



DELIVERABLE REPORT D3.8

DELIVERABLE

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CONSORTIUM PARTNERS	Brno University of Technology	COUNTRY	Czech Republic
	Universität Stuttgart		Germany
	CIC nanoGUNE		Spain
	Thomas Keating Ltd.		United Kingdom

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SUMMARY

Work Task 3.2 “CDE activities” of the Work-Package 3 “Management, communication, dissemination, and exploitation” as described in the PETER Description of Actions aims at increasing the impact of the project through the wide dissemination of project outcomes and maximizing the project exploitation perspectives. The general objective of the Work task is defined as:

To communicate the project outcomes to targeted audience, and to ensure the efficient exploitation of the project results.

The present PETER Final Communication, Dissemination and Exploitation Plan (FCDEP) created in M42, presents the final version of planned dissemination and communication activities under the project. It also lists the tools and channels and examines their key performance indicators. The evaluation of the impact of dissemination activities is also a part of this report. Finally, we present our outlook on the dissemination and exploitation activities for the period beyond the project end.

LIST OF ABBREVIATIONS

BUT	Brno University of Technology
CDE	Communication, Dissemination and Exploitation
ECR	Early Career Researcher
EPR	Electron Paramagnetic Resonance
ER	Experienced Researcher
ICDEP	Interim Communication, Dissemination and Exploitation Plan
KPI	Key Performance Indicator
NGU	CIC nanoGUNE
PE	Plasmon Enhanced
PR	Public Relations
SMEs	Small and Medium Enterprises
THz	Terahertz
TK	Thomas Keating Ltd.

1. INTRODUCTION

Dissemination activities, maintenance of public relations and marketing activities are very important means for communicating the project ideas, disseminating the results, and maximising the impact of the project. Hereby we present the Final Communication, Dissemination and Exploitation Plan (FCDEP). It was based on the preliminary CDE plan outlined in the project proposal and expanded by the Interim CDE Plan (D3.3) and is supported by the Data Management Plan (D3.4, M6), the Interim Project Report (D3.7, M24), and the complementary Scientific Communication (D3.9) and Open Research Data Pilot (D3.10) (both M42).

FCDEP was developed to fully acquaint potential users with the project outcomes. The plan lists particular measures to be implemented both during and after the project to ensure sustainable dissemination and exploitation of the project results and findings exceeding beyond the circle of involved project partners. CDE activities are tailored to address full range of potential uses including research, industry, policy making, and educational training. Special attention is paid to inform about and popularize science scopes explicitly covered by the project, such as EPR, scanning microscopy methods, plasmonics and terahertz technology.

2. COMMUNICATION, DISSEMINATION AND EXPLOITATION STRATEGY

2.1 Specific objectives of the CDE activities of the PETER project

Beyond specific impacts pertaining to the instrumental characteristics of the developed prototype, the CDE activities of the PETER project deal specifically with the dissemination and communication of the wider-ranging consequences of this work, aimed at the following objectives:

- informing and spreading awareness about EPR spectroscopy transformation from a niche technique into one ubiquitously present in science and society,
- dissemination of the potential of THz EPR spectroscopy to revolutionise other areas where plasmonics and imaging are combined,
- promoting utilisation of the THz EPR spectroscopy in areas in which it hasn't a significant impact yet,
- bringing together the fledgling community of EPR imaging, creating its own research field,
- through exploitation of the project results, stimulating further growth of the THz-related industry
- communication of the significant impact of the project results on society, namely in the areas of energy harvesting and storage, medicine, and healthcare.

2.2 CDE target audiences

The PETER project results shall reach for following main target audiences:

- scientific community,
- industry,
- general public.

2.3 Dissemination activities employed with specific target audiences

2.3.1. Dissemination to the scientific community

Apart from the primary scientific dissemination channel – the publication of project results in impacted peer-reviewed journals - the prime means for dissemination to the scientific community are the presentations of results by participation on **conferences and workshops**, including invited talks, oral and poster presentations. This includes both 'physical' events and the virtual ones (held online), especially after March 2020, following the adjustment of the scientific community to the restrictive measures taken in response to the Covid-19 pandemic.

The scientific results of this project, including raw data gathered as part of the first scientific studies employing the developed prototype, is made available to the public according to guidelines set by the Data Management Plan (D3.4, M6) and Open Research Data Pilot (D3.10, M42).

The **summer school** organised for early career researchers (ECRs) and dedicated **workshops** for the scientific community have been organised as the opportunity to disseminate results to a wide portion of emerging scientific community and to create a network vital for achieving of the major scientific and technological impact in the future.

A direct outcome of the involvement of ECRs with this project and a valuable additional dissemination tool will be the successfully completed **PhD theses** on themes pertaining the project scopes and containing the theoretical and experimental project results.

The Key Performance Indicators (KPI) for dissemination to scientific community – the planned and the actual results – as well as their analysis is given in the Table 1.

