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Project Acronym: **Q-SORT**

Grant Agreement number: **766970**

Project Title: **Q-SORT. The Quantum Sorter: A New Measurement Paradigm in Electron Microscopy**

Project Website and Logo (Second Release)

D6.5

Version 1

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Dissemination Level		
P	Public	X
C	Confidential, only for members of the consortium and the Commission Services	

Revision History

Revision	Date	Author	Organisation	Description
0.1	18/04/2018	Luca Marco Carlo Giberti	QED	First draft
0.2	02/05/2018	Luca Marco Carlo Giberti Raffaella Santucci Vincenzo Grillo Gian Carlo Gazzadi	QED QED CNR CNR	First complete version - finalised website structure for second release, texts of webpages for the second release
0.3	09/05/2018	Luca Marco Carlo Giberti Raffaella Santucci	QED QED	Second complete version - overall cleanup and insertion of images
0.4	16/05/2018	Amir H. Tavabi Stefano Frabboni	FZJ UMR	Review and comments, minor changes
0.4.9	23/05/2018	Raffaella Santucci	QED	Inserted new images and additional web-pages texts
0.5	30/01/2018	Luca Marco Carlo Giberti, Raffaella Santucci	QED QED	Final version integrating the comments of the peer reviewers and partners
1.0	31/05/2018	Luca Marco Carlo Giberti	QED	Added a few extra images

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EXECUTIVE SUMMARY

The purpose of this deliverable is to offer an update on the work on the Q-SORT project logo and the Q-SORT website, its sections, its technical infrastructures, and its related services.

This deliverable complies with the Q-SORT DoW outlined in Work Package 6, *Dissemination, Communication and Exploitation*. It particularly satisfies specification*s* outlined in Task 6.1, *Graphic identity study and logo design* and Task 6.3, *Website design and execution*, thus providing a reference point for all necessary actions regarding the promotion of Q-SORT's Web presence.

The promotional elements addressed in the document are the design and definition of the Q-SORT logo, its tagline and its graphic elements (including the website graphics and layout).

It is intended to benefit the work of the following interrelated tasks: Task 6.2, *Dissemination and Engagement planning and execution*; Task 6.4, *Production of materials for Dissemination*.

The current document is comprised of 6 main Chapters, an Executive Summary, Conclusions and an Annex.

The first Chapter describes the Q-SORT branding and visual identity strategies, which notably includes a paragraph devoted to the description of the Q-SORT logo.

Chapters 2, 3, 4, 5 offer respectively a detailed overview of Q-SORT's website layout and structure, its public and reserved areas, its technical infrastructure, the tools it offers, and its interactions with Social Networks and its additional services (e.g., web feeds, analysis tools, etc.).

Chapter 6 describes the workflow of the editorial team and the content of the website's various sections.

1 THE Q-SORT LOGO

1.1 Q-SORT Visual Identity

The study of a visual identity for Q-SORT was challenging since the project inception, due to the specialist nature of the subject matter as well to the difficulty of explaining the basic features of the sorter without making reference to mathematical descriptions.

Because we are convinced that a careful dissemination of the project's results will be of great value not only to academic but also to lay circles, a vigorous push towards engagement with non-specialised audiences has been a guiding principle in our work since the beginning. We feel that a low standard of design and copywriting has in the past been the cause of (otherwise-excellent) science projects' limited success in attracting a general audience. Luckily (also thanks to the efforts of the European Commission), the situation has been evolving quickly in recent years: there is a growing investment in communication, branding and public relations aimed towards a wider audience.

In keeping pace with these positive outreach initiatives, we believe that Q-SORT's branding approach should be driven principally by an emphasis on the following strengths: 1) the beauty and richness of meaning of the concepts and of the imagery that the project entails; 2) the scientific excellence of its endeavour and of the participating institutions.

In accordance with the parameters of our DoW, a professionally-conducted study of Q-SORT's visual identity and branding was undertaken. We are confident that this investment will bring added value to the project and distinctive advantages to the consortium. At the core of our efforts is the intention of developing an overall 'look-and-feel', a unique and easily identifiable personality to be consistently declined across all platforms used during dissemination. This undertaking includes the following branding elements :

1. Basic Elements

    i. *Brand logo*, i.e. the symbol through which the project is easily recognised, in both print and electronic media, and notably in thumbnails pertaining to social media profiles and browser favicons.

    ii. *Branding architecture*, meaning a coherent system of typographical rules, visual relations, and hierarchies between the brand-logo and the (typo)graphical elements connectable to it (e.g. the Q-SORT brand-logo and event titles).

    iii. *Tagline*, an encapsulation of Q-SORT 'brand personality', summarising what Q-SORT is with a short and easy to remember sentence.

2. Web

    i. Templates for the web pages that are compatible with WordPress and the CMS of the website. In particular, these include: a. main website page; b. general page template, e.g. About the project; c. news & events pages template; e. contacts page template, etc.

A vast selection of TEM- and vortex-related images and motifs was assembled for the visual identity study. Graphic artists were also briefed qualitatively on various aspects of the science behind the project and of the challenges involved in the project activities. The first element arising from the visual identity study was the design of the Q-SORT logo.

1.2 THE Q-SORT LOGO

The logo has to concurrently fulfil several functions. Namely, it should be: instantly recognisable, elegant, representative of the project, simple, easy to reproduce at various different sizes and on many different media. Ideally, it should also have evocative qualities.

In designing it, it was our intention from the outset to seek to provide a graphic analogue of some of the concepts and/or experimental procedures that are characteristic of the sorter. We explored and evolved several ideas for designs that could represent various forms of azimuthal symmetry, but also the action of sorting and the many meanings behind the word “sort”, which comes from the Latin for “fate”, i.e. *sors, sortis*. Interestingly, and poignantly, *sors, sortis* also means the response given by an oracle, i.e. the outcome of a divination: gaining an insight and being able to discern are also actions afforded by the sorter. As it is customary at QED, the designs were evolved by selection but also through a form of ‘horizontal gene transfer’, i.e. by sometimes grafting features from one design to another.

Throughout the design phase, we followed QED’s usual guiding principles of clarity and simplicity, which notably entail the adoption of a minimalistic tonal and chromatic palette, as well as checking that the design works first and foremost in monochrome.

Another guiding principle has been the suitability of the design to be animated as part of a possible ident which we are thinking of splicing in at the beginning of the Q-SORT webinars and social media videos (TBC in D6.2 - Dissemination and Public Engagement Plan).

We also had to take into account the use of the logo within the intended website design, together with the associated tagline (see 1.2), and also within the intended designs for other future Q-SORT graphic assets -such as brochures, posters, vinyl banners, possibly a handout gadget, etc.-, which will be specified in D6.2 - Dissemination and Public Engagement Plan. This meant, *inter alia*, clearly differentiating between the project logo and the textures of the website images - for example those arising from complex caustics. Other constraints we had to keep in mind were the reproduction of the logo as a thumbnail in social media and as a favicon in browsers, which imply the elimination or strong aliasing of fine details.

After several generations, we finally settled on the idea of the ‘open’ Q, based on pictures from a research article by Matteucci, Missiroli, Muccini, and Pozzi[1]: whereby the stroke of the letter Q represents a charged micro tip cutting across electron equiphase lines (see Figures 3 and 4). In the end, for several practical and aesthetic reasons, but also for greater simplicity, we decided to evolve the logo into a full logotype for the word “Q-SORT” (Figures 1 and 3), rather than keeping logo and project title separate.

[1] Matteucci G, Missiroli GF, Muccini M, Pozzi G, *Electron holography in the study of the electrostatic fields: the case of charged microtips*, Ultramicroscopy **45**, 77-83 (1992)

