to stimulate science and industry in Europe. The consortium members JMFC, SG, NFCT and INEA primarily aim at promoting new products and technologies at fairs while the research institutions UNI-MORE, ENAS and TUC mainly advertise new capabilities. The MAMA-MEA project is realised in collaboration and exchange with original manufacturers, suppliers, policy makers and private investors, in 2018 for instance at:

LOPEC trade fair in 2018 and in 2019:

- 14.-15.03.2018/2,500 participants; 19.-21.03.2019/2,700 participants
- main focus: printed electronics
- attendee: ENAS



Figure 8: Presentation at LOPEC trade fair

Hydrogen and Fuel cells Europe – Hannover Fair 2019:

- 03./04.04.2019, Hannover (Germany)
- main focus: hydrogen generation, storage and transport / fuel cells, systems and applications, components and supply technology, batteries





- promoting technology, gaining feedback, increasing visibility of the MAMA-MEA project
- attendee: SG, TUC

3.8. PUBLICATIONS

Currently, new findings are being collected and processed. These and other scientific publications are being prepared for 2019.

- P.E. Santangelo, M. Cannio and M. Romagnoli, Review of catalyst-deposition techniques for PEMFC electrodes, Tecnica Italiana: Italian Journal of Engineering Science, vol. 63 (1), pp. 65-72, 2019. DOI: 10.18280/ti-ijes.630109
- M. Cannio, A. Corti, S. Righi, P.E. Santangelo, M. Romagnoli, Smart catalyst deposition by 3D printing for low- and high-temperature fuel cells. (Almost finalized, to be submitted to a journal.)

3.9. NEWSLETTER AND DEVELOPMENT BLOG

Now that the project progress allows to print new layers of the MEA, it makes sense to release an annual newsletter on the MAMA-MEA homepage concerning the development. The first publication is scheduled for summer 2019. The objective of a development blog is an overview about the progress within the project. A step-by-step update is done by delineating the latest research results and milestones within the timeline of the project.

3.10. SOCIAL MEDIA

MAMA-MEA accounts on Twitter (https://twitter.com/TUC_MAMAMEA), Facebook (https://www.facebook.com/mama.mea.project/) and LinkedIn (https://www.linkedin.com/company/mama-mea/) were set up. During the GA in Modena in January 2019 a video about MAMA-MEA was produced. Now it is in post-production and it will be ready before the end of this year. It will be posted on social media and YouTube.

3.11. COURSES TAUGHT

A dedicated course on fuel cells ("Fuel Cells") was delivered by Prof. M. Romagnoli and Dr. P.E. Santangelo within the Master's program in Engineering for Environmental Sustainability at Università degli Studi di Modena and Reggio Emilia (UNIMORE). Details – syllabus included – are reported





at URL: <u>https://www.esse3.unimore.it/Guide/PaginaADContest.do;jses-</u> <u>sionid=2FD63E1DB2E19352D3265E662B47ABF5.esse3-unimore-prod-06?cod_lin-</u> gua=eng&ad_cont_id=10303*25209*2018*2009*99998&ANNO_ACCADEMICO=2018

The course was inserted in the 2nd teaching semester (25.02-07.06.2019) of academic year 2018/19 and consisted of (minimum) 54 h lecture over the semester. The course was included among those compulsory to graduate and was attended by more than 20 students; subjects related to MAMA-MEA project were extensively presented to the audience.

4. OBJECTIVES AND CHANNELS TAILORED TO TARGET GROUPS

4.1. CONSORTIUM MEMBERS

Having the project running on time and monitor its progress are the main objectives internally. Moreover, every activity needs to be documented properly, which is accomplished by using a main channel for the MAMA-MEA project partners.

Meetings as well as web and telephone conferences are held regularly and in short intervals, but also on specific request of the researchers. Twice a year, a General Assembly takes place.

After face-to-face meetings or web conferences, the presentation of the respective partners were uploaded to the shared online platform. Each member is responsible for ensuring that the content is up to date and does not disclose confidential materials. Additionally, a mailing list simplifies sharing of information. Specific MAMA-MEA templates, e. g. slides for presentations ensure the same design and thus a high recognition value.

4.2. INTERESTED PARTIES

The promotion of the MAMA-MEA project makes it possible to receive valuable feedback from interested parties. Especially for the industrial partners within the consortium, this is an excellent opportunity to showcase their state of the art and increase their visibility. Since the project is focused on mass production, it is highly significant that interested parties understand the objectives and the competences of all partners.

The main platforms for informing interested parties are exhibitions, international conferences and trade fairs. At these events, the project gets presented and promoted by the partners with the aim of increasing the impact of the project results. Poster presentations, flyers and the website of the project complete the communication mix with interested parties.

Additionally, it is highly significant to develop and pursue communication channels for project activities to a non-specialist audience, including contributions to the public understanding of scientific research and technological development in Europe by means of participation in appropriate media channels.