Tab. 1 – Key Performance Indicators for dissemination to scientific community

DISSEMINATION CHANNEL	KPI	AIM	REALITY
Conferences, workshops	Number of presentations	≥6	~30
Papers on the use of plasmonics in EPR	Number of papers	≥2	1
Papers on the applications of PE THz EPR spectroscopy	Number of papers	≥3	1
Papers on operational principles of PE THz EPR microscopy	Number of papers	≥2	2
Papers on the applications of PE THz EPR microscopy	Number of papers	≥3	1 (in print)
Workshops for scientific community I and II	Number of participants	≥30/workshop	36 + 50
Summer school (M10)	Number of participants	≥60	90
PhD theses of the ECRs involved with the project	Number of theses	≥8	3

Analysis of the performance to the scientific community

As seen from the summary results given in Table 1, the project had been less successful than planned regarding the publication output achieved within the project lifetime. This is mainly due to the fact that the main scientific results of the project have been achieved during the last 6 months of the project period. The process of submission, peer-reviewing and editing a paper accepted for publication is a lengthy one as well. Several papers have been submitted for publications during the last months of the project that will be published after the project period ends. This activity will also continue, considering that the PETER technology still needs extensive testing and adjustments to achieve the best performance, which will be continued beyond the project timeframe.

Regarding the participation to conferences and workshops, the partial results of the PETER project have been vastly disseminated during the project lifetime. This is also an activity that we plan on continuing (see the section 4 – Outlook in the future).

Our three main communication and dissemination events – two workshops and a summer school – have performed well in terms of the expected impact. To further the dissemination of the workshops, the workshop materials (slides and recordings of the talks) have been made available to the public (downloadable from the PETER website or on a public YouTube channel).

2.3.2. Dissemination to industry

Dissemination to industry was centred around the following main dissemination activities:

(i) Direct dissemination to representatives of relevant industries (THz sources, detectors, EPR instruments, battery and solar cells producers etc.) through 1-on-1 discussions and at scientific **conferences**. This activity will be aimed at networking, strengthening of contacts and maximising the future commercial impact of the developed prototype.

(ii) Originally, the PETER project planned to organise the **Workshop for industrial partners** (in M32) on the theme of EPR microscopy, focused on the dissemination to SMEs. As all in-person events had to be cancelled or converted to virtual format during the Covid-19 pandemic; we had replaced this activity with dissemination to industry and business representatives on Industry-Academia partnering workshops (Research Meets Industry, etc.).

(iii) Involvement in major **industrial fairs** (e.g. Hannover Messe, International Engineering Fair in Brno etc.) in order to raise awareness about the PETER project goals.

(iv) Local dissemination via **Business Detection Systems** that serve to create awareness among local SMEs of the expertise and capabilities available within the project consortium was an activity that was originally planned but ultimately decided not to be pursued, as we evaluated the other channels to be sufficient in their dissemination performance. Also, the overall strategy of the project consortium was focused on the achievement of the proof-of-concept of the PETER technology; lending our capabilities and expertise outside of the project consortium is an activity that can be considered for a period after the project ends.

Tab. 2 – Key Performance Indicators for dissemination to industry

DISSEMINATION CHANNEL	KPI	AIM	REALITY
Direct networking on conferences	Number of contacts	≥10	~30
Workshop for industrial partners	Number of participants	≥10 SME representatives	≥20
Industrial fairs	Number of participations	≥1	1
Business Detection Systems	Number of systems involved	≥3	0

Analysis of the performance to the business and industry

Overall, our efforts towards the dissemination amongst the business and industry sphere have been fruitful even despite the unforeseen circumstances of Covid-19 pandemic affecting the second half of the project. The consortium representatives from Thomas Keating Ltd. attended 6 events in person and later several more online where they discussed PETER goals and achievements and built networking with possible future customers and partners.

Instead of organising a separate workshop for industrial partners, we had decided to join events with wider impact and guaranteed participation of industry (this change was approved in discussion with the project officer). This was for example the presentation by Lorenzo Tesi (USTUTT) on the prestigious meeting of the Royal Chemical Society with many potential customers in attendance, and the presentation by Božena Čechalová (BUT) on the ‘Research Meets Business’ workshop organised by FET Briefing project and endorsed by the EC. The business and industry groups participating there included EDF Deutschland GmbH (energy distribution), THALES Group (business detection technology), Blue Impact Ventures (investments), Abalonyx As (graphene production), IGL Coatings Hungary (nanotechnology products), Fluid Energy Group USA (technically advanced chemical systems) and many others. This presentation already resulted with an offer for

future collaboration from another FET-OPEN project (PEGASUS) and from the research results commercialisation and innovation hub Innomine (Germany).

2.3.3. Dissemination to general public

(i) General activities

General public dissemination activities include the maintaining of a dedicated project **website** as well as accounts and groups on **social media platforms** (Twitter, Facebook, ResearchGate). These dissemination tools are described in detail in the PETER Visual Identity Report (D3.1). Furthermore, the project was actively disseminated on **popularisation events** such as Open Days, Researchers' Night, Days of Electron Microscopy etc. – the current pandemic situation permitting.