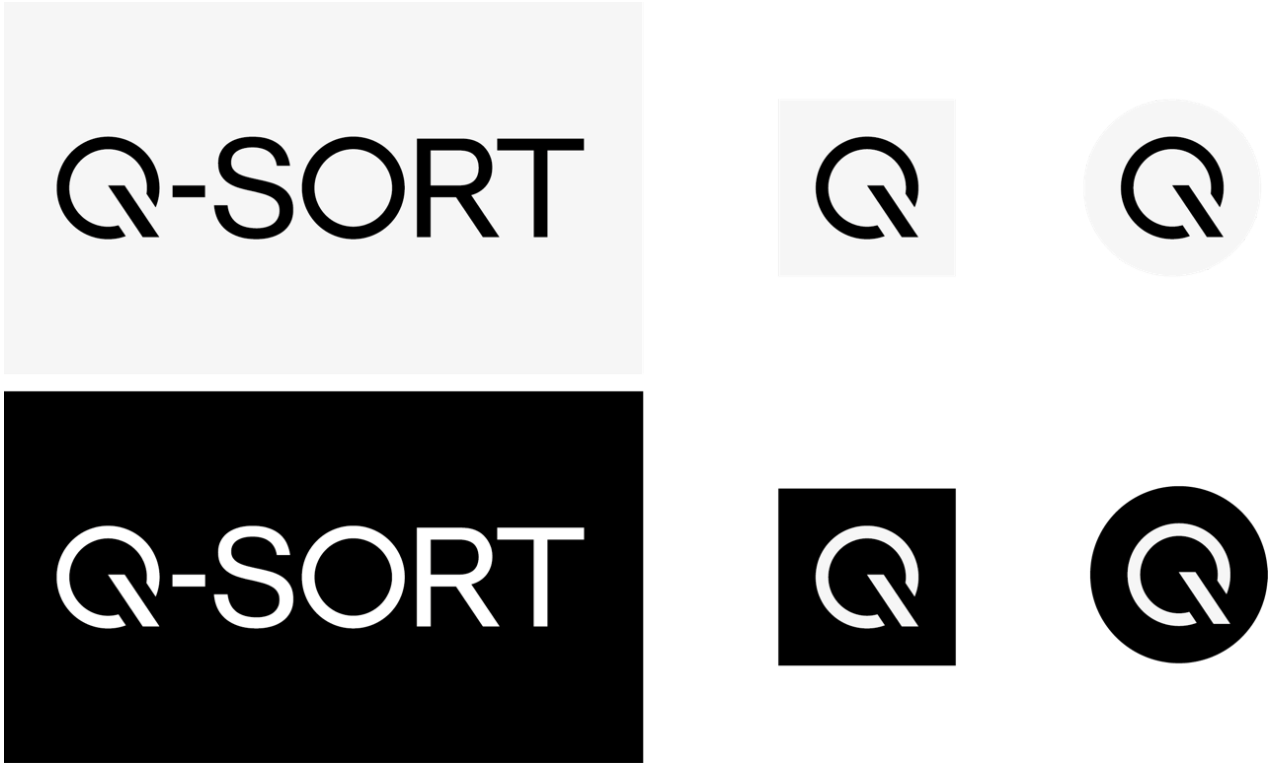


Figure 1. Q-SORT project logo and icons

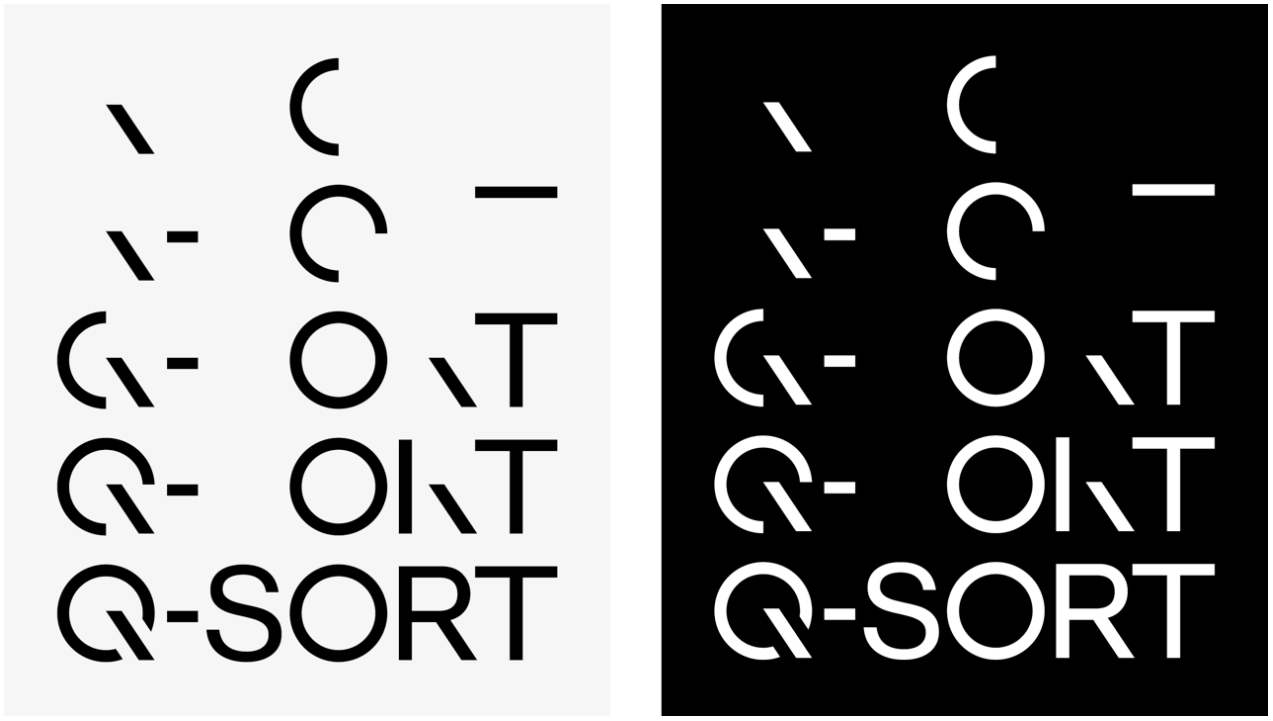


Figure 2. Study for a possible animation for the Q-SORT logotype

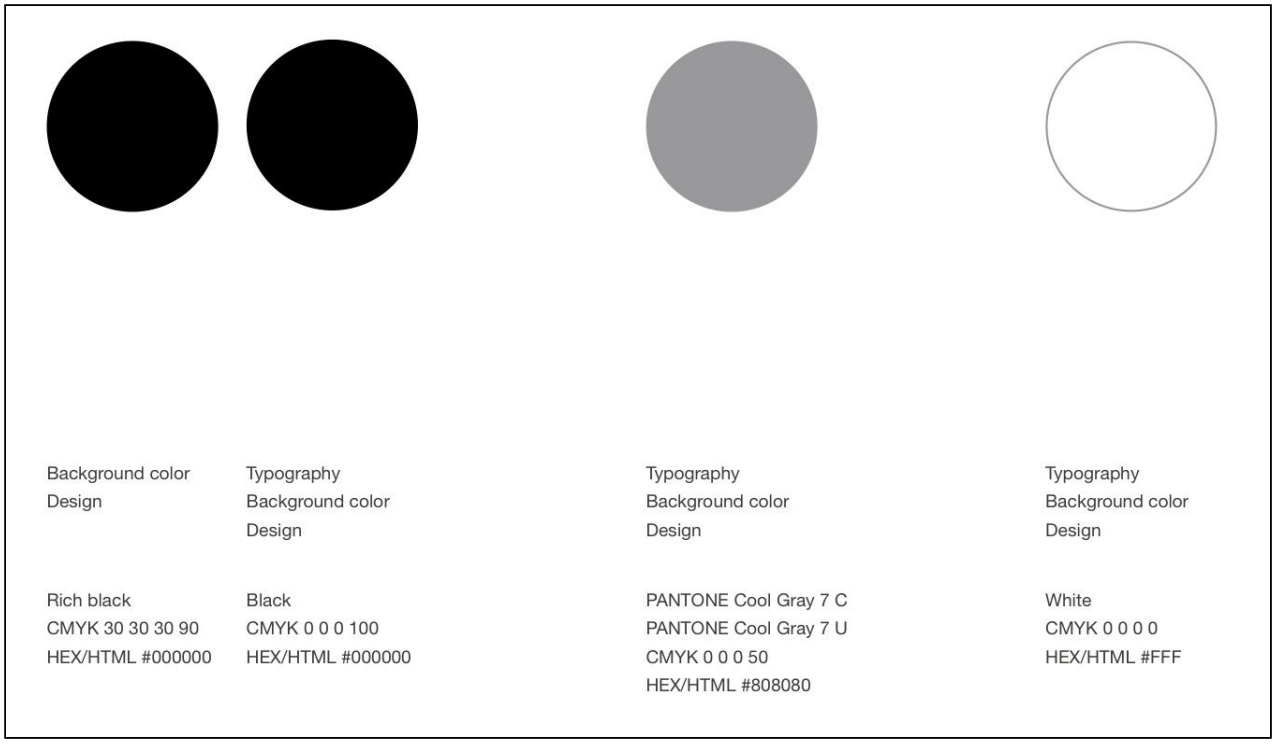


Figure 3. Q-SORT logo colour palette

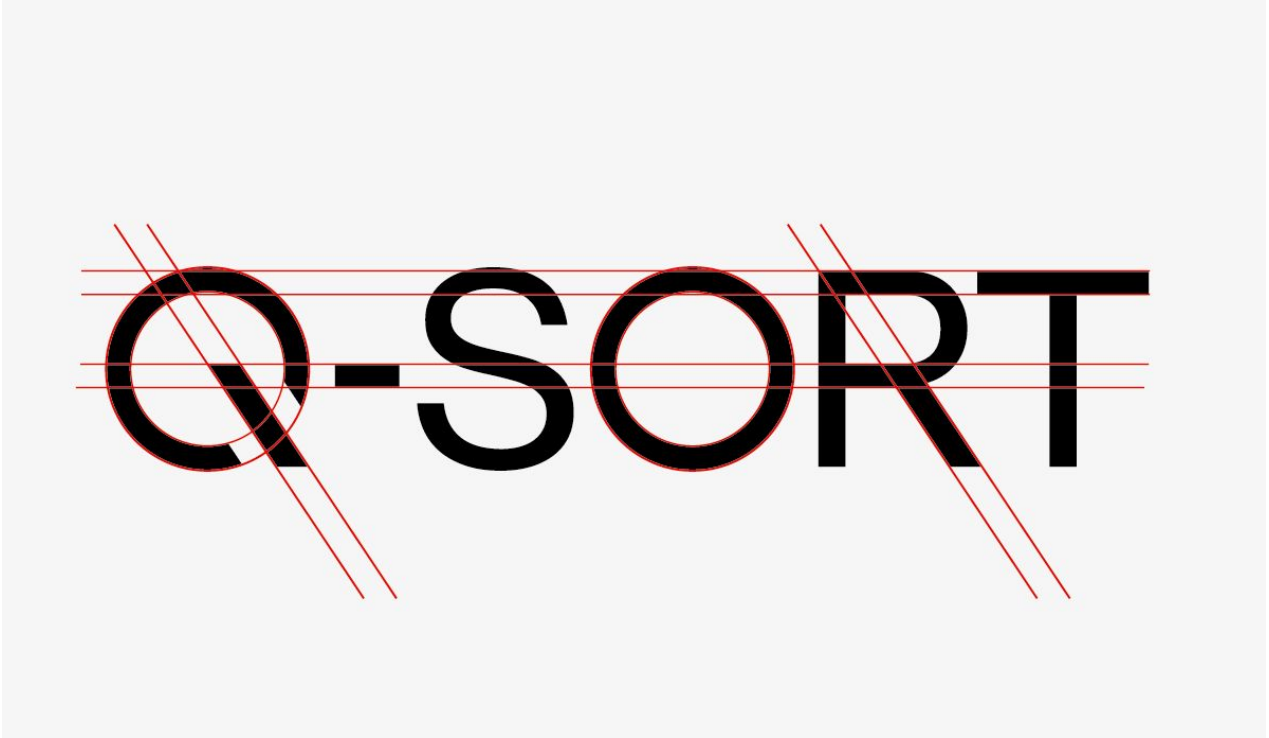


Figure 4. Q-SORT logo and its constituent elements

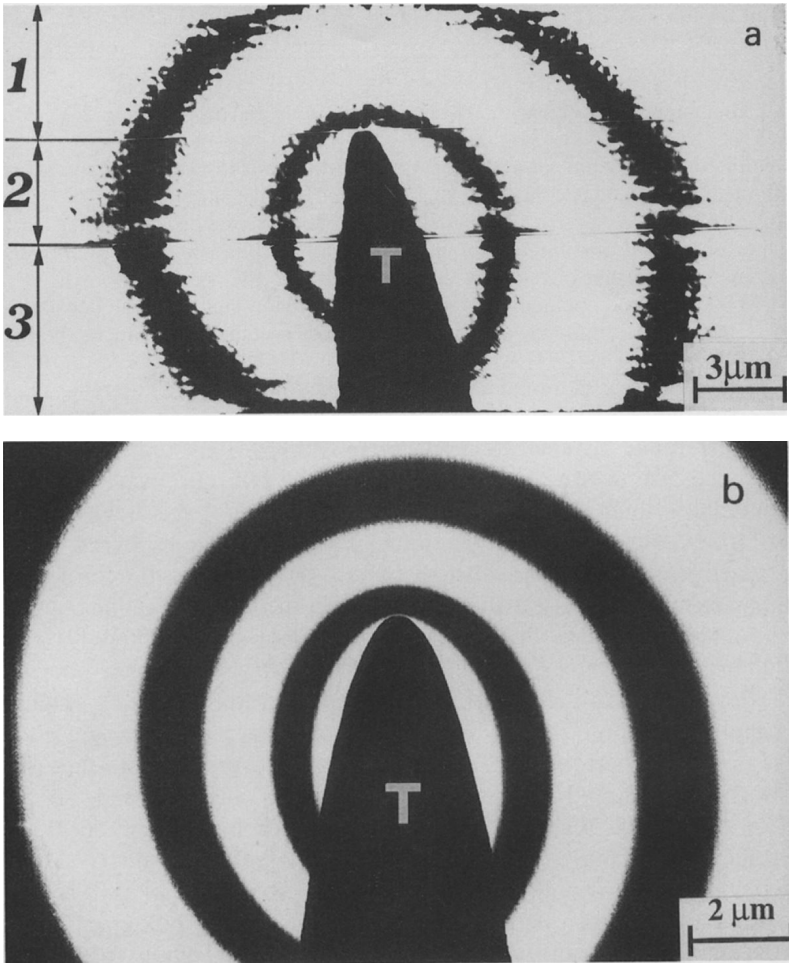


*Figure 5. The pictures that inspired the 'cut' in the structure of the letter Q: a charged micro tip cutting across electron equiphase lines; from Matteucci G, Missiroli GF, Muccini M, Pozzi G, Ultramicroscopy **45**, 77-83 (1992)*

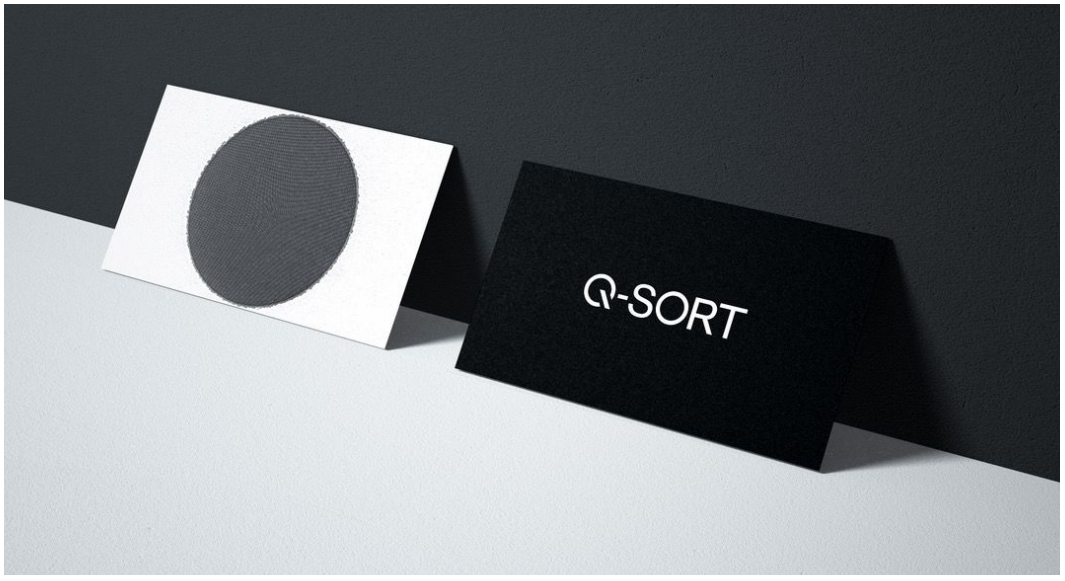


Figure 6. How the Q-SORT logo works in conjunction with other project/website artwork

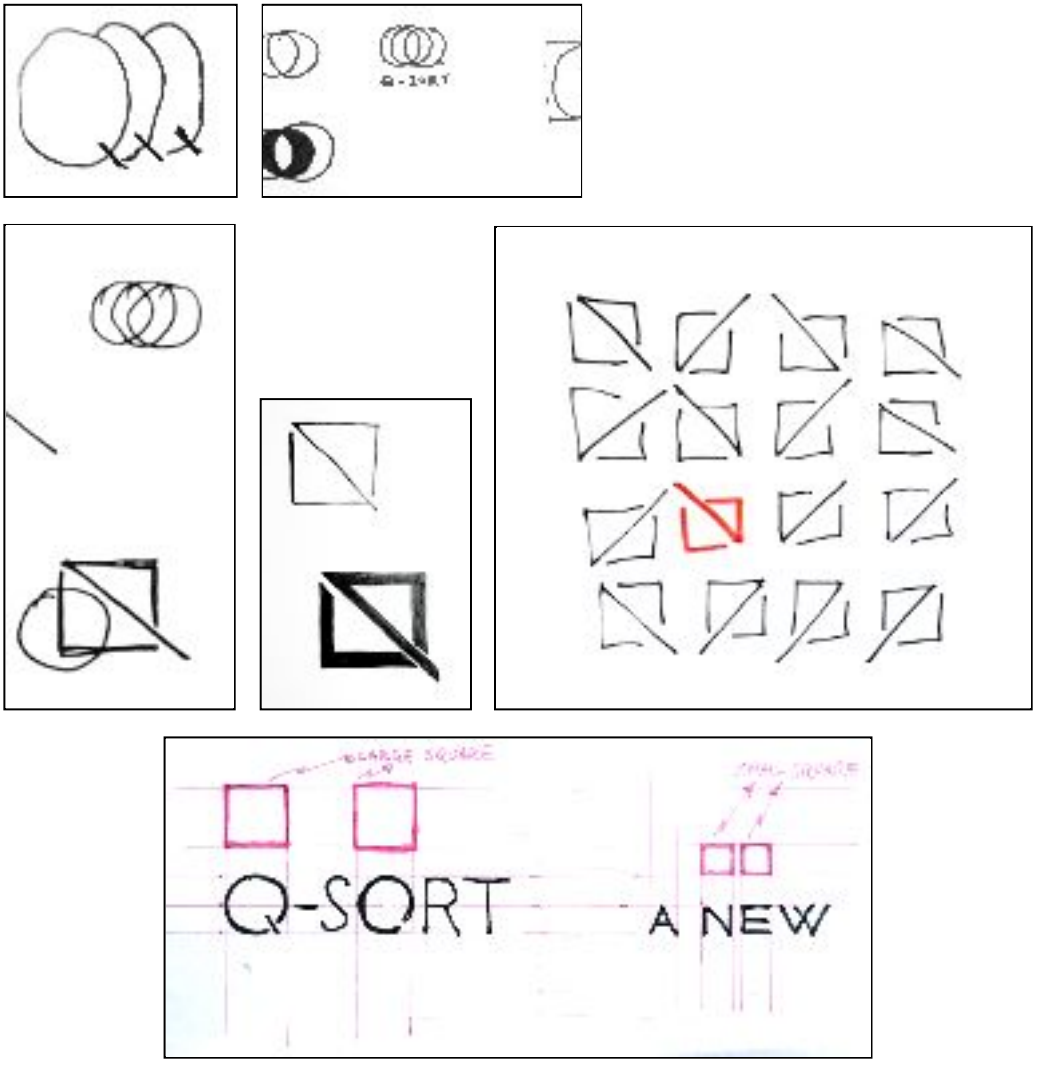


Figure 7. Some of the sketches made by Luca Giberti as part of the study for the Q-SORT project logo

1.3 The Q-SORT Tagline

A central component of the Q-SORT 'brand personality', the tagline summarises what Q-SORT is with a short and easy-to-remember sentence.

The chosen tagline is: *Q-SORT. A New Era in Electron Microscopy*.

These words were chosen carefully so as to highlight the revolutionary nature of the sorter. The mention of the electron microscope ensures the widest possible inclusion in search-engine queries.

1.4 Reception of the Q-SORT logo and related work after the release of the first version

The logo was well received and garnered the praise of several partners.

With view to future animation and graphic design work, QED experimented with alternative colour schemes for the logo. The creative director Luca Giberti decided nevertheless to stick with the white-over-black and black-over-white versions.

The logo and its constituent elements, which gradually 'come together' to form it, symbolise the inductive process inherent to empirical science - whereby a conceptual picture gradually emerges based on several observations/measurements. This inspired us to seek to animate the logo. Two animations were therefore developed:

One, for the website landing page, emphasising some of the basic elements which inspired the idea of the sorter, i.e. the electrostatic needle and the vortex (see Figure 24).

The other animation was produced in After Effects and set to a looping music, specifically composed to this end, in order to work as an animated monoscope to be played before and after the live Interdisciplinary Webinars. Playback of a video loop is customary practice in live streaming as it helps to ensure that 'early bird' viewers are not put off by the lack of sound and movement in their video window.

The individual elements of the Q-SORT logo were also used as a leitmotif in the design of the Conference subpages (see 2.3).

2 THE Q-SORT WEBSITE

The following domain has been registered for the project website:

http://www.qsort.eu/

The website is the keystone of the project communication and dissemination strategy, as well as a tool for work for the partners.

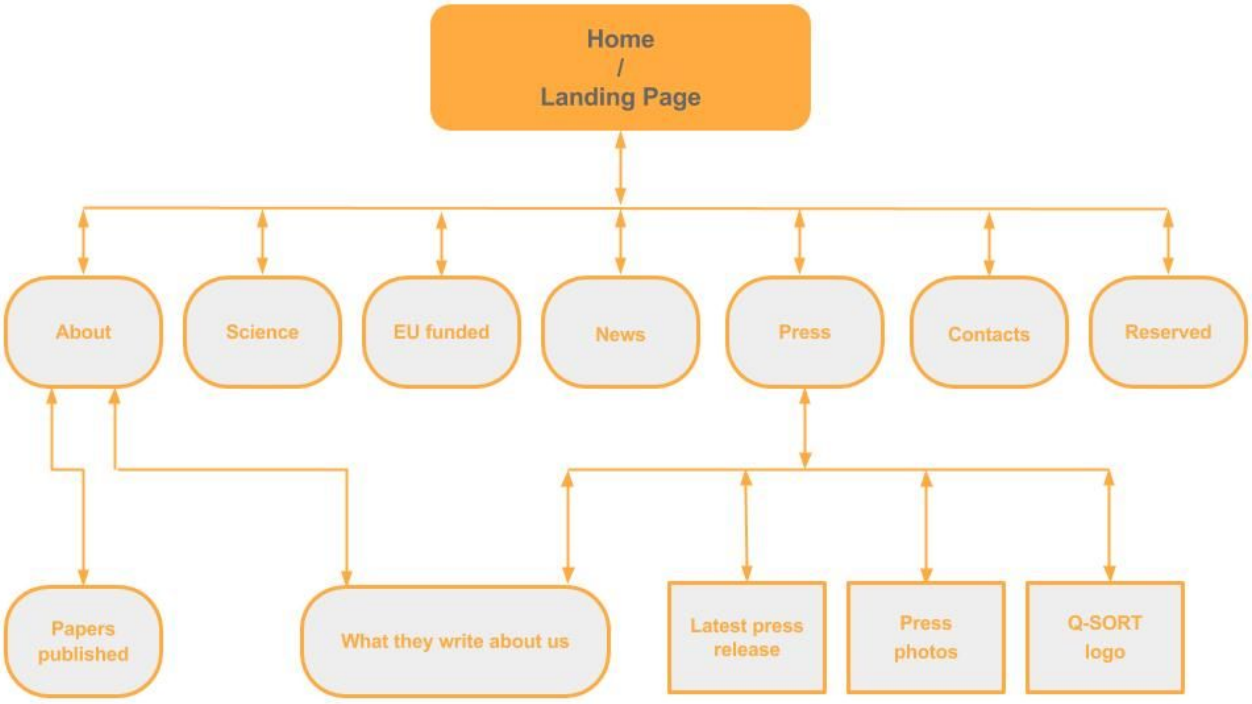


Figure 8. Logic view of first release of Q-SORT website; downloadable files are represented by rectangles

2.1 Functions Of The Project Website

The Q-SORT website is the first port of call for anyone wanting to know more about the project. At the same time, it is also the Q-SORT's own visiting card, so to speak.

Other important features of the website are:

- its usefulness for journalists and media people, who can download press kits and photos;

- its operational function as an online repository for all the project documents;

- its blog/news feature, which acts as the very first publishing outlet for news about Q-SORT, which will then be re-posted to social media.

Due to this multitude of needs, the website was conceived and designed inspired by criteria of clarity, functionality, simplicity, and beauty. Everything is intended to drive the user's attention on the main function of the website: to provide information about the Q-SORT project, its activities, progress, and achievements.

Since the Internet has become a mostly mobile medium, the website was conceived from the onset to be smartphone and tablet ready. That is why we adopted a responsive web design solution, i.e. *"...a Web design approach aimed at crafting sites to provide an optimal viewing experience – easy reading and navigation with a minimum of resizing, panning, and scrolling - across a wide range of devices (from desktop computer monitors to mobile phones)"* (Wikipedia).

The Q-SORT website is W3C compliant.