4.3. SCIENTIFIC COMMUNITY

The consortium partners contribute to the MAMA-MEA project through their own actions. Mainly, the following channels are used to present the partners' most recent research results in the first year of the project:

- Announcements of the project at the websites of consortium partners
- Joining relevant conferences and workshops (scientific presentation)
- Interviews with journalists
- Keeping the coordination team regularly updated over changes and relevant developments
- Informing stakeholders at events, conferences or technical workshops

5. STIMULATE EXPLOITATION

The project exploitation plan needs to be developed, maintained and updated. All exploitation activities will be implemented in the medium or long term. The efforts of the exploitation will focus on placing new products on the market. Several exploitation actions will be organised by the responsible partner NFCT and supported by other consortium members, especially by the coordinator, TUC. These activities will be evaluated by the entire MAMA-MEA consortium during the General Assembly meetings.

5.1. WORKSHOPS/MEETINGS

Together with the EU projects VOLUMETRIQ, CRESCENDO, GRASSHOPPER, GAIA, Fit-4-AMandA, HY-DRAITE and ID-FAST the MAMA-MEA project will be represented at the INSPIRE workshop on 5th and 6th March in Marseille, France, which will focus on sharing technical information and networking. It is an event on PEMFC components and their integration into fuel cell stacks and it will mainly focus on new component developments, successes and best practices: <u>http://www.inspire-fuelcell.eu/index.php/inspire-blog/march-2019</u>.







Figure 9: INSPIRE workshop on 5 and 6 March in Marseille, France

5.2. SOUNDING BOARD

The main purpose of the Sounding Board is to advice the entire MAMA-MEA consortium on technical, strategic and political issues and developments. It shall improve the acceptance of technologies, establish a solid market penetration and provide a path to place the innovative products to the market. Updates of the exploitation plan will be reviewed regularly by the Sounding Board. Reliable input from end users/stakeholders such as market requirements, is acquired through a very close collaboration with all partners.

Candidates

Dr. Sabina Fiorot (confirmed)

Dr. Sabina Fiorot is a project engineer (FC System Integration & Battery Testing Laboratory). Her research and development activities cover:

- Technical management of national and European projects in the field of scientific and technological innovation in the renewable energy sector;
- Characterization and set up of H₂ production systems
- Test and characterisation of fuel cell stack and fuel cell power systems;
- System integration: prototypes and systems for generating electricity and thermal energy, fuel cell UPS groups

(source: https://www.linkedin.com/in/sabina-fiorot-347105a)



Company profile

Environment Park is a public joint-stock company that operates under a system of free competition. Its activities are divided into two business units: Innovation and Development and Real Estate Services. The first provides expert technical advice and market solutions in Green Building, Plasma Nano-Tech, Green Chemistry (biomass treatment), Advanced Energy (energy production and storage) and Clean Tech (technology transfer). The Real Estate Services unit, on the other hand, is the operative area of Environment Park, focusing on the management and relaunching of its business area, which covers over 30,000 square metres and houses around 70 businesses devoted to technological innovation.

The company provides businesses and public administrations with solutions for energy saving, waste disposal, clean energy, new materials and fundraising.

(source: https://www.envipark.com/en/about-us)

Dr. Steven Wilkins (not confirmed)

Dr. Steven Wilkins is a senior scientific research engineer with a 20-year background in alternativelypowered transport including hybrid, electric, and fuel cell vehicle systems and powertrain modelling and simulation, and assessment.

- consultative support to many technology startups, and has been a founder, CTO and Director for his own company.
- member of the Powertrains department within TNO Helmond as a group technical lead and roadmap contributor
- Assistant Professor within the Electromechanics and Power Electronics Group within the Electrical Engineering Department of the Technical University of Eindhoven
- has been involved in a wide range of research projects funded by EPSRC, Industrial and Governmental, and the EU within Frameworks 5, 6, 7, and H2020
- active member of EARPA and EGVIA, and has been involved in several EU projects (TRANS-FORMERS, CONVENIENT, EMC2, ABattReLife, FABRIC, AMBER-ULV, ASSURED, AEROFLEX, CERBERO, HIFI ELEMENTS, H2Share, ORCA)

Company profile

TNO was founded in 1932 to enable business and government to apply knowledge. The TNO has more than 3500 employees world-wide with an annual turnover of € 600+ million with very strong global presence and international projects. The philosophy of TNO is to connect people and knowledge in order to create innovations that boost the sustainable strength both industry and well-being of society through Independent research Innovation with purpose.

Further candidates

Debbie Thorp, Global Inkjet Systems, Cambridge, UK is an additional candidate. The consortium intended to engage other appropriate candidates but they cancelled.





6. CONCLUSION

The communication and dissemination activities will continue in the next stages of the project and this deliverable will be regularly updated. A list of contacts will not be added due to the public nature of this deliverable in compliance with the General Data Protection Regulation as discussed in D7.6. The consortium provides a comprehensive overview of dissemination activities on the project website.