(ii) Specific activities

Selected results of the project were disseminated via **press releases**, ensuing **newspaper articles** and **radio/TV shows**.

Tab. 3 – Key Performance Indicators for dissemination to general public

DISSEMINATION CHANNEL	KPI	AIM	REALITY
Website and social media	Number of hits/likes/shares	N/A	See overview below
Events	Number of visitors	≥100/event	See overview below
Press release	Number of ensuing articles	≥1 per a release	3
Media coverage	Number of viewers	N/A	After the project end

Analysis of the performance to the public

The PETER project website (<https://www.peter-instruments.eu/>) was continuously updated during the project lifetime and served as a central hub for both the project partners and the interested public. The intranet feature served to store internal project materials (i.e. minutes from status meetings). Dedicated pages to events (International workshops and summer school) enabled access to the events outcome materials. A dedicated page was also created to offer open access to project-related conference presentations and publications.

Google Analytics tracking was used to analyse the website performance. From the data overview we have established that the website experiences an average traffic of 3 hits/day (with a lower average of 2,5 hits a day pre-pandemic, followed by a significant increase after March 2020). The distribution of visitors according to their geographic origin is shown in the Table 4 below:

Tab 4. – Demographic data from website access

VISITORS	COUNTRY	PERCENTAGE
1.	United States	21,95 %
2.	Germany	12,97 %
3.	Czechia	12,47 %
4.	Italy	5,24 %
5.	Spain	4,99 %
6.	United Arab Emirates	3,49 %
7.	China	3,49 %

8.	Uganda	3,24 %
9.	Switzerland	2,99 %
10.	France	2,24 %

The events aimed at public included several Open Days, the Europe-wide Researchers' Night, and the traditional science and technology festival 'Days of Electron Microscopy' which takes place every Spring in Brno, Czech Republic. We have participated in these events with lab tours, scientific demonstrations, hands-on experiments, holding popularisation lectures on topics related to PETER, handing out flyers etc. These events have been very popular pre-pandemic and due to their mass-gathering nature had to be cancelled and transformed into online form following Spring 2020. This naturally led to a considerable decline of general public engagement. For comparison, the Researchers' Night of 2018 had attracted 750 visitors on CEITEC BUT alone, whereas the average participation to the popularisation lectures online during Researchers' Night 2020 was around 130 viewers.

The media coverage (TV, radio) during the project lifetime was not a priority as for most of the time, the project didn't generate any tangible, comprehensible (at least for public) result that would be attractive for news outlets. In the final project period, we had prepared a short videoclip (see Annex 2) introducing the project in a popular and catchy manner. This clip is intended to be disseminated through social media and institutional websites. A digital brochure for press release (see Annex 1) was also prepared at the occasion of the project finalisation.

2.4 Dissemination tools

2.4.1 Online tools

The online tools for dissemination of the project results include the project website and social media platforms, as described in the D3.1.

2.4.2 Printed tools

The physical dissemination material created for targeting mainly the general public include a brochure, poster and roll-up. These tools can be used on popularisation events to spread awareness and provide basic information about the project.

2.5 Communication

2.5.1 Communication with the EU

The main communication tool with the EU concerning the project implementation and results are the project reports (deliverables) and the Participant Portal (Funding & Tenders Portal), which serves as a contact interface with the appointed Project Officer. For the consortium, the Coordinator and the Project Manager oversee the communication with the EU.

2.5.2 Communication within the project community

(i) Meetings

A **kick-off meeting** was organised in M1 in order to consolidate the project team, review project schedule and milestones to be met, and set up the management structure.

Further **progress steering meetings** have been organised yearly (M12, M24) followed with a **final steering meeting** (M42) to assess the project progress and adopt eventual changes to general strategy. Smaller **Status meetings** (discussing the project progress and scientific direction but not accepting important general strategy decisions) have been organised regularly throughout the project lifetime as needed – approx. once every 6 months in the first half of the project, every two months during 2020 and every month during 2021.

(ii) *E-mail and teleconferences*

Day-to-day matters within the project consortium are communicated via e-mail. In need of discussion in time-sensitive matters where a meeting in person cannot be organised, and during the Covid-19 restrictions, teleconferences have been organised on a regular basis.

(iii) *Intranet section of the website and cloud-based document repository*

These tools allow the communication within the project consortium as well as between the management and involved researchers. The document repository contains confidential material, such as presentations and meeting minutes from Steering and Status meetings. Password-protected contents are made accessible to the authorised persons (e.g. Project Officer). The data storage management is further described in the Data Management Plan (D3.4).