2.2 Structure And Layout

The website structure and the design of its graphical user interface were conceived bearing in mind the main scenarios of use and the resulting 'user trajectories' from the moment users land on the home page until they reach the information they seek. Model readers thus considered include the following three macro categories: users interested in knowing more about the project (including schools), scientists managers and admins working in the project, journalists.

For the latter two groups, the logical layout of the main navigation bar (see below) and the shallow nature of the page tree (Figure 8) result in the fastest possible path from landing on the home page to retrieving the desired information.

On the other hand, users who are just generally curious are invited to dwell on the rich, high-resolution scientific imagery on which the design is based. Images are a key feature of the Q-SORT website and of the Q-SORT communication in general. They are the easiest way to begin communicating and generating interest in complex information, not only amongst professionals but also within the general public.

Black and white was used predominantly for several reasons: primarily, to make the website stand out in the hyper-crowded and multicoloured landscape of the Web; but also, in order to make the few colour elements within it stand out, which is especially useful for highlighting items of great importance - such as the EU flag.

The website structure and content will evolve in time according to the needs of the project and of its partners.

2.2.1 Landing page

The landing (home) page of the website is a clean-looking and intuitive access point from which all further navigation ensues.

It features a large picture background which is representative of Q-SORT. In the lower portion of the landing page is the main navigation bar. At the bottom of the page the user will find the EU flag and the “This project is funded by the EU” caption.

2.2.2 The main navigation bar

The horizontal navigation bar features the following links (NB: the texts for each of the following subpages are given in Annex 1):

Q-SORT

A button for getting back to the home page.

Figure 9. Q-SORT home page

About

A page providing all the important facts about the project, featuring the following paragraphs:

Who we are

A brief description of the Q-SORT Partners, with links to their respective websites.

What we do

A summary of the overall mission and activities past and future of the project, which will be updated as Q-SORT progresses.

Figure 10. Q-SORT About page

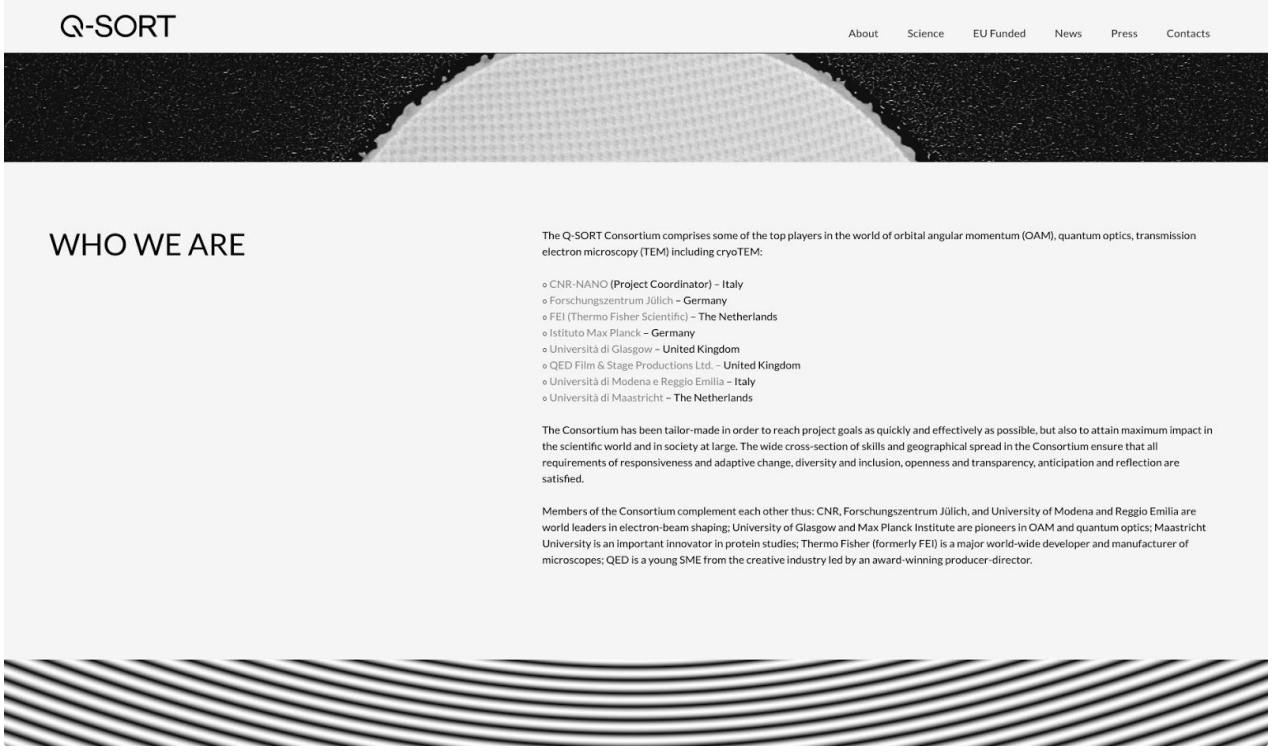


Figure 11. Q-SORT About page

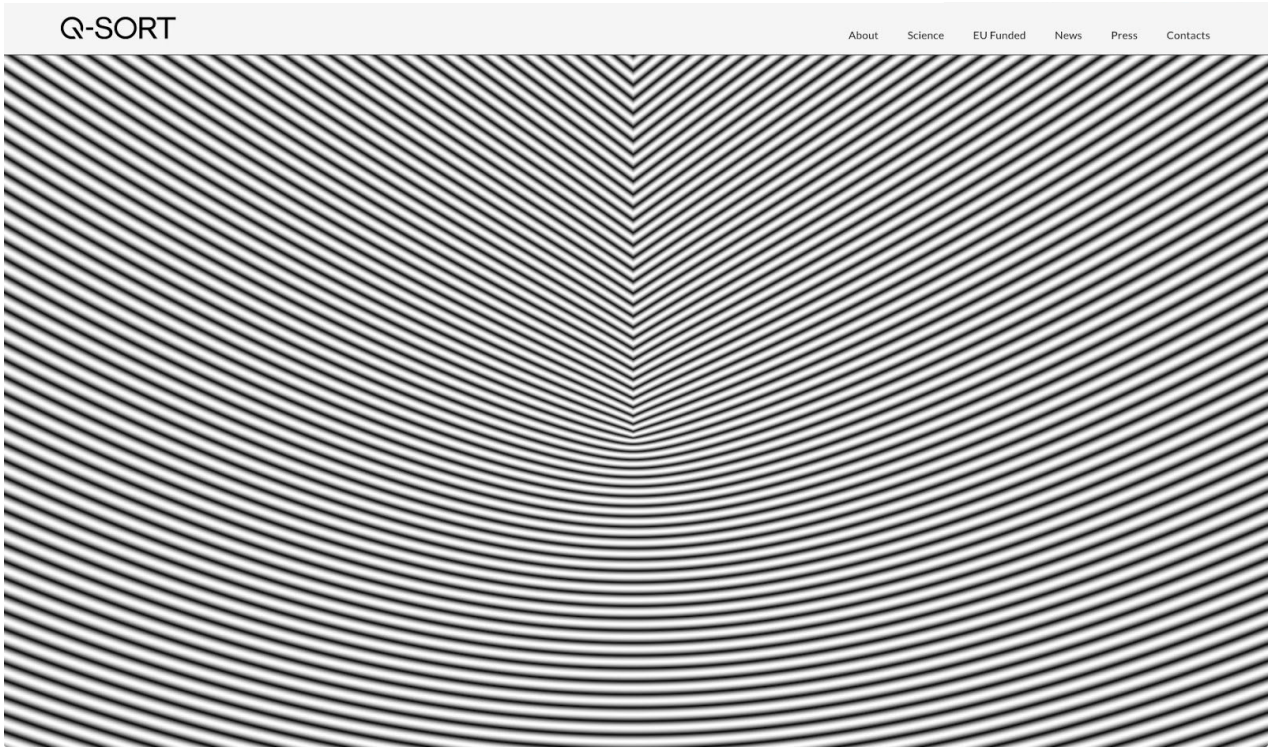


Figure 12. Q-SORT About page

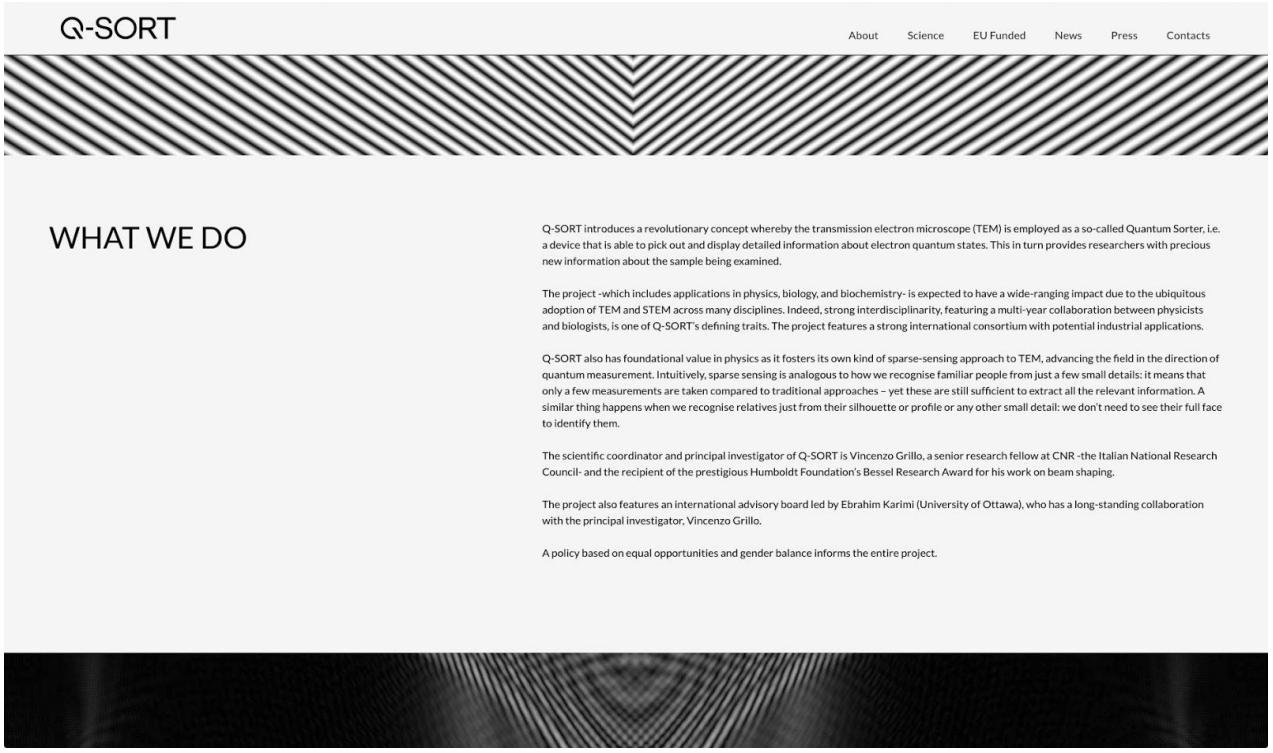


Figure 13. Q-SORT About page

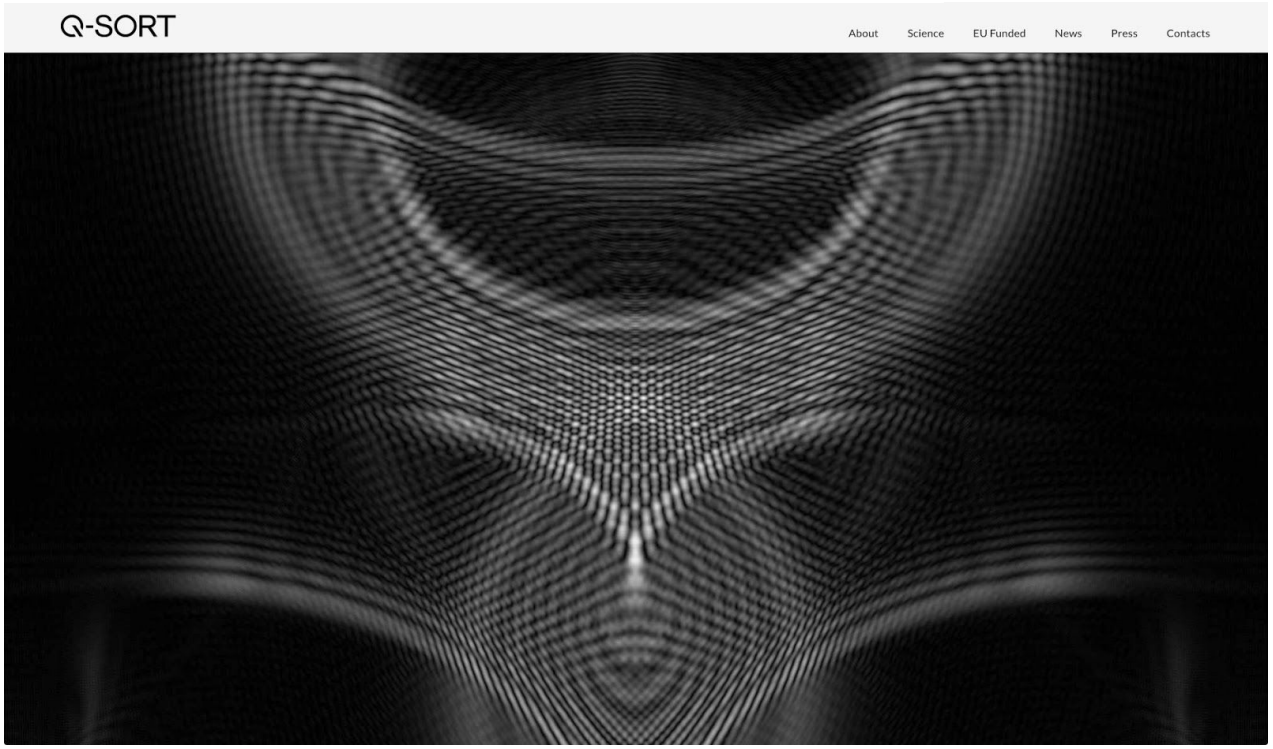


Figure 14. Q-SORT About page

EU Funded

A brief introduction to the EC and EC projects, with special emphasis on FET.

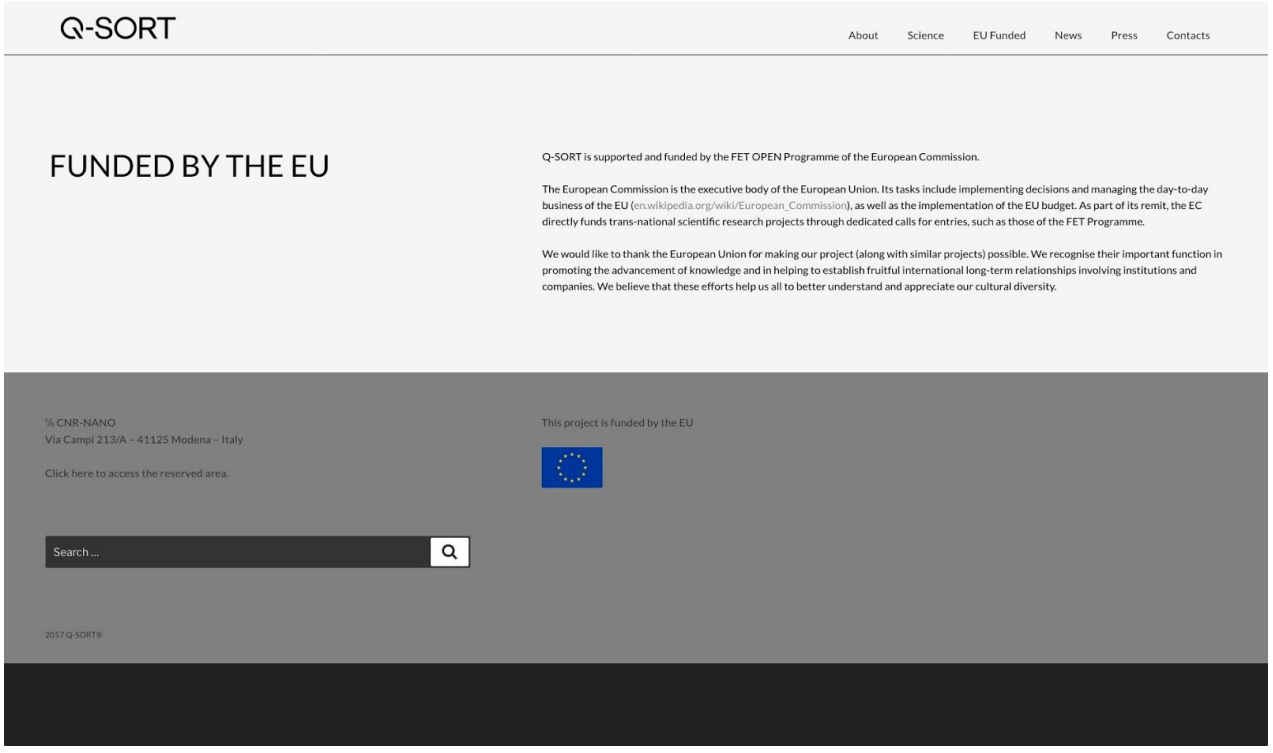


Figure 15. Q-SORT EU Funded page

Science

A concise description of the scientific background of the project, providing links to further reading.

News

The news section provides news about the project in a standard, easy-to-read format. It is strongly connected with the social networking environment (Facebook, Twitter, Instagram). This is a critical step towards successful dissemination and community engagement in this technological age. As far as possible, images will be employed to communicate each entry.

This section will feature news and events that are relevant for the Q-SORT community, including diary-like updates about Q-SORT progress, notices of events organised by Q-SORT, of events organised by other institutions, of projects that have invited Q-SORT partners to promote the project's activities, and of other events of interest for the Q-SORT community and target users.

Press

This section features useful material for journalists and media people such as the partners' press offices. The latest Q-SORT press release, project photos, and the Q-SORT logo can be downloaded directly through the following three links:

Download the latest press release

Download press photos

Download the Q-SORT logo

Photos come as an individual zip file, as do various versions of the logo intended for different uses, as per Figure 1.

Further promotional material such as brochures, posters, etc. will be added as the project progresses for download and use by partners in dissemination/outreach events. There will also be an outreach kit that can be used by the project partners as well as by external users in order to produce customised promotional posts.

Contact

An easy-to-read access point for communicating with the Q-SORT team.

2.2.3 Reserved area

A specific section of the website is reserved for the Q-SORT partners, the EC Project Officer and the reviewers. Access to this section requires the entry of a username/password. The related link is placed at the bottom of the home page, so as to declutter the main navigation bar.

The following sections describe the information and services that are hosted in this private area.

THE Q-SORT REPOSITORY

The Project repository stores all the documentation with restricted circulation, such as:

- lists of deliverables, including peer reviewers and due dates
- Grant Agreement, Description of Work and all the official documents exchanged with the EC to set up and start the project
- final deliverables submitted to the EC

- information related to the Project meetings: project presentations shown during the meetings, agenda, minutes, etc.
- administrative documents (timesheets, periodic reports, etc.)
- document templates such as those prepared for deliverables, presentations, and reporting of dissemination activities
- any other document determined to be useful for the Project partners

The repository is accessed via a user-friendly interface that allows a simple, fast and secure access to large files and documents.

The navigation tree contains one folder per Work Package, each of which is managed autonomously by a WP leader.

Each authorized partner can upload/download/replace files and create directories. Each page of the tree displays the size of the uploaded files as well as the date of their uploading.

Only the administrator is allowed to delete files and manage sharing and permissions settings.

A specific folder will be dedicated to the Review Meetings, which aim to collect relevant documents for PO and reviewers' easy access (it will include documents such as periodic partners' cost claims, deliverables under review, Description of Work, the review agenda and related practical information, review reports and any other relevant material).

THE Q-SORT CALENDAR

The Q-SORT reserved area embeds a Google Calendar to offer an easy access point to important professional events related to the Project. Google Calendar is a free time-management web application that will help the consortium in sharing events of common interest.

All the users authorized to access the reserved area can view the Calendar, but only the WP/Task leaders have permission to create new events.

2.3 Reception of the Q-SORT website and further work after first release

The website was well received by both the Project Partners and the general audience[2]. Expressions of interest for QED's work also came via email as a result.

Partners were encouraged to provide ongoing feedback. As a result, a number of small adjustments was made as a result, albeit without changing the overall website structure. Changes were also made according to new needs arising from ongoing Project activities. In this sense, a project website is never really 'finished', but keeps evolving in order to better satisfy project needs or to accommodate new developments.

The most important changes were the addition of a wholly new section devoted to the first Q-SORT International Conference, a renovated landing page, a People page devoted to key project personnel.

Conference

A specific page and several subpages devoted to the first Q-SORT International Conference were set up. This Conference section was devised so as to be easy to expand, in order to accommodate future Q-SORT conferences. The leitmotif of the Conference subpages was given by the individual elements of the Q-SORT logo, depicted in red. The colour red was introduced for the first time in the otherwise strictly monochrome website, to put emphasis on the upcoming conference, but also to signify a live event - as opposed to purely online content.

Broadly speaking, the Conference section featured two successive layouts, devised in response to the evolving conference needs:

[2] E.g.: "The website looks amazing. My compliments to those who designed and built it!" Partner FEI Thermo-Fisher"; It looks wonderful! It works particularly well on mobile devices." Partner FZJ

At first, a so-called 'booking' layout was set up, featuring stronger emphasis on how to participate in the conference, how to submit a talk or a poster, how to book travel and accommodation.

Secondly, after enrolment was closed, a ‘pre-conference’ layout was deployed, with greater emphasis on travel details, practicalities, the up-to-date programme, and so on.

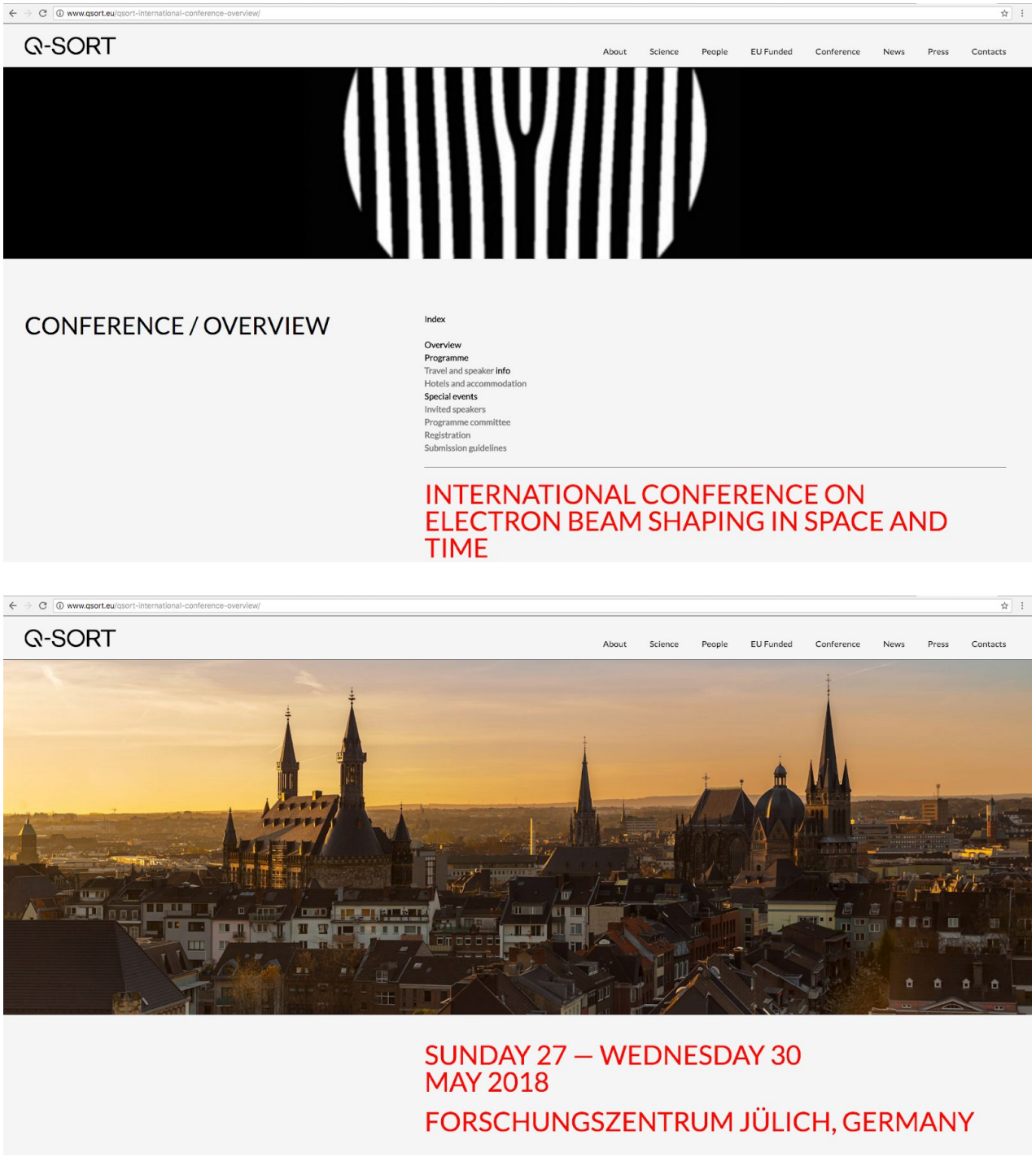


Figure 16. Q-SORT Conference main page

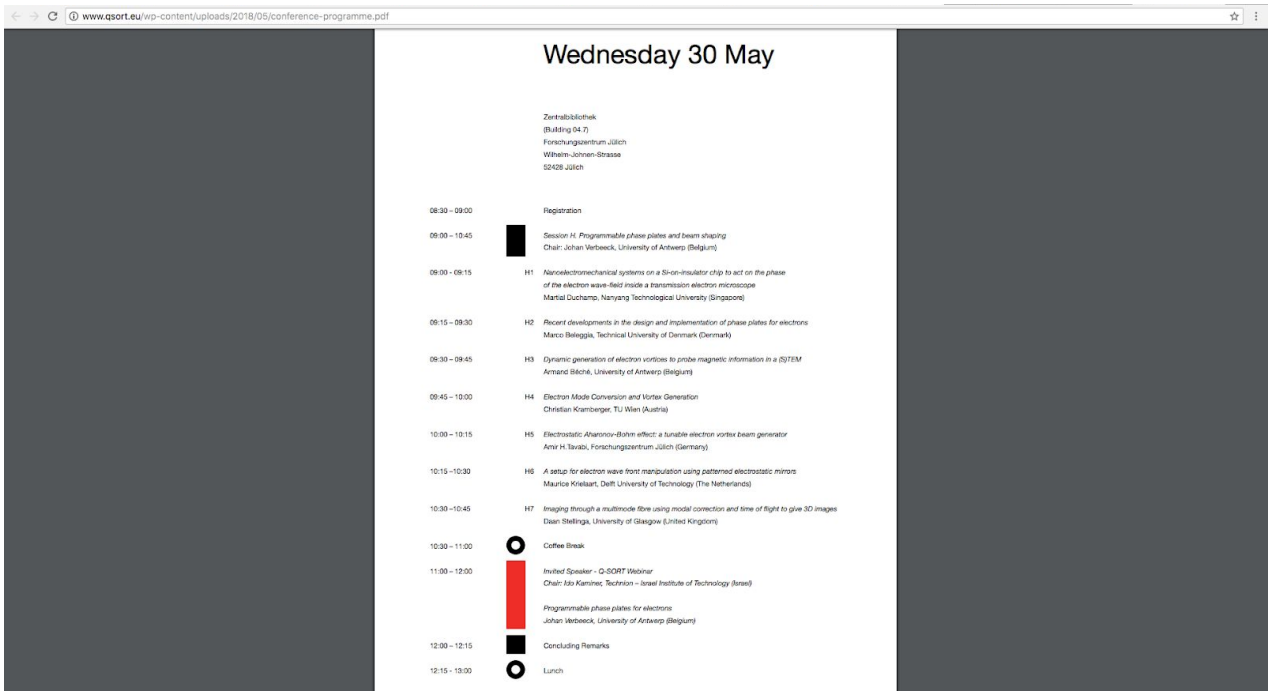


Figure 17. Q-SORT Programme subpage (PDF)