2.6 Exploitation of results

The direct goals of the PETER project are the proof-of-principle of PE THz EPR spectroscopy, a working methodology to acquire PE THz EPR measurements, and the development of an operating setup (proof-of-concept) of the PE THz EPR microscope. Over the course of the project, the consortium has identified other exploitable results, with all of the main opportunities that are potentially exploitable listed below:

- PE THz EPR spectroscopy (prototype and methodologies)
- PE THz EPR microscopy (prototype and methodologies)
- Tip fabrication processes
- Tips for PE THz microscopy
- Antenna arrays for PE THz EPR

For the two main results: PE THz EPR spectroscopy and microscopy, how fervently these results are exploited is dependent on the results (performance, reliability, resolution, etc.) of the setups for both spectroscopy and microscopy. Following the end of the project, some improvement in performance to achieve viable prototypes in terms of the performance metrics outlined in the original proposal and in general usability may be necessary to fine-tune the systems. In addition, the methodologies, user-interface (software) and user-friendliness will need to be improved as part of commercialization efforts prior to a product launch. Typically, THz EPR instruments are individually adapted to the customer's needs; therefore, market analysis will be necessary to determine which features are essential for a fully off-the-shelf commercial product or whether a customizable-base product is more realistic for the initial stages of product development.

Thomas Keating Ltd., as a member of the consortium and designated as the primary partner for commercialization of PETER results, uses their expertise to handle the **direct commercialisation** of the instrument-based results (evaluation of the market potential, finding potential customers, etc.). TK has staff associated with PETER dedicated to achieving this as a specific objective. TK is focussing initially on the commercialization of the PE THz EPR spectroscopy prototype and methodologies, given the proof-of-concept has successfully been achieved during the lifetime of the PETER project. These initial commercialization efforts of PE THz EPR spectroscopy will be carried out and funded by TK with use of the prototype housed at the University of Stuttgart, as well as with the aid of USTUTT, who oversees future developments associated with the prototypes (both spectroscopically and microscopically).

Due to the high complexity of the developed microscope (low-temperature THz near-field microscope) coupled with the use of unprecedented technology (special probes and concepts), the commercialisation of this aspect is expected to come to fruition well after the end of the project, and potentially in collaboration with a third-party enterprise with commercial experience with scanning probe microscopy.

For the other exploitable results such as the tips and antenna arrays, a strong possibility is the formation of a **spin-off company** by one of the project staff, aided by local structures specialising in founding and supporting commercial exploitation of scientific results in general (e.g. Technologie Transfer Initiative GmbH, South

Moravian Innovation Centre). This spin-off can then focus on the development and manufacture of disposable goods needed for THz microscopy and PE THz EPR technologies. This, too, will likely happen well after the end of the project.

Publications in both the use of plasmonics in THz EPR spectroscopy and the PE THz EPR microscope prevent direct protection of these core ideas via patents; however, certain methodologies and sub-techniques are still expected to be protected by **patent**. If patent protection-worthy results are obtained by the end of the project, the consortium will do a cost-analysis to determine whether to pursue a patent for each result. The patent process and IPR, in general, will continue beyond the end of the project.

2.7 Knowledge management and protection

The IPR strategy of the project consortium follows the rules adopted by the European Commission, the best practice of IPR protection published by the EC and the internal rules of all the partners involved in the consortium.

The Consortium Agreement containing clauses codifying IPR issues, background and Non-disclosure agreement (NDA) has been signed.

3. MANAGEMENT OF THE CDE ACTIVITIES

During the implementation phase of the project, the leader of the WP3 is responsible for dissemination activities described in this ICDEP. Within the WP3, the task 3.2 is directly dedicated to Dissemination, Communication, and Exploitation Activities. The project partners have collaborated on continual updating of the CDEP, reporting on the Dissemination Progress and on realization of the planned actions. In general, the following principles have been observed:

- The project partners were asked to give their formal approval for dissemination activities containing or affecting their know-how and they had the right to refuse any dissemination activity which could potentially harm their interests (as per the Consortium agreement).
- All the partners were given prior notice before any dissemination activity concerning the project results, according to EC guidelines. This was a regular agenda point during Status meetings.
- The EC support was explicitly and visibly acknowledged regarding all the project outcomes as requested by EC guidelines and given rules (for specification, see Visual Identity Report, D3.1).

4. OUTLOOK INTO THE FUTURE

Although the main goal of the PETER project has not been yet satisfactorily achieved, the work on the instrument itself will not cease after the project end. We envision an additional two years (at least) of achieving the proof-of-concept of the PE EPR microscopy and fine-tuning the prototype for it to be ready for commercialisation.

During this time, we will continue to publish heretofore unpublished data and project results, as well as disseminate the project results via other channels (conferences, workshops, scientific discussions). All publications will be handled in line with the established practices (Open Access, aggregation on the project website and continuous updates of metadata). We are committed to the Open Research Pilot principles and as such, all the raw research data featured in published papers will be made available too using the project repository.