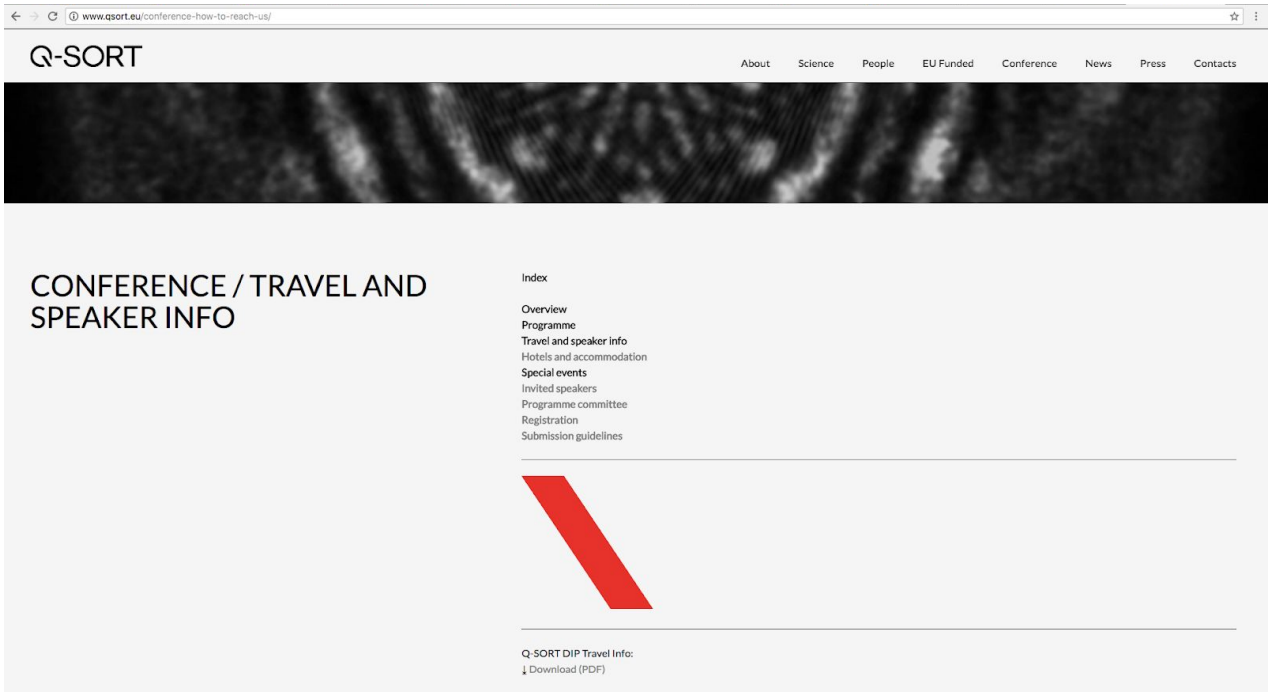


Figure 18. Q-SORT Travel and speaker info subpage

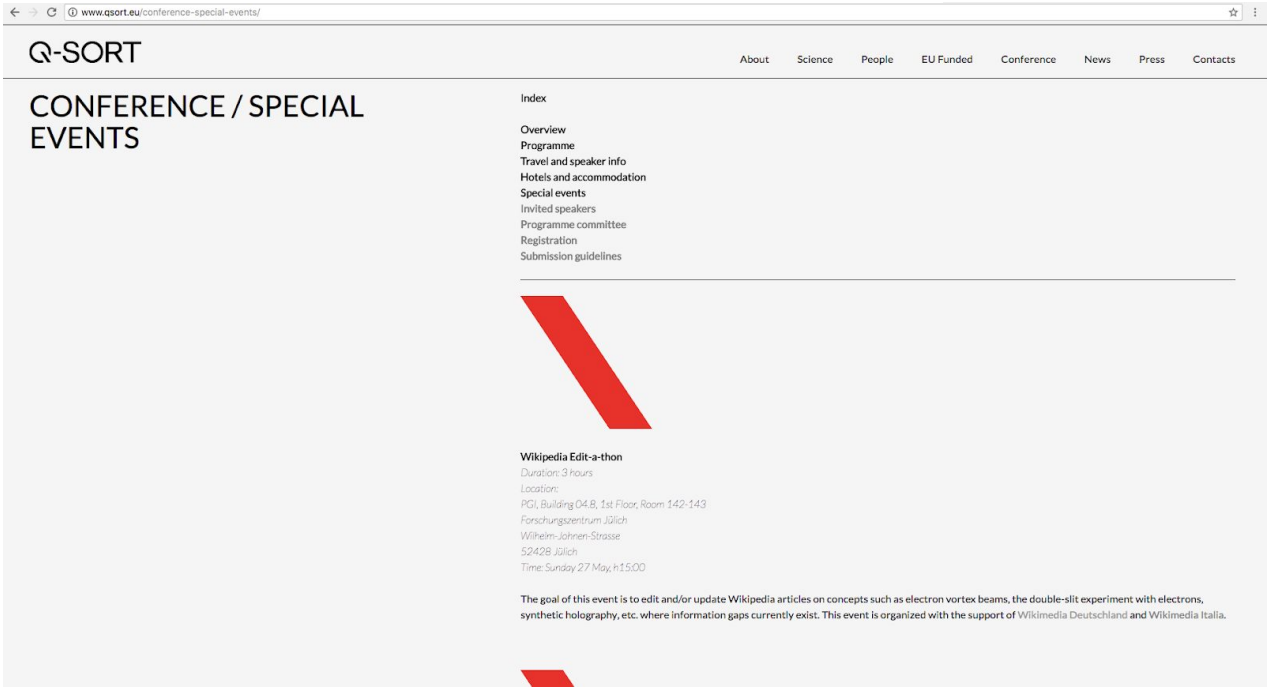


Figure 19. Q-SORT Special events subpage

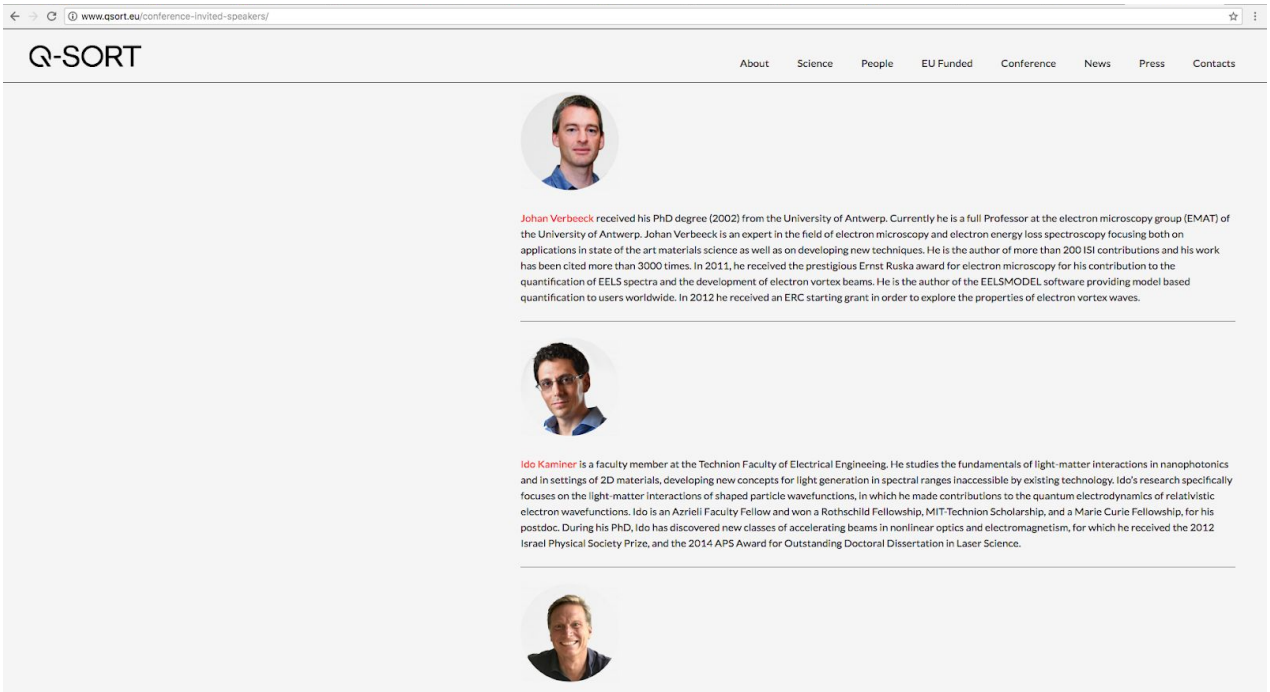


Figure 20. Q-SORT Invited speakers subpage

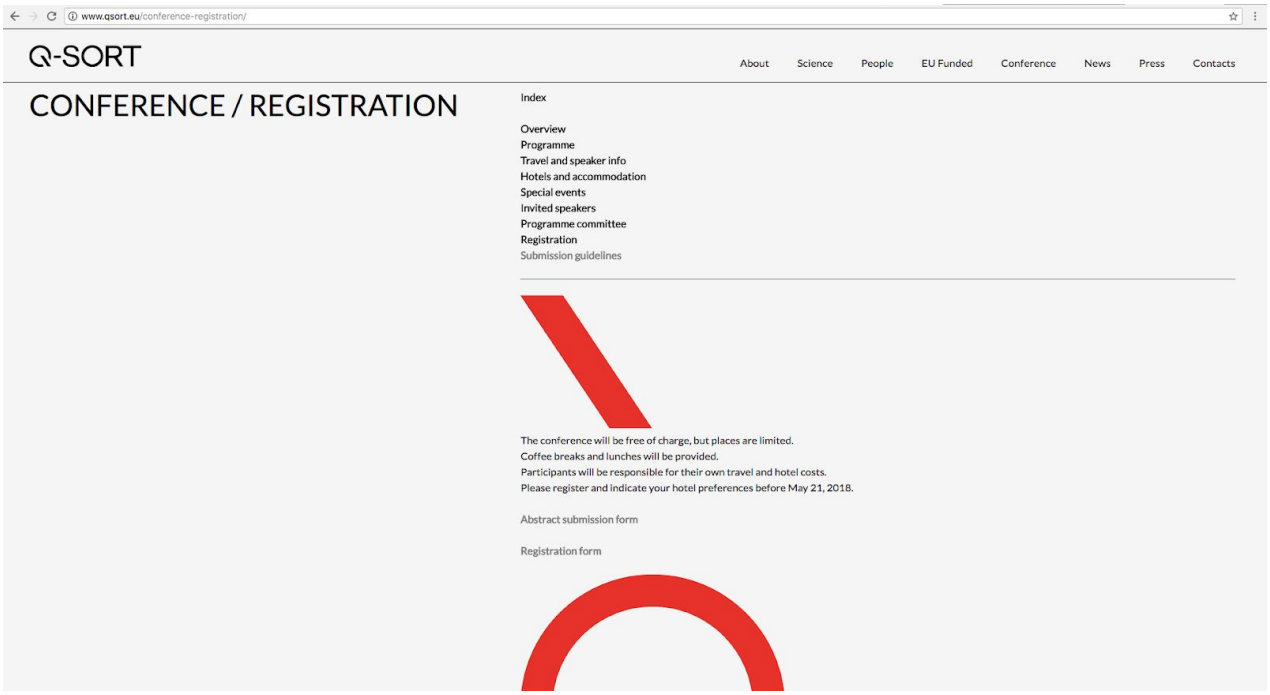


Figure 21. Q-SORT Registration subpage

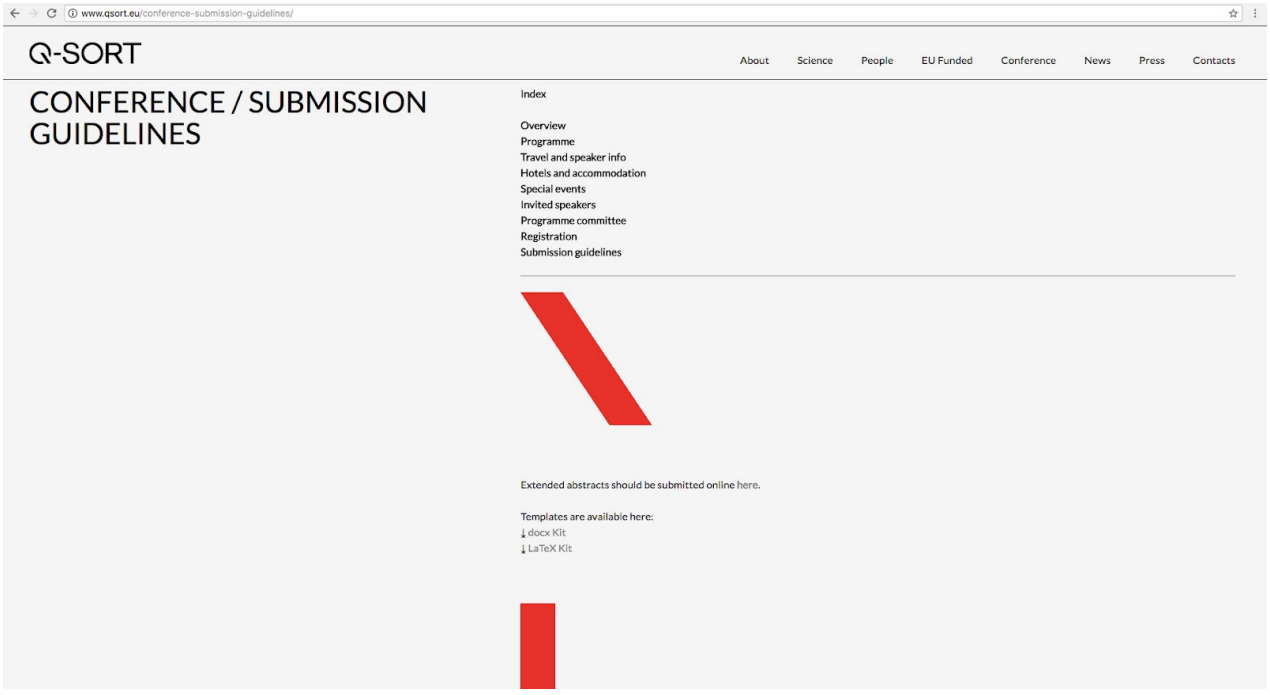


Figure 22. Q-SORT Submission guidelines subpage

Landing page

A red announcement of the upcoming Q-SORT International Conference was added to the landing page, together with a colour photo of Aachen, the closest city to the conference location, were participants would be staying. This first use of colour in the otherwise strictly monochrome website was meant to emphasise the upcoming live event.

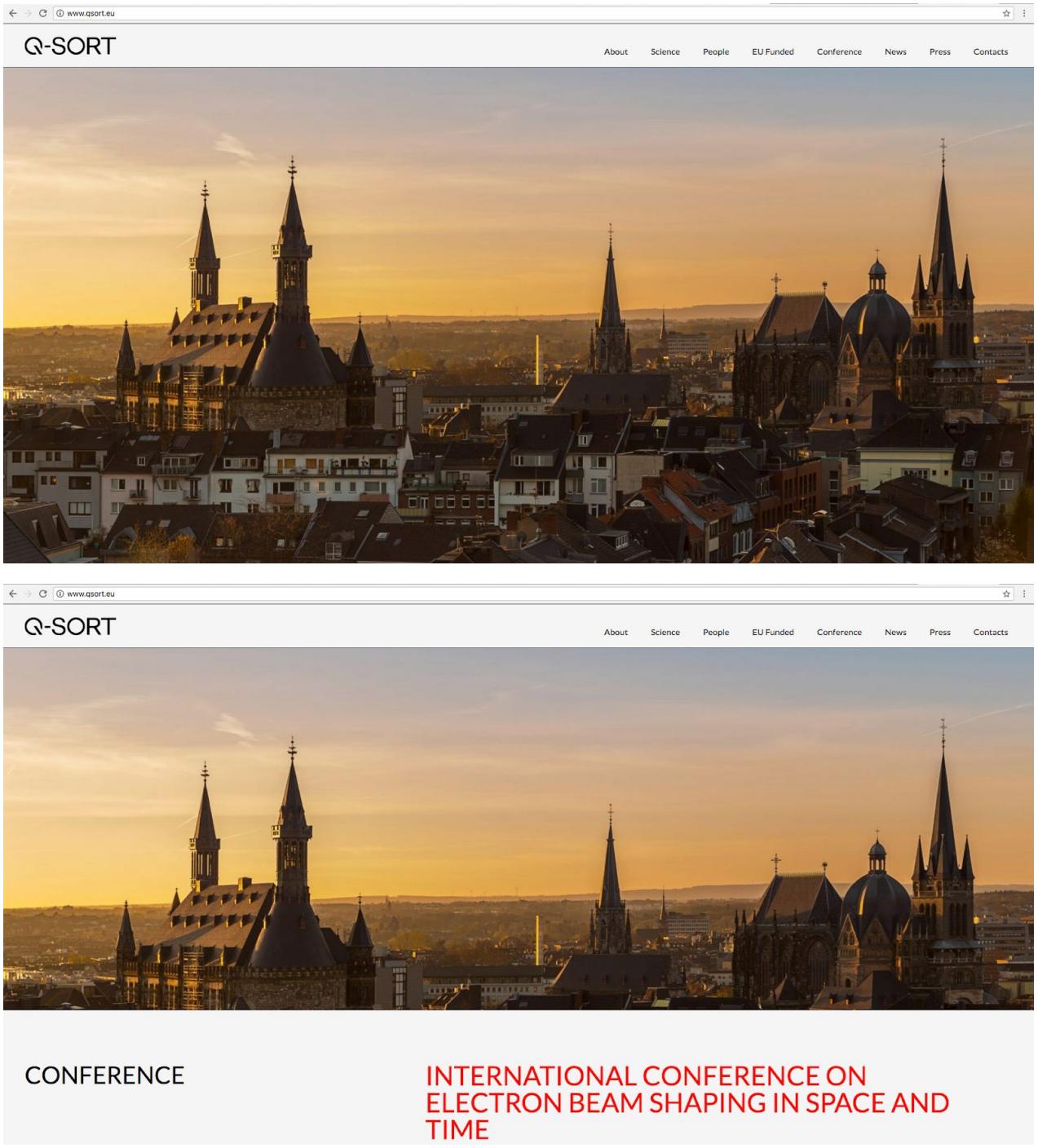
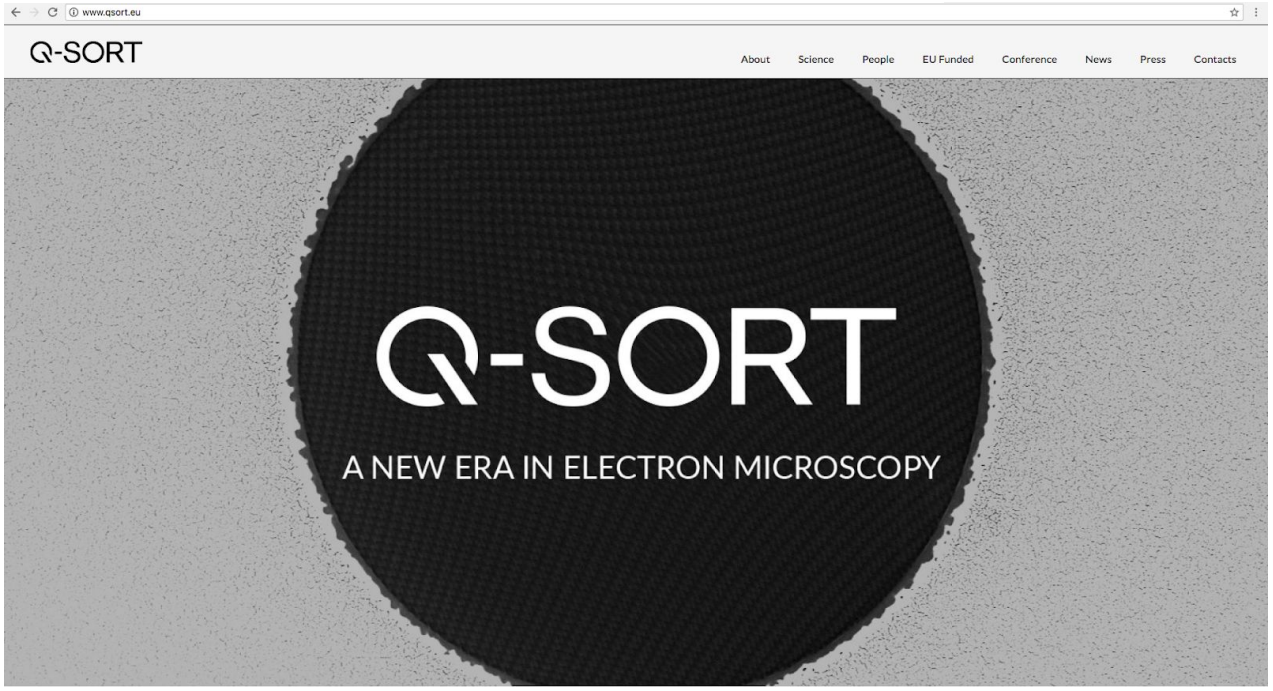
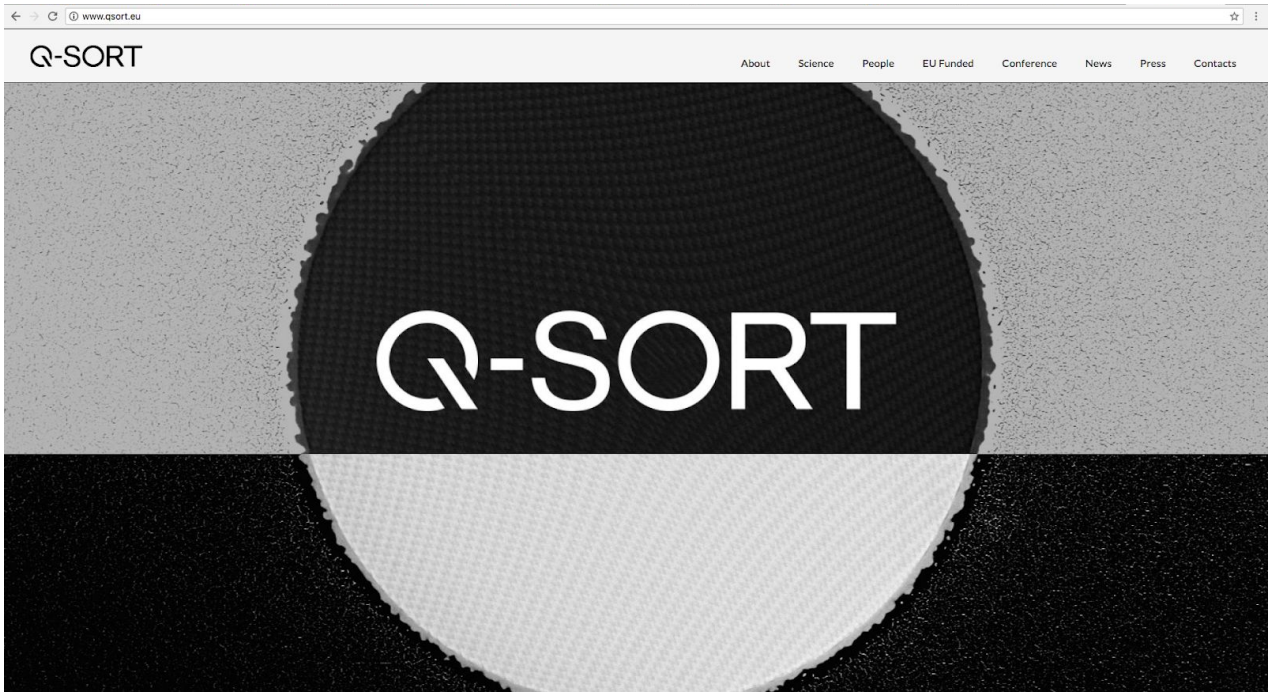


Figure 23. Q-SORT International Conference announcement on Landing page

The Q-SORT logo on the very first screen features a new animation that is effected by the scrolling, which highlights the connection between the project logo and its constituent parts (see pictures).


www.qsort.eu
Q-SORT
About
Science
People
EU Funded
Conference
News
Press
Contacts
Q-SORT
A NEW ERA IN ELECTRON MICROSCOPY


www.qsort.eu
Q-SORT
About
Science
People
EU Funded
Conference
News
Press
Contacts
Q-SORT

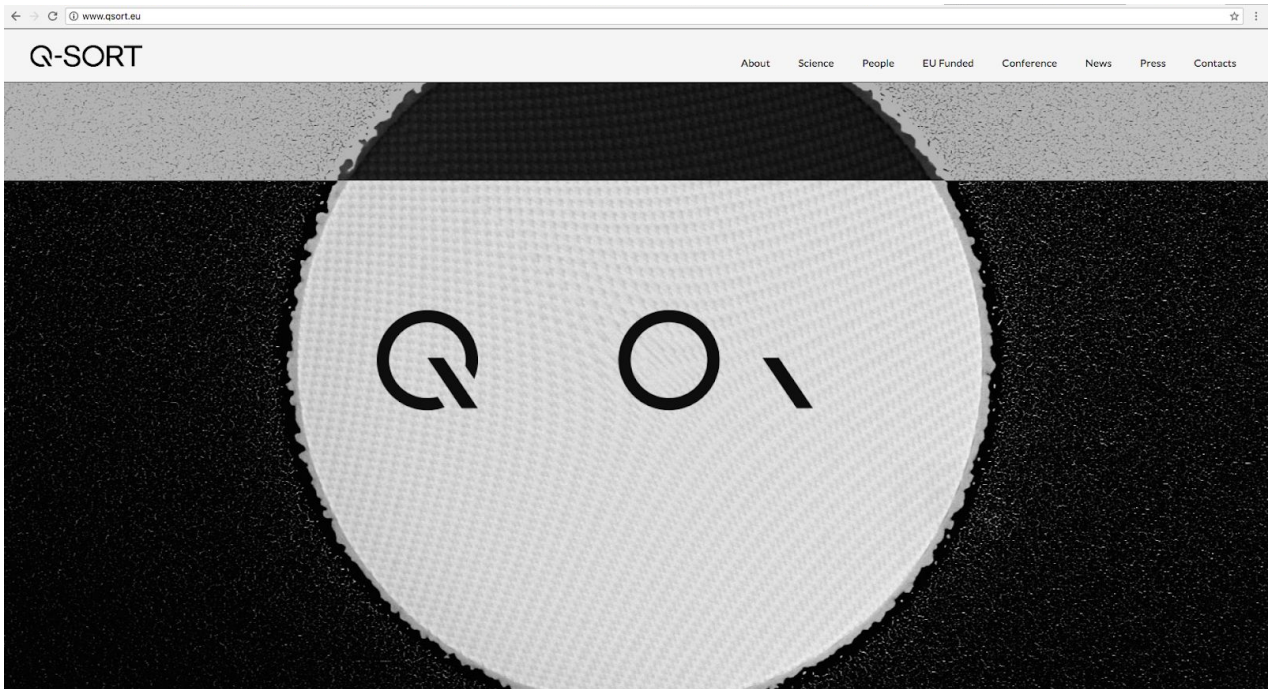


Figure 24. Q-SORT new animated logo on Landing page

People

The People page was set up in order to offer details of the project staff (photos, biographies, recently completed projects). Now it feautures only the Principal Investigator bio and it will be updated during the next 6 months.

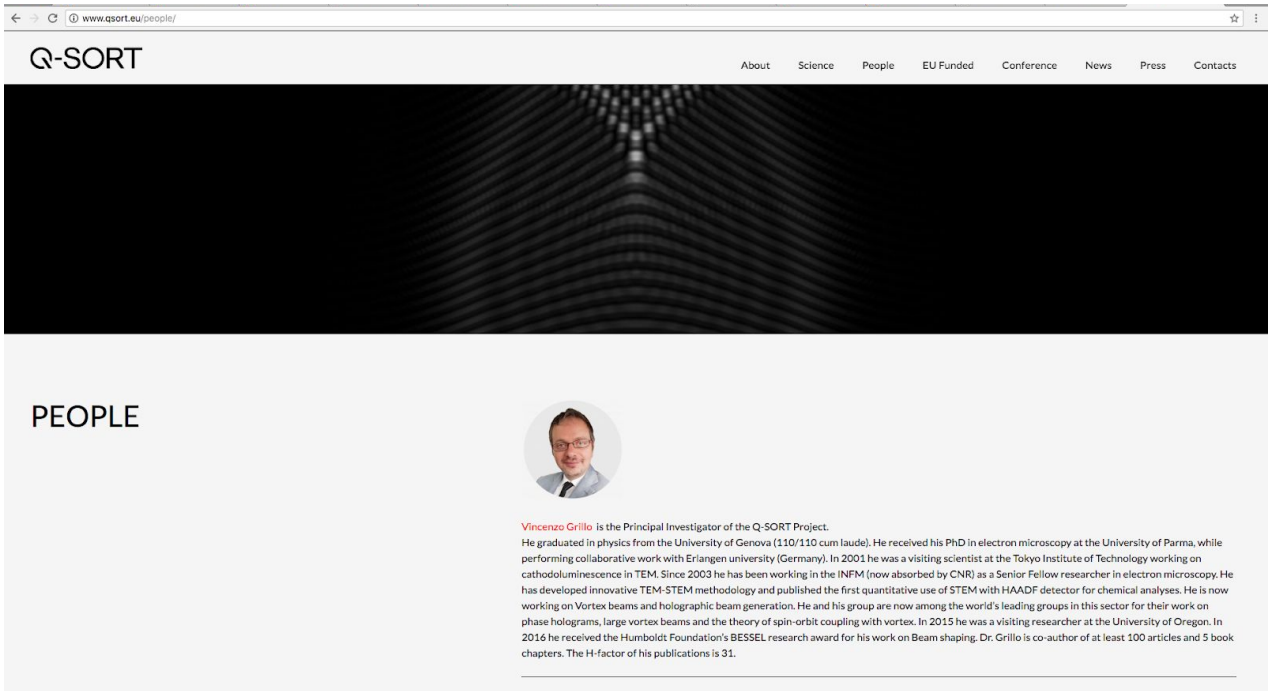


Figure 25. Q-SORT People page

3 TECHNICAL INFRASTRUCTURE

The Content Management System that has been selected as the base technology for the Q-SORT website is WordPress[3] - is a free, open-source blog tool and publishing platform licensed under the GNU General Public License (GPL). WordPress is powered by PHP and MySQL and can easily be customised into a Content Management System (CMS). It has been selected as the base technology for the implementation of the Q-SORT website because of its flexibility, its user-friendly setup and usage, and its provision of a high level of personalisation. Moreover, its widespread availability has engendered a rich ecosystem of plug-ins, which allow users and developers to extend its functionality beyond the features that come with the base installation. This ensemble of qualities makes WordPress the ideal facilitator of a versatile CMS. Moreover, since it is available for free, it represents maximum value for money.

WordPress has a web template system that uses a template processor. The processor makes it easy to re-arrange widgets and install and switch between themes. The PHP and HTML code used by the themes can also be edited for more advanced customizations.

WordPress has a number of useful features, which include integrated link management, a search-engine-friendly, clean permalink structure; the ability to assign nested, multiple categories for articles; support for tagging of posts and articles. Automatic filters are also included, providing standardised formatting and styling of text within articles.

Multimedia files such as images, videos, flash movies, image galleries, slideshows, etc. can be uploaded and linked to (or displayed in) pages and articles, or embedded directly from other places (e.g. YouTube).

WordPress provides several ready-to-use options for the display of website archives. They can be be arranged according to year, month, week, day, category, or author. New archives can be created and easily linked. Since WordPress generates pages dynamically, all these archive pages come at no additional space-cost to the server.

Wordpress' built-in search functionality allows visitors to the website to search for terms they are interested in; the search terms are highlighted, making it is even easier for them to find what they were looking for.

WordPress supports the Trackback[4] and Pingback[5] standards for displaying links to other sites that have themselves been linked to a post or article.

4 SERVICES AND OTHER WEBPAGES

4.1 SOCIAL NETWORK INTEGRATION

The Q-SORT website allows for easy, one-click sharing, bookmarking, and emailing of articles and pages through the provision of a large variety of services.

In particular, AddThis is the add-on tool intended to make sharing and bookmarking simple, and to place at the immediate disposition of users all of the leading web 2.0 social networking, bookmarking, blogging, and email services[6]. Once added, visitors to the website can bookmark an item using through services such as Facebook, Twitter, Pinterest, LinkedIn, Google+ and many more. Q-SORT Facebook, Twitter, and Instagram pages will be created in order to engage a wider public made up of both professionals and nonprofessionals.

The updating of the Facebook page is done either automatically or manually by the authorised managers; automatic updating is based on feeds taken from the Q-SORT website and the posting of news and select memes of interest to the Q-SORT target audience. Authorised managers can manually post information

[3] www.wordpress.org
[4] http://www.sixapart.com/pronet/docs/trackback_spec
[5] http://www.hixie.ch/specs/pingback/pingback
[6] The code is available at http://www.addthis.com/

about events or other relevant information related to the project or partners, as well as select content proposed by the partners. QED is responsible for managing the social network pages.

4.2 WEBSITE STATISTICS

Website usage is monitored through Google Analytics, a very popular Web analytics solution that provides many insights into one's website traffic and marketing effectiveness. It allows for Advanced Segmentation, Custom Reports, Advanced Analysis Tools, Analytics Intelligence, Custom Variables, and Data exports[7].

Google Analytics can track visitors from all referrers, including search engines, display advertising, pay-per-click networks, email marketing, and digital 'collateral' such as links within PDF documents.

The service offers the following specific statistical insights:

- number of visits and number of unique visitors
- visit duration and last visits
- domains/countries of visitors
- host list, last visits and unresolved IP addresses list, most viewed, entry and exit pages
- browsers used
- robot visits
- search engines, keyphrases and keywords used to arrive at site

Statistics are managed by the webmaster; they are analysed on a tri-monthly basis in order to verify trends and variations.

4.3 FURTHER WORK ON DATA GATHERING AFTER FIRST WEBSITE RELEASE

In order to gain more insights into user behaviour, two scripts were recently added to the Q-SORT website code:

1. Facebook Pixel was installed in order to provide more insight on user behaviour besides Google Analytics, and better integration with Facebook. This is especially useful given the emphasis we have put so far on Facebook as a tool for outreach.
2. The free version of Hotjar was also installed (www.hotjar.com) in order to better characterise the effectiveness of the graphical user interface (GUI) of the Website.

Insights provided by these two tools will be discussed in future deliverables, so as to allow for sufficiently meaningful amounts of data to accumulate.

5 THE CONTENT

5.1 EDITORIAL TEAM

The **Editorial Team** is comprised of the following members:

- the Communication and Dissemination Manager (Dr. Luca Giberti, QED) and the Project Coordinator (Dr. Vincenzo Grillo, CNR) are in charge of deciding overall strategy and monitoring the activities;
- the Communication and Dissemination Executive (Dr. Raffaella Santucci, QED) is in charge of producing, proofreading, checking, and validating the content and publishing the content on the website.

The content to be published on the website is provided by all partners; contributions can be sent to the editorial team.

[7] For individual features, see http://www.google.com/intl/en_uk/analytics/features.html

An **Editorial Board** for the website will be established for quality control of the texts of the website through an internal call for participation. Editors in Chief of the Board are Vincenzo Grillo and Luca Giberti. The texts to be published on the website will be first shared and agreed upon between the members of the Board. In the event of dispute, a simple one-vote-per-partner, with majority voting, can be used for decision making. In a tied situation, the Editors in Chief have the casting vote.

Other content posted only on social media, such as individual images or shared links to other online resources, will be emailed *ex post* to the members of the Editorial Board.

5.2 INTELLECTUAL PROPERTY RIGHTS

The Q-SORT Project is the sole responsible party for content published on the website; it does not represent the opinion of the European Commission.

The text of the Q-SORT web pages is licensed under a Creative Commons Attribution 3.0 (by) license[8]. This means that users are free to share (copy, distribute, and transmit), remix (adapt), and make commercial use of the website's editorial content under the following conditions:

- **Attribution** — Work must be attributed in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work)

It must be noted, however, that the rights to images and videos published on the website are dependent upon the respective attributions of each content provider and may not fall under the above CC licence. Each image has a specific caption with all relevant information.

All other specific contents may be licensed differently according to agreements with single authors.

[8] http://creativecommons.org/licenses/by/3.0/

6 CONCLUSION

This deliverable describes the work carried out to define the Project's visual identity and to implement the Project's website.

It has to be noted that the current release of this deliverable presents the first stage in the development of the website. The website will be continuously and timely updated along the project's lifetime, and its structure may change to take into account new requirements.

For the duration of the Project's life, the editorial team will continue to:

- constantly update the content of the website
- publish news and events in a timely fashion
- make project deliverables and other documentation available in a timely fashion.

ANNEX 1: LIST OF THE PAGES IN THE SECOND RELEASE OF THE Q-SORT WEBSITE

Q-SORT [=landing page]

About
Who we are
What we do
Science
People (NEW!)
EU Funded
Conference (NEW!)
Index
Overview
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Travel and speaker info
Hotels and accommodation
Special events
Invited speakers
Programme committee
Registration
Submission guidelines

Press

Download the latest Q-SORT press release

Download Q-SORT press photos

Download the Q-SORT logo

Contact

Reserved area
<EU flag>
This project is funded by the European Union

ABOUT THE PROJECT

Who we are

The Q-SORT Consortium comprises some of the top players in the world of orbital angular momentum (OAM), quantum optics, transmission electron microscopy (TEM) including cryoTEM:

CNR-NANO (Project Coordinator) - Italy
Forschungszentrum Jülich - Germany
FEI (Thermo Fisher Scientific) - The Netherlands

Max Planck Institut - Germany
University of Glasgow - United Kingdom
QED Film & Stage Productions Ltd. - United Kingdom
Università di Modena e Reggio Emilia - Italy
Maastricht University - The Netherlands

The Consortium has been tailor-made in order to reach project goals as quickly and effectively as possible, but also to attain maximum impact in the scientific world and in society at large. The wide cross-section of skills and geographical spread in the Consortium ensure that all requirements of *responsiveness and adaptive change, diversity and inclusion, openness and transparency, anticipation and reflection* are satisfied.

Members of the Consortium complement each other thus: CNR, Forschungszentrum Jülich, and University of Modena and Reggio Emilia are world leaders in electron-beam shaping; University of Glasgow and Max Planck Institute are pioneers in OAM and quantum optics; Maastricht University is an important innovator in protein studies; Thermo Fisher (formerly FEI) is a major world-wide developer and manufacturer of microscopes; QED is a young SME from the creative industry led by an award-winning producer-director.

What we do

Q-SORT introduces a revolutionary concept whereby the transmission electron microscope (TEM) is employed as a so-called **Quantum Sorter**, i.e. a device that is able to pick out and display detailed information about electron quantum states. This in turn provides researchers with precious new information about the sample being examined.

The project -which includes applications in physics, biology, and biochemistry- is expected to have a wide-ranging impact due to the ubiquitous adoption of TEM and STEM across many disciplines. Indeed, strong interdisciplinarity, featuring a multi-year collaboration between physicists and biologists, is one of Q-SORT's defining traits. The project features a strong international consortium with potential industrial applications.

Q-SORT also has foundational value in physics as it fosters its own kind of sparse-sensing approach to TEM, advancing the field in the direction of quantum measurement. Intuitively, sparse sensing is analogous to how we recognise familiar people from just a few small details: it means that only a few measurements are taken compared to traditional approaches - yet these are still sufficient to extract all the relevant information. A similar thing happens when we recognise relatives just from their silhouette or profile or any other small detail: we don't need to see their full face to identify them.