List of planned conference attendances (July – December 2021) – tentative

- Euromar 2021 (participation by TK, BUT)
- ISMAR 2021 (participation by TK)
- Fachgruppe Magnetic Resonance Spectroscopy of the GDCh, online 27/09 - 01/10 2021 (USTUTT)

- European Conference on Molecular Spintronics (ECMols) Dortmund 4–8/04/2022 (USTUTT)
- RSC ESR, St Andrews 6–10/06/2022 (USTUTT)
- NFO16, 2022, Victoria, BC, Canada (BUT)
- SPP10, 2023, Houston, USA (BUT)

Tentative overview of upcoming publications

For the future publication, we foresee these topics:

- Publication on hardware used in the PETER system
- PETER microscopy proof-of-concept
- Au-tethered sample for PE THz EPR spectroscopy
- Tip fabrication/performance
- Antenna design
- Analysis of plasmonic antenna arrays
- Modelling of PE EPR effects

The achieved project outcome lends itself to future collaborations and follow-up project proposals. We intend to submit a proposal to the EIC Transition Call (Challenge: Energy harvesting and storage technologies) for the year 2021, which is a call that supports both the maturation and validation of novel technology in the lab and in relevant application environments (by making use of prototyping, formulation, models, user testing or other validation tests) as well as the development of a business case and business model towards the innovation's future commercialisation.

Available funding schemes will be considered to assist us in bringing the PETER technology to the market.

5. CONCLUSIONS

This project successfully initiated a new line of technology, based on combining the specificity and spectral resolution of electron paramagnetic resonance with the spatial resolution of scanning probe techniques. The novel scientific underpinning is represented by the unprecedented use of plasmonic technology in electron paramagnetic resonance. The main outcome of this project is a proof-of-concept of the PETER technology, achieved via a working prototype of a plasmon-enhanced terahertz electron paramagnetic resonance microscope (PE THz EPR microscope).

A dedicated work task on dissemination, communication and exploitation in order to ensure the project knowledge transfer to the scientific community, industry and general public was maintained throughout the entire project lifetime. The Final Communication, Dissemination and Exploitation plan as presented here also contains an outlook on future dissemination efforts after the project's end.

This report is complemented by other deliverables of the PETER project – the Visual Identity Report (D3.1), the Data Management Plan (D3.4), the Scientific Communications (D3.9) and the Open Research Data Pilot (D3.10).

ANNEX 1 – brochure introducing the project results

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PLASMON ENHANCED TERAHERTZ ELECTRON PARAMAGNETIC RESONANCE

Horizon 2020
project FET OPEN

www.peter-instruments.eu

NEW ERA OF EPR MICROSCOPY

DEMAND

In our ever-evolving world we are facing many complex scientific issues. To solve them, there is a constant demand for new scientific discoveries. Diving deeper and trying to examine the structure and function of materials and substances is one of the ways to achieve it.

PRINCIPLE

Thanks to the new method based on the Plasmon principle we are at the dawn of a new era of EPR microscopy. With enhancing the local magnetic field component by plasmons we can get high fidelity information about the material and its properties from just a very small area.

SCIENTIFIC BREAKTHROUGH

Based on these principles, PETER scientists from CEITEC BUT, University of Stuttgart, CIC NanoGUNE and Thomas Keating Ltd. (UK) developed a new type of AFM microscope. Plasmon antennas attached to the tip of the probe enable us microscopic investigation of analytes with a spatial resolution deep below the diffraction limit of 1µm.

RESULTS

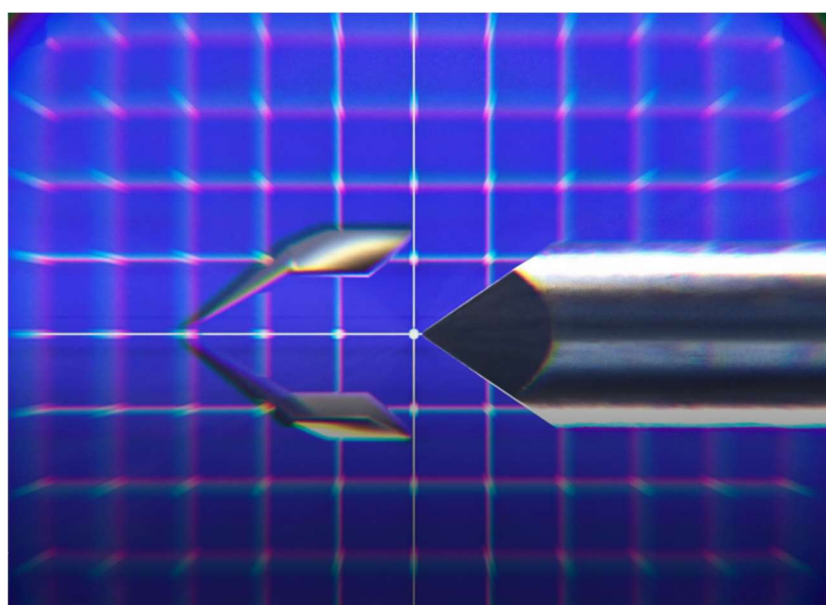
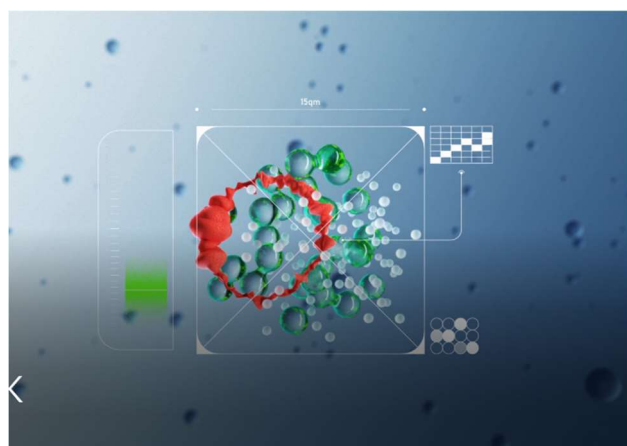
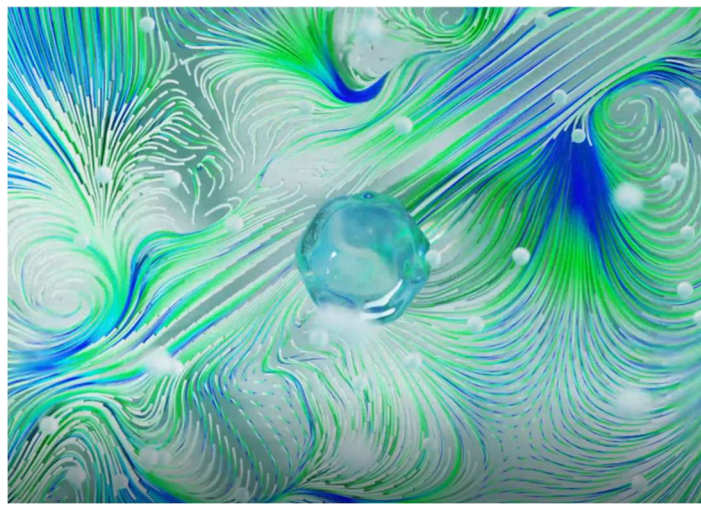
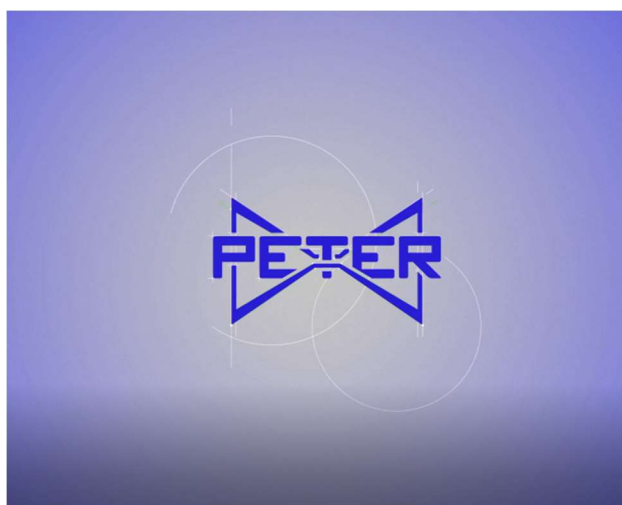
This technology will find its place in various scientific fields. Thanks to its high resolution and higher sensitivity we will be able to clearly distinguish different types of tumour cells, increase the battery lifetime, develop new organic and inorganic photovoltaic cells, or broaden our knowledge of quantum technologies leading us to a better and sustainable future.

PETER CONCEPT

PETER introduces a qualitatively new approach into the EPR area. It builds upon the strong enhancement and subwavelength spatial resolution of magnetic sensing field provided by plasmonic effects based on collective oscillations of electrons at surfaces or in nanostructures.

In contrast to usual THz plasmon-enhanced spectroscopy of nonmagnetic materials, we build upon magnetic plasmonic resonances. This presents unprecedented implementation of plasmonic phenomena into EPR technique. Our technology introduces for the first time plasmonic effects into THz EPR.

ANNEX 2 – Screenshots of promotional videoclip



ANNEX 3 – LIST OF CDE ACTIVITIES

On the next pages are listed the CDE activities realised during the project period – from the project start on 1. 1. 2018 to the end in 30. June 2021.



date	activity	audience type	No of persons reached	Link to the event website	person	Details
29. 1. 2018	Kick-Off	Students, policy makers, media	40 present	https://www.peter-instruments.eu/inpage/kick-off-meeting/	All consortium partners	PETER introduction (available on https://www.peter-instruments.eu/inpage/peter-education/)
30. 1. 2018	Seminar presentation	Researchers, administrative workers	25	https://www.conbri.com/event/eic-pilot	Jiří Spousta (BUT)	Sharing experience with FET proposal preparation
9. 3. 2018	Press conference	Media, policy makers		Days of Electron Microscopy Brno 2018	Jiří Spousta (BUT)	Launch of DEM
17. 3. 2018	Open Day CEITEC	General public	150	Days of Electron Microscopy Brno 2018	PETER BUT team	https://www.peter-instruments.eu/inpage/electron-microscopy-days-in-brno/
23. 3. 2018	Open Day FME BUT	Students (secondary education)	55	Days of Electron Microscopy Brno 2018	BUT team	Lab excursions, general project introduction
6 – 9. 5. 2018	poster	academic	100	6 th EOS Topical Meeting on Terahertz Science & Technology http://www.old.myeos.org/events/tst2018	C.M. Maissen (NGU)	Synthetic optical holography for phase resolved terahertz nanoimaging at sub-50 nm resolution
11. 5. 2018	event	General public	200	Science party Brno https://www.facebook.com/events/935413809956706	BUT team	Workshops, demonstrations
17-19. 5. 2018	workshop	Researchers / industry	75 / 20	BigMag workshop, USBC http://bigmag.ucsb.edu/	Richard Wylde (TK)	Discussions, networking
30. 6. 2018	Open Day USTUTT	General public	70	Tag der Wissenschaft	USTUTT team	Communication, poster, etc.
8 – 13. 7. 2018	Poster	Academia / industry	150 / 10	Plasmonics and Nanophotonics (GRS)	Curdin Maissen (NGU)	Phonon-polariton based nanosplit ring resonators