The scientific coordinator and principal investigator of Q-SORT is **Vincenzo Grillo**, a senior research fellow at CNR -the Italian National Research Council- and the recipient of the prestigious Humboldt Foundation's Bessel Research Award for his work on beam shaping.

The project also features an international advisory board led by Ebrahim Karimi (University of Ottawa), who has a long-standing collaboration with the principal investigator, Vincenzo Grillo.

A policy based on equal opportunities and gender balance informs the entire project.

People (NEW!)

Vincenzo Grillo is the Principal Investigator of the Q-SORT Project.
He graduated in physics from the University of Genova (110/110 cum laude). He received his PhD in electron microscopy at the University of Parma, while performing collaborative work with Erlangen university (Germany). In 2001 he was a visiting scientist at the Tokyo Institute of Technology working on

cathodoluminescence in TEM. Since 2003 he has been working in the INFM (now absorbed by CNR) as a Senior Fellow researcher in electron microscopy. He has developed innovative TEM-STEM methodology and published the first quantitative use of STEM with HAADF detector for chemical analyses. He is now working on Vortex beams and holographic beam generation. He and his group are now among the world's leading groups in this sector for their work on phase holograms, large vortex beams and the theory of spin-orbit coupling with vortex. In 2015 he was a visiting researcher at the University of Oregon. In 2016 he received the Humboldt Foundation's BESSEL research award for his work on Beam shaping. Dr. Grillo is co-author of at least 100 articles and 5 book chapters. The H-factor of his publications is 31.

FUNDED BY THE EU

Q-SORT is supported and funded by the FET OPEN Programme of the European Commission.

The European Commission is the executive body of the European Union. Its tasks include implementing decisions and managing the day-to-day business of the EU (en.wikipedia.org/wiki/European_Commission), as well as the implementation of the EU budget. As part of its remit, the EC directly funds trans-national scientific research projects through dedicated calls for entries, such as those of the FET Programme.

We would like to thank the European Union for making our project (along with similar projects) possible. We recognise their important function in promoting the advancement of knowledge and in helping to establish fruitful international long-term relationships involving institutions and companies. We believe that these efforts help us all to better understand and appreciate our cultural diversity.

CONFERENCE (NEW!!)

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CONFERENCE / OVERVIEW

INTERNATIONAL CONFERENCE ON ELECTRON BEAM SHAPING IN SPACE AND TIME

SUNDAY 27 — WEDNESDAY 30

MAY 2018

FORSCHUNGSZENTRUM JÜLICH, GERMANY

This conference is organized jointly by the partners of the projects

Quantum Sorter – A new Measurement Paradigm in Electron Microscopy (H2020-FETOPEN)

Science and Applications of Electron Wavefunctions Shaped and Manipulated by Engineered Nanoholograms (Deutsch-Israelische Projektkoocperation grant).

With the support of Forschungszentrum Jülich.

This conference aims to address challenges and opportunities in electron beam shaping and its applications. It will showcase cutting-edge theoretical and experimental developments in the form of invited plenary talks and contributed presentations and include space for product displays. There will be opportunities for networking and discussion, as well as an edit-a-thon, an interdisciplinary workshop and a webinar. Topics sought for the program include (but are not limited to):

Coherent manipulation of electron wavefunctions by light interaction and matter, possibly inspired by recent progress in light (quantum) optics, to produce functional electron waveforms.

Studies of the foundational aspects of quantum physics and their applications to materials science.

Ideas and methods for near-interaction-free and dose-effective imaging of matter.

This conference is hosted by the Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons, which is a joint facility of Forschungszentrum Jülich and RWTH Aachen University.

Organisers:

Ady Arie, Tel Aviv University (Israel)

Rafal E. Dunin-Borkowski, Forschungszentrum Jülich (Germany)

Vincenzo Grillo, CNR- NANO (Italy)

 Download the pdf of the programme

CONFERENCE PROGRAMME
Sunday 27 May

PGI, Building 04.8, 1st Floor, Room 142-143 Forschungszentrum Jülich Wilhelm-Johnen-Strasse 52428 Jülich

Welcome

Pre-Conference Wikipedia Edit-a-Thon

Monday 28 May

Zentralbibliothek

(Building 04.7) Forschungszentrum Jülich Wilhelm-Johnen-Strasse 52428 Jülich

Registration

Welcome and Institutional Delegates

Session A. Low Dose Methods

Chair: Rafal Dunin-Borkowski, Forschungszentrum Jülich (Germany)

A1 Low-dose cryo electron ptychography via non-convex Bayesian optimizationPhilipp Pelz, Max Planck Institute (Germany)

A2 Production of arbitrary phase apertures for electron ptychography beamsWouter Van den Broek, Humboldt University of Berlin (Germany)

A3 Next generation sample preparation for fully automated cryo-EM analysis of macromolecular structures and cells

Peter Peters, Maastricht University (The Netherlands)

Remote demonstration from the microscope

Coffee Break

Session B. EMCD, Plasmons and Quantum Phenomena

Chair: Stefano Frabboni, University of Modena and Reggio Emilia (Italy)

B1 Measuring the phase and transverse fields of plasmonic excitationsGiulio Guzzinati, University of Antwerp (Belgium)

B2 Atomic scale imaging of magnetic circular dichroism by achromatic spatially-resolved electron energy-loss magnetic chiral dichroism

Xiaoyan Zhong, Tsinghua University (PRC)

B3 Theoretical study of the interaction between phase-shaped electrons and surface plasmon modesHugo Lourenço-Martins, University of Paris-Sud (France)

B4 Investigating the proximity of magnetic dichroic signal by atomic sized electron vortex and aberrated beam.

Devendra Negi, Uppsala University (Sweden)

B5 The cubic phase in quantum mechanics and hydrodynamicsMatthias Zimmermann, Ulm University (Germany)

B6 The Cubic Phases of Wave packets in Linear Potential

Georgi Gary Rozenman, Tel Aviv University (Israel) Lunch Break

Invited Speaker - Q-SORT Webinar

Chair: Wolfang Schleich, Ulm University (Germany)

Low-damage multi-pass electron microscopy

Mark Kasevich, Stanford University (USA)

Session C. QEM and quantum phenomena

Chair: Wolfang Schleich, Ulm University (Germany)

C1 Optical multi-pass microscopy

Thomas Juffmann, University of Vienna (Austria)

C2 A 10keV Multi-Pass Electron Microscope

Stewart Koppell, Stanford University (USA)

C3 Aberration-Corrected Quantum Electron Microscopy

Marco Turchetti, Massachusetts Institute of Technology (USA)

C4 Simulated Quantum Electron Microscope Images

Yuri Van Staaden, Delft University of Technology (The Netherlands)

C5 A design for combining multi-pass and OAM sorter for dose effective magnetic measurements

Vincenzo Grillo, National Research Council (Italy)

Coffee Break

Round Table: Quantum concepts in electron microscopyChair: Vincenzo Grillo, National Research Council (Italy)

Special Seminar: Wolfgang Schleich, Ulm University (Germany)

Social Dinner

Steakhaus El Toro, Große Rurstraße 34, 52428 Jülich

Tuesday 29 May

Zentralbibliothek

(Building 04.7) Forschungszentrum Jülich Wilhelm-Johnen-Strasse 52428 Jülich

Registration

Session D. UTEM-Time shaping

Chair: Avraham Gover, Tel Aviv University (Israel)

D1 Ultrafast Transmission Electron Microscopy with High-Coherence Electron PulsesTyler Harvey, University of Göttingen (Germany)

D2 meV Resolution in Laser-Assisted Energy-Filtered Transmission Electron MicroscopyEnrico Pomarico, École polytechnique fédérale de Lausanne (Switzerland)

D3 Temporal manipulation of sub-relativistic electron beams using light and matterRoy Shiloh, Friedrich-Alexander University (Germany)

D4 Attosecond coherent control of a free-electron wave-function via semi-infinite light fieldsand plasmon polaritons

Giovanni Maria Vanacore, École polytechnique fédérale de Lausanne (Switzerland)

D5 The ultrafast and ultracold electron source

Jim Franssen, Eindhoven University (The Netherlands)

Coffee Break

Session E. Light-electron interaction

Chair: Ido Kaminer, Technion – Israel Institute of Technology (Israel)

E1 History-Dependent Radiative Interaction of Single Electron Quantum WavepacketAvraham Gover, Tel Aviv University (Israel)

E2 Tailoring the Spectral and Angular Response of Smith-Purcell RadiationRoei Remez, Tel Aviv University (Israel)

E3 Spontaneous and Stimulated Radiative emission

of modulated free-electron quantum wavepackets - QED AnalysisYiming Pan, Tel Aviv University (Israel)

E4 Electron-light interaction in Wigner phase spacePeter Kling, Ulm University (Germany)

Lunch Break

Q-SORT Science Bash Schlosskapelle

Gymnasium Zitadelle

In der Zitadelle, 52428 Jülich

Speaker: Peter Peters

Title: Beauty and benefits of nanobiology

Session F. Phase plates and beam shapingChair: Ady Arie, Tel Aviv University (Israel)

F1 Experimental realization of a cylindrical quantum basis set for bandwidth-limited two dimensional electron wavefrontsJun Yuan, University of York (United Kingdom)

F2 Analysis of non-diffractive electron Bessel beams for potential application in electron microscopy

Simon Hettler, Karlsruhe Institute of Technology (Germany)

F3 Refractive wavefront shaping with a sculpted thin film enables aberration-corrected imagingon uncorrected electron microscopes

Peng-Han Lu, Forschungszentrum Jülich (Germany)

F4 Diffractive Guiding Using Slits

Moritz Carmesin, Helmholtz-Zentrum Dresden-Rossendorf (Germany)

F5 Generation of non-diffracting Bessel beams with amorphous carbon phase masks

Lukas Grünewald, Karlsruhe Institute of Technology (Germany)

Invited Speaker - Q-SORT Webinar Chair: Ady Arie, Tel Aviv University (Israel)

Shaping electron wavepackets with light; Shaping light with electron wavepackets

Ido Kaminer, Technion – Israel Institute of Technology (Israel)Coffee Break

Session P. Poster and Exhibitors

Social Dinner

Im Alten Zollhaus, Friedlandstraße 22, 52064 Aachen

Tuesday 29 May

Poster session

Zentralbibliothek

(Building 04.7) Forschungszentrum Jülich Wilhelm-Johnen-Strasse 52428 Jülich

P1 Holography in Scanning Transmission Electron Microscopy

Harvey, T.R.; Ophus, C.; Yasin, F.S.; Chess, J.J.; Pierce, J.S.; McMorran, B.J.

P2 Maximizing contrast in cryo-transmission electron microscopy with physical phase platesObermair, M.; Hettler, S.; Hsieh, C.; Marko, M., Gerthsen, D.

P3 The ultimate direct-electron detector and neural network

van Schayck P.; van Genderen E.,; Boulanger E.M.H.; Roussel L., Peters P.; Ravelli R.

P4 Realization of the Feynman-Young thought experiment:

Controlled electron interference in Fraunhofer and image space

Tavabi A.H.; Boothroyd C.B.; Yücelen E.; Frabboni S.; Gazzadi G.C.; Dunin-Borkowski R.E.; Pozzi G.

P5 MEMS fabrication processes for Tunable Amperometric Phase Plate devicesBalboni, R.; Roncaglia, A.

P6 Fabrication of an e-beam OAM sorter via Electron Beam Lithography

Rosi, P.; Medici, G.; Menozzi, C.; Venturi F.; Gazzadi, G.C.; Frabboni S.; Grillo, V.

P7 A Numerical Analysis of Interaction-Free Measurement for Low-Dose Imaging Using Conditional Sample Re-illumination

Agarwal, A.; Goyal, V.; Berggren, K. K.

Wednesday 30 May

Zentralbibliothek

(Building 04.7) Forschungszentrum Jülich Wilhelm-Johnen-Strasse 52428 Jülich

Registration

Session H. Programmable phase plates and beam shaping

Chair: Johan Verbeeck, University of Antwerp (Belgium)

H1 Nanoelectromechanical systems on a Si-on-insulator chip to act on the phaseof the electron wave-field inside a transmission electron microscope

Martial Duchamp, Nanyang Technological University (Singapore)

H2 Recent developments in the design and implementation of phase plates for electronsMarco Beleggia, Technical University of Denmark (Denmark)

H3 Dynamic generation of electron vortices to probe magnetic information in a (S)TEMArmand Béché, University of Antwerp (Belgium)

H4 Electron Mode Conversion and Vortex GenerationChristian Kramberger, TU Wien (Austria)

H5 Electrostatic Aharonov-Bohm effect: a tunable electron vortex beam generatorAmir H.Tavabi, Forschungszentrum Jülich (Germany)

H6 A setup for electron wave front manipulation using patterned electrostatic mirrorsMaurice Krielaart, Delft University of Technology (The Netherlands)

H7 Imaging through a multimode fibre using modal correction and time of flight to give 3D imagesDaan Stellinga, University of Glasgow (United Kingdom)

Coffee Break

Invited Speaker - Q-SORT Webinar

Chair: Ido Kaminer, Technion – Israel Institute of Technology (Israel)

Programmable phase plates for electrons

Johan Verbeeck, University of Antwerp (Belgium)

Concluding Remarks

Lunch

TRAVEL INFO

Q-SORT-DIP 2018 - TRAVEL INFO

Hashtag: #QSORTDIP2018

Follow us on FB: www.facebook.com/quantumsorter/

Local Contacts

Penghan Lu, p.lu@fz-juelich.de, +49 159 0535 6660.

Marie Göcking, m.goecking@fz-juelich.de

Event Locations

May 27, 2018: Pre-conference Wikipedia Edit-a-thon

PGI, Building 04.8, 1st Floor, Room 142-143

Forschungszentrum Jülich

Leo-Brandt-Straße, 52428 Jülich

May 28-30, 2018:

Zentralbibliothek (Building 04.7)

Forschungszentrum Jülich

Leo-Brandt-Straße, 52428 Jülich

Where to stay

For the convenience of all, Forschungszentrum Jülich has been kind enough to book a block of rooms at the following hotel:

Hampton by Hilton Aachen Tivoli

Merowinger Strasse 2, 52070, Aachen, Germany

TEL: +49-241-9559300 FAX: +49-241-955930955

Discounted prices are as follows:

79 Eur for a single room

89 Eur for a double room

In order to obtain this discounted rate please inform the hotel that you are attending the “Q-SORT Workshop” when you book.

Rooms are still available at the Hampton, we strongly suggest that you book your room there as soon as possible.

Bus Transportation

Forschungszentrum Jülich kindly organized a bus transfer to pick up the conference attendees. In the morning, the pickups will take place at the following address/time:

Pick up point 1:

Hampton by Hilton Aachen Tivoli

Merowinger Strasse 2, 52070, Aachen, Germany

TEL: +49-241-9559300 FAX: +49-241-955930955

Time:

- Sunday at 2:00 PM

- Monday- Wed at 8:00 AM

A bus will also bring people every evening from Forschungszentrum Jülich back to Aachen (Hampton Hotel and Bus Station) and to the restaurants and back.

Special Events

May 27, 2018: Pre-conference Wikipedia Edit-a-thon

PGI, Building 04.8, 1st Floor, Room 142-143

Forschungszentrum Jülich - Leo-Brandt-Straße, 52428 Jülich

An Edit-a-thon is an initiative in which people (in our case scientists!) gather to edit/create/improve Wikipedia pages on a given topic.

It is meant for anybody who uses Wikipedia and we invite PhD students and researchers to participate!

It is a great occasion to learn how Wikipedia works and get together.

Participation is welcome but obviously not mandatory!

The goal of this event is to edit and update descriptions in Wikipedia of concepts such as electron vortex beams, two slit experiments with electrons and synthetic holography, where information gaps currently exist. This event is organized with the support of Wikimedia Italia.

More info for those interested in participating and not sure what an Edit-a-thion is are available here: https://en.wikipedia.org/wiki/Edit-a-thon

Social dinners

28 May 2018, h. 19:00 - Steakhaus EL Toro

Große Rurstraße 34, 52428 Jülich

phone: 02461 58100

29 May 2018, h. 19:00 - Im alten Zollhaus

Friedlandstraße 22, 52064 Aachen

phone: 0241 404050

Meeting registration

http://www.qsort.eu/conference-registration/

How to get there

By Car

Coming from Cologne (Köln) take the A 4 motorway (Cologne – Aachen), leave the motorway at the Düren exit, and then turn right towards Jülich (B 56). After about 10 km, turn off to the right onto the L 253, and follow the signs for “Forschungszentrum”.

Coming from Aachen take the A 44 motorway (Aachen – Düsseldorf) and leave the motorway at the Jülich-West exit. At the first roundabout turn left towards Jülich, and at the second roundabout turn right towards Düren (B 56). After about 5 km, turn left onto the L 253 and follow the signs to “Forschungszentrum”.