				https://www.grc.org/plasmonics-and-nanophotonics-grs-conference/2018/		
23 – 27. 7. 2018	poster	academia	100	ICN+T Brno 2018 http://www.icnt2018.org/	Michal Kvapil (BUT)	Spontaneous silicon substrate oxidation after FIB milling probed by mid-infrared plasmonic antennas
	oral				Vlastimil Křápek (BUT)	Babinet's principle for disc-shaped plasmonic antennas
	poster				Shu Chen (NGU)	Acoustic graphene plasmon nanoresonators for field enhanced infrared molecular spectroscopy
26 – 31. 8. 2018	posters	Academia / industry	150 / 10	The 15 th International Conference on Near-Field Optics, Nanophotonics and Related Techniques http://nfo15.utt.fr/	D. Madhi (NGU)	Synthetic THz nanoholography for imaging CVD Graphene
					C. Maissen (NGU)	Phonon-polariton based nano-split ring resonator
					S. Mastel	Resonant THz near-field probes
					A. Govyadinov (NGU)	Probing low-energy hyperbolic polaritons in van der Waals crystals with an electron microscope
2 – 5. 9. 2018	conference	Academia / industry / potential customers	150 / 20 / 8	HYP18: An international conference on Hyperpolarized Magnetic Resonance https://www.ocs.soton.ac.uk/index.php/hyp/hyp18	Alisa Leavesley, Kevin Pike (TK)	Discussions, networking with partners and potential customers
2 – 7. 9. 2018	poster	Academia	300	Joint European Magnetic Symposia https://jems2018.org	Michal Kern, USTUTT	Integration of molecular quantum bits with semiconductor spintronics
10 – 13. 9. 2018	oral	academia	100	40 th Conference of the Fachgruppe Magnetische Resonanz of the German chemical society	J. van Slageren (USTUTT)	Improving the sensitivity of THz frequency domain magnetic resonance
26. 9. 2018	event	Industry / general public	150 / 10	Wissenswert! Presentation Vector GmbH	USTUTT	Project presentation (poster)

3 – 5. 10. 2018	Summer school	academia	93	PETER Summer School https://www.peter-instruments.eu/inpage/summer-school/	BUT, USTUTT, NGU, TK	Lectures, poster session, networking
5. 10. 2018	Event (Open Day)	General public	750	Brno Researchers' Night 2018 https://www.peter-instruments.eu/inpage/researchers-night-brno-2018/	BUT team	Lab tours, demonstrations
20 – 26. 10. 2018	poster	academia	150	European Conference on Molecular Spintronics 2018 http://icmol.es/ecmols2018/	M. Kern (USTUTT)	Integration of molecular quantum bits with semiconductor spintronics
14. 11. 2018	Seminar lecture	academia	15	Frankfurt Goethe University (Germany)	P. Neugebauer (BUT)	Our recent progress in HFEPR spectroscopy
28. 11. 2018	Seminar lecture	academia	25	University Pardubice (CZ)	P. Neugebauer	High Frequency Electron Spin Resonance Spectroscopy Today and Tomorrow
28. 11. 2018	Seminar lecture	academia	8	New York Einstein College of Medicine (USA)	P. Neugebauer	Our recent progress in HFEPR spectroscopy
2019						
10. 2. 2019	Seminar lecture	academia	15	Casablanca École Centrale (Morocco)	P. Neugebauer	High Frequency Electron Spin Resonance Spectroscopy
9. 3. 2019	Event (open day)	General public	50	Days of Electron Microscopy Brno 2019	BUT team	Lab excursions, demonstrations
31. 3. – 5. 4. 2019	oral	academia	100	DPG 19 (DPG-Frühjahrstagung der Sektion Kondensierte Materie, 2019) https://regensburg19.dpg-tagungen.de/	V. Křápek (BUT)	Electric, magnetic, and electromagnetic hot spots
23 – 31. 5. 2019	poster	academia	100	SPP9 (Copenhagen, Denmark)	Shu Chen (NGU)	Antenna tips for sub-15nm resolving THz nanoscopy
1 – 8. 6. 2019	Invited lecture	academia	50	International Summit on OPTICS, PHOTONICS AND LASER TECHNOLOGIES ; San Francisco	T. Šíkola (BUT)	Quantitative Phase Imaging of Fields Shaped by Plasmonic Metasurfaces
13. – 17. 6. 2019	Invited lecture	academia	50	9th International Multidisciplinary Conference on Optofluidics ; Hong-Kong	T. Šíkola (BUT)	High resolution quantitative phase imaging
23. 6. 2019	Seminar lecture	academia	35	Krakow Jagiellonian University (Poland)	P. Neugebauer	High Frequency Electron Spin Resonance Spectroscopy Today and Tomorrow: Our Recent Progress in HFEPR Spectroscopy
20 – 27. 7. 2019	Invited lecture	academia	100	International Congress on Advanced Materials, Sciences and Engineering , Japan	T. Šíkola, J. Spousta (BUT)	Mid-IR Plasmonic Antennas on Absorbing Substrates: Optimization of Localised Plasmon-Enhanced Absorption upon Strong Coupling Effect

7/2019	Seminar lecture	academia	30	University of California Santa Barbara (US)	P. Neugebauer	High Frequency Electron Spin Resonance Spectroscopy Today and Tomorrow, Our Recent Progress in HFEPR Spectroscopy
16. 7. 2019	Seminar lecture	Academia	30	University of California Santa Barbara (US)	A. Leavesley (TK)	HF EPR and the PETER project
20 – 24. 7. 2019	Lecture	academia	100	60th Annual Rocky Mountain Conference on Magnetic Resonance https://rockychem.com/	P. Neugebauer	Multi-Frequency Rapid-Scan HFEPR Spectroscopy
20 - 22. 8. 2019	Conference	Academia/industry	150	12th UK/Europe China Workshop on millimetre waves and Terahertz technologies	A. Leavesley, K. Pike, R. Wylde (TK)	Discussions, networking with partners and potential customers
1 – 5. 9. 2019	Lecture	academia	100	11 th EFEPR conference, Bratislava (SK) https://efepr2019.conference.fchpt.stuba.sk/	P. Neugebauer	Contactless millimeter wave method for quality assessment of large area graphene
1 – 6. 9. 2019	Conference	Academia/industry	800	44th International Conference on Infrared, Millimeter, and Terahertz Waves http://www.irmmw-thz2019.org/	R. Wylde (TK)	Discussions, networking with partners and potential customers
15. – 18. 9. 2019	poster	academia	250	7th European Conference on Molecular Magnetism, Florence, Italy http://www.ecmm2019.org/	J. Čechal (BUT)	Deposition of molecular magnets by atomic layer injection
24 – 26. 9. 2019	Conference	Academia/industry	1500	UK Space Conference, ICC Wales https://www.ukspace2019.co.uk/ehome/200183909/whats-on/	K. Pike, R. Wylde (TK)	Discussions, networking with partners and potential customers
27. 9. 2019	Event (Open Day)	General public	600	Brno Researchers' Night 2019 https://www.peter-instruments.eu/inpage/researchers-night-brno-2019/	BUT team	Lab tours, demonstrations
25.10.2019	Seminar	Academia	25	University of Bern (Switzerland)	A. Leavesley (TK)	Quasi optical approaches to EPR
12. 12. 2019	Press Conference	Media, Policy makers	20	CEITEC BUT, Opening ceremony of the HFEPR laboratory	Božena Čechalová (BUT, Alisa Leavesley (TK)	Demonstration of PETER probe, roll-up; interview for press
2020 - 2021						
30. – 31. 3. 2020	Workshop	Scientific community	50	Magnetic molecules on surfaces workshop, COSMICS, Paris, France	Dominik Bloos (USTUTT)	Presenting first results in EPR
19. - 20.11.2020	Workshop	Scientific Community	100	Girse Webinar Celebrating Dante Gatteschi's 75th Birthday	Joris van Slageren (USTUTT)	From electronic structure to spin dynamics: EPR in molecular magnetism

9. 3. 2021	Workshop	Scientific community	50	COSMICS online workshop	Lorenzo Tesi (USTUTT)	High Frequency EPR: New Tools for Investigating Thin Layers of Molecular Magnets
12. 3. 2021	Workshop	Industry, policy makers	30	FETBriefing Innovation Training workshop	Alisa Leavesley (TK)	Presenting PETER; discussion with potential partners
15. 4. 2021	Online conference	Scientific community	150	The 54th Annual International Meeting of the ESR Spectroscopy Group of the Royal Society of Chemistry	Lorenzo Tesi (USTUTT)	High Frequency ESR: New Tools for Investigating Thin Layers of Molecular Magnets
21. 4. 2021	Workshop	Industry, EIC community	60	FETBriefing workshop 'Research Meets Business'	Božena Čechalová (BUT)	Presenting PETER project; networking, discussion of collaboration
11. 5. 2021	Workshop	Scientific community, Industry	50	MetaLight'21, Brno, Czech Republic	Michal Kvapil (BUT)	Presenting PETER project
12. 5. 2021	Workshop	Scientific community, Industry	50	MetaLight'21, Brno, Czech Republic	Martin Hrtoň (BUT)	Modeling PE EPR