Coming from Düsseldorf Airport take the A 52 motorway (towards Düsseldorf/Mönchengladbach), followed by the A 57 (towards Cologne). Turn off at Neuss-West, and continue on the A 46 until you reach the crossroads “Kreuz Wanlo”. Take the A 61 (towards Koblenz/Aachen) until you reach “Dreieck Jackerath” where you should take the A 44 (towards Aachen). Continue as described in “Coming from Düsseldorf”.

Coming from Düsseldorf on the A44 motorway (Düsseldorf – Aachen) you have two options:

1. (Shorter route but more traffic) turn right at the Jülich-Ost exit onto the B 55n, which you should follow for approx. 500 m before turning right towards Jülich. After 200m turn left and continue until you reach the “Merscher Höhe” roundabout. Turn left here, drive past the Solar Campus belonging to the University of Applied Sciences and continue straight along Brunnenstrasse. Cross the Römerstrasse junction, continue straight ahead onto Wiesenstrasse and then after the roundabout and the caravan dealers, turn left towards “Forschungszentrum” (signposted).

2. (Longer but quicker route) drive until you reach the “Jülich-West” exit. At the first roundabout turn left towards Jülich, and at the second roundabout turn right towards Düren (B 56). After about 5 km, turn left onto the L 253 and follow the signs to “Forschungszentrum”.

Navigation systems

In your navigation system, enter your destination as “Wilhelm-Johnen-Strasse”. From there, it is only a few hundred metres to the main entrance – simply follow the signs. The research centre itself is not part of the network of public roads and is therefore not recognised by navigation systems.

From neighbouring airports by train:

From Cologne Bonn Airport

From the railway station at the airport, please take the overground line S 12 (“S-Bahn”) to Düren. Continue from Düren as described in “By train”.

From Düsseldorf International Airport

From the railway station at the airport, travel to Cologne main train station and then continue on to Düren. Some trains go directly to Düren whereas other connections involve a change at Cologne main train station.

Continue from Düren as described in “By train”.

By train:

Take the train from Aachen or Cologne to the train station in Düren. From here, take the local train (“Rurtalbahn” [RTB]) for Jülich and get out at the “Forschungszentrum” stop. To make sure that the train stops at “Forschungszentrum” you should press the request stop button (Haltewunsch) in good time after the “Selgersdorf” stop.

From the train stop, a shuttle service will bring you to the campus (for all trains arriving between 6 am and 7 pm, for the timetables, please see “Aachen – Jülich bus connections” below).

If you walk, it will take you approximately 20 minutes to reach the main entrance. The distance is about 1.3 kilometres.

→ time tables for trains from Düren to Jülich (please choose “RB 21” in the field “Linie” to get the train time tables to Jülich. The name of the route is Düren – Linnich)

→ time table for SB 219 shuttle service (between Rurtalbahn stop and Forschungszentrum Jülich) (PDF, 25 kB)

Aachen – Jülich bus connection:

The SB 20 and the 220 bus lines connect Forschungszentrum Jülich to the local public transport system.

time tables:

→ Bus SB 20 Aachen – Forschungszentrum Jülich (PDF, 25 kB)

→ Bus 220 Aachen – Mariadorf – Aldenhoven – Jülich – FZ Jülich (PDF, 61 kB)

AVV website with timetables for bus routes (please chose “SB 20” or “220” in the field “Linie” to get the time tables of the buses to Jülich)

Map:

 Download map (PDF)

Local Map:

 Download map (PDF)

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SPEAKER INFO

Q-SORT-DIP 2018 - SPEAKER INFORMATION

This page contains information and resources to assist you as a presenter at the Q-SORT- DIP 2018 Conference.

If you do not find an answer to your question, please contact us.

Hashtag: #QSORTDIP2018

Follow us on FB: www.facebook.com/quantumsorter/

General Speaker Information

Do I need to register to present?

As a speaker, you must register to present. Be sure to register here:

http://www.qsort.eu/conference-registration/

Papers

The oral presentations at the conference will be 15 minutes long.

Posters

All accepted posters will displayed during the whole duration of the conference.

Is there a PowerPoint template I should use for my presentation?

We prepared an optional template for your convenience. (NOTE: If using a personal PowerPoint template, it would be helpful if you could use Arial font to avoid conversion issues).

How can I share my presentation materials, and should I include a copyright statement?

We invite you share your presentation by sending your file(s) or URLs before the conference (and no later than May 21, 2018) to:

quantumsorter@gmail.com

We ask that you fill in your PowerPoint document's properties in the following manner prior to sending us the file.

Title: TITLE

Subject:QSORT-DIP 2018

Author: NAME(S)

If you password-protect a PDF document, please make sure to enable the file to be read by a screen reader.

It is our goal to make our resources easily available.

You may use this copyright statement on one of your first slides:

"This presentation leaves copyright of the content to the presenter. Unless otherwise noted in the materials, uploaded content carries the Creative Commons Attribution-NonCommercial-ShareAlike license, which grants usage to the general public with the stipulated criteria."

How will my room be set up?

The room will have theater-style seating. There will be a head table and chairs for speakers at the front of the room.

Will I have access to audio/video equipment?

All of the session rooms (with the exception of poster sessions) will have the following standard AV:

- Projector
- Screen
- Microphones

Will I have Internet access?

The following internet connections will be available:

- Wireless access will be available for everyone, presenters and attendees. The connection speed will be sufficient to access and navigate web pages and e-mail.

What will the area for my poster look like?

The standard set should include a bulletin board. Push pins, scissors, tape and other supplies will be available at the check-in desk.

When can I set up and take down my poster display?

Set up times:

- May 27, 2018 3:30 p.m. onwards.

The recommended size of each poster is 120 cm x 90 cm (height x width).

Display boards are 145 cm x 120 cm (height x width).

The suggested structure for each poster is:

Summary

Introduction

Materials and methods

Results/discussion/conclusions (literature cited)

A staff member will be at the front of the poster area and help to direct you to your pre-assigned space.

Do I have the option to ship or store my materials?

If you need to ship materials, it would be best to send them to your hotel (labeled to your attention).

HOTELS AND ACCOMODATION

For the convenience of all, Forschungszentrum Jülich has been kind enough to book a block of rooms at the following hotel:

Hampton by Hilton Aachen Tivoli

Merowinger Strasse 2, 52070, Aachen, Germany

TEL: +49-241-9559300 FAX: +49-241-955930955

Discounted prices are as follows:

79 Eur for a single room

89 Eur for a double room

Rooms are reserved until 23 April 2018.

In order to obtain this discounted rate please inform the hotel that you are attending the “Q-SORT Workshop” when you book.

SPECIAL EVENTS

Wikipedia Edit-a-thon

Duration: 3 hours

Location: PGI, Building 04.8, 1st Floor, Room 142-143

Forschungszentrum Jülich

Wilhelm-Johnen-Strasse

52428 Jülich

Time: Sunday 27 May, h15:00

The goal of this event is to edit and/or update Wikipedia articles on concepts such as electron vortex beams, the double-slit experiment with electrons, synthetic holography, etc. where information gaps currently exist. This event is organized with the support of Wikimedia Deutschland and Wikimedia Italia.

Interdisciplinary Webinars

Duration: 1 hour each

Location: Zentralbibliothek, Building 04.7

Forschungszentrum Jülich

Wilhelm-Johnen-Strasse

52428 Jülich

Times:

Monday 28 May, h13:45

Tuesday 29 May, h14:45

Wednesday 30 May, h11:00

These are part of a series of interdisciplinary webinars aimed at promoting dialogue between the physics and biology/biochemistry communities. They will provide an opportunity for mutual learning mentored by senior scientists, in order to exchange ideas for furthering joint research and establishing a common language.

Science Bash

Schönheit und Nutzen der Nanobiologie

(Beauty and benefits of nanobiology)

A user friendly conference with Q&A

by Prof. Peter Peters (Maastricht University)

Duration: 1 hour

Location: Schlosskapelle

Gymnasium Zitadelle

In der Zitadelle

52428 Jülich

Time: 29 May 2018, h13:15

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Abstracts:

 Download (PDF)

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About

Prof. Peter Peters was instrumental in improving cryo-immunogold EM and vitreous cryo-sectioning. His team discovered that mycobacteria causing tuberculosis move from the phagosome into the cytosol (one of the top 10 cited articles in tuberculosis in the last 10 years). He initiated the Netherlands Centre for Electron Nanoscopy (NeCEN). He co-directs the Maastricht Multimodal Molecular Imaging Institute, in which native unfixed cells are studied with 3D cryo-electron tomography in order to visualise molecular machines in the context of cellular organelles. His group aims to resolve the type VII secretion system of Mycobacterium tuberculosis within the phagolysosome. He initiated a new start-up CryoSol-World, that will produce the next generation vitrification devices called Vitrojet. Vitrobots developed in Maastricht have been distributed to more than 500 cryo-EM labs worldwide. His research has been reported in 120 articles with more than 25000 citations.

www.maastrichtuniversity.nl/m4i

INVITED SPEAKERS

Johan Verbeeck received his PhD degree (2002) from the University of Antwerp. Currently he is a full Professor at the electron microscopy group (EMAT) of the University of Antwerp. Johan Verbeeck is an

expert in the field of electron microscopy and electron energy loss spectroscopy focusing both on applications in state of the art materials science as well as on developing new techniques. He is the author of more than 200 ISI contributions and his work has been cited more than 3000 times. In 2011, he received the prestigious Ernst Ruska award for electron microscopy for his contribution to the quantification of EELS spectra and the development of electron vortex beams. He is the author of the EELSMODEL software providing model based quantification to users worldwide. In 2012 he received an ERC starting grant in order to explore the properties of electron vortex waves.

Ido Kaminer is a faculty member at the Technion Faculty of Electrical Engineeing. He studies the fundamentals of light-matter interactions in nanophotonics and in settings of 2D materials, developing new concepts for light generation in spectral ranges inaccessible by existing technology. Ido's research specifically focuses on the light-matter interactions of shaped particle wavefunctions, in which he made contributions to the quantum electrodynamics of relativistic electron wavefunctions. Ido is an Azrieli Faculty Fellow and won a Rothschild Fellowship, MIT-Technion Scholarship, and a Marie Curie Fellowship, for his postdoc. During his PhD, Ido has discovered new classes of accelerating beams in nonlinear optics and electromagnetism, for which he received the 2012 Israel Physical Society Prize, and the 2014 APS Award for Outstanding Doctoral Dissertation in Laser Science.

Mark Kasevich is a Professor of Physics and Applied Physics at Stanford University. He received his B.A. degree (1985) in Physics from Dartmouth College, a B.A. (1987) in Physics and Philosophy from Oxford University as a Rhodes Scholar, and his Ph.D. (1992) in Applied Physics from Stanford University. He joined the Stanford Physics Department faculty in 1992. From 1997-2002 he was a member of the Yale Physics Department faculty. He returned to Stanford in 2002. His current research interests are centered on the development of quantum sensors of rotation and acceleration based on cold atoms, application of these sensors to tests of gravitation and quantum mechanics, investigation of many-body quantum effects in cold atomic vapors, and investigation of quantum-enhanced imaging methods. He co-founded AOSense, Inc. (2004) and serves as the company's Consulting Chief Scientist

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PROGRAMME COMMITTEE

Programme Chairs:

Ady Arie, Technion (IL)

Rafal Dunin-Borkowski, Forschungszentrum Jülich (Germany)

Vincenzo Grillo, CNR-NANO (Italy)

Contact Point:

Vincenzo Grillo, CNR-NANO (Italy)

Conference production:

Raffaella Santucci, QED

Local administrative support:

Marie Göcking, Forschungszentrum Jülich (Germany)

General Administrative Support:

CNR-NANO (Italy)

REGISTRATION

The conference will be free of charge, but places are limited.

Coffee breaks and lunches will be provided.

Participants will be responsible for their own travel and hotel costs.

Please register and indicate your hotel preferences before May 21, 2018.

Abstract submission form

Registration form

SUBMISSION GUIDELINES

Extended abstracts should be submitted online here.

Templates are available here:

 docx Kit

 LaTeX Kit

Contributions will be reviewed and selected by the scientific programme committee. They will have a CC-BY-NC-ND licence with open access, available shortly after the conference.

The committee will decide whether accepted submissions will be presented as talks or posters.

Important dates:

* Submission of 1-3 page extended abstracts: 28 February 2018 / 14 March 2018

* Response to authors: 16 March 2018 / 28 March 2018

* Camera ready versions: 16 April 2018

THE SCIENCE BEHIND IT

Q-SORT introduces new ideas and methodologies by which the transmission electron microscope (TEM) is modified so as to function as a Quantum Sorter. All TEM techniques are in fact limited to the imaging and energy spectroscopy of the electron wavefunction. Moreover, when a single sample property is sought, most of the image information is useless, a waste that cannot be afforded in dose-sensitive materials.

The Quantum Sorter leverages the recently-acquired capacity to structure electron beams. This implies that if, in a quantum experiment (=tunable state preparation, interaction, analysis), the analysis is performed over the 'optimal' basis of quantum states, very few electrons are necessary for the full characterisation of a sought property. In other words, the TEM can be tuned to answer only a single question, but with maximum efficiency.

To this end, Q-SORT introduces a new parallel analysis strategy, based on a suitable conformal mapping of the wavefunction: the starting point is the analysis of orbital angular momentum (OAM), but building a more general recipe for diagonalising a wider range of observables is one of the anticipated breakthroughs of Q-SORT. This will in turn allow Q-SORT to achieve three other high-risk breakthroughs of vast applicability: assessing the OAM of plasmonic resonances in select nanoparticles, achieving atomic-resolution magnetic dichroism measurement, identifying different proteins based on selected properties.

The Quantum Sorter will become so important that it will eventually be part of every state-of-the-art TEM, since the new technology is easy to integrate with energy-loss spectrometry.

The project consortium includes world leaders in optical and electronic vortex beams, as well as in protein cryoTEM. A major industrial partner in TEM is included -i.e. FEI, now part of Thermo Fisher Scientific-, to secure market penetration of technological outcomes. The Q-SORT Consortium comprises some of the top players in the world of OAM, quantum optics, TEM and cryoTEM.

NEWS & EVENTS

This section is designed to collect news and inspire conversations about Q-SORT-related events both inside and outside of the project's immediate sphere.

If you come across an article, blog post, or other piece discussing the Q-SORT project (or if you write one yourself), we would love for you to share it with us: raffaella@qedproductions.co.uk

Here you will also find a list of upcoming talks, tours, conferences, lectures, and meetings related to the Q-SORT project. Q-SORT events create networking opportunities for scientists, scholars, authors, publishers, educators, representatives from public and private science organisations and the general public. Such connections are crucial to the vision of our project and the work we do as promoters of science. We cordially invite you to join in our stimulating discussions.

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02 October 2017 - Chocks off for Q-SORT!

[KoM photo]

The Q-SORT partners at the Kick-off Meeting in Modena, Italy

On **2 October 2017** the **CNR-NANO** institute in Modena hosted the **Q-SORT Kick-off Meeting** for the official launch and first-ever public presentation of the Q-SORT Project. Funded by the European Commission under its highly competitive **Future and Emerging Technologies** Programme (FET), the project will run for 42 months, starting on 1 October 2017.

The Kick-off event - which was organised by Q-SORT and supported by CNR-NANO- brought together leading institutions in the field of electron microscopy and quantum light optics, i.e. CNR-NANO (Project scientific coordinator), the Forschungszentrum Jülich, Thermo Fisher Scientific, The Max Planck Institute for the Science of Light, University of Glasgow, University of Modena and Reggio Emilia, Maastricht University, University of Ottawa.

Representatives from the European Commission, Wikimedia, and the creative industries were also in attendance.

At a glance:

Q-SORT
A New Era in Electron Microscopy

Kick-off Meeting

Dates: 02-03 October 2017
Venue: Palazzo dei Musei
Viale Vittorio Veneto 5
41121 Modena, Italy

Web: www.nano.cnr.it/index.php?mod=men&id=292

PRESS ROOM & DOWNLOADS

For all press/media needs please refer to the downloadable material below or email us at qsortpress@qedproductions.co.uk Our team is here to respond to all media enquiries about Q-SORT.

There are many ways to stay current with our news and activities: you can sign up to our press mailing list, and/or read our professional blog and follow us on Facebook, Twitter, Instagram. To be included in the press list, send us an email at qsortpress@qedproductions.co.uk with PRESS LIST YES as the subject.

Download the latest Q-SORT press release

Download Q-SORT press photos

Download the Q-SORT logo

[Future quick links will include

Q-SORT Outreach Toolkit

Q-SORT Past Press Releases]

Q-SORT at a Glance

Title: Q-SORT. The Quantum Sorter: A New Measurement Paradigm in Electron Microscopy

Acronym: Q-SORT

Principal Investigator: Vincenzo Grillo

Tagline: Q-SORT. A New Era in Electron Microscopy

Start Date: 1 October 2017
End Date: 31 March 2021

Funding Body: European Commission
Research Executive Agency
Unit A5 - Fostering Novel Ideas: FET-Open

Project Partners:
CNR-NANO (Project scientific coordinator) - IT
The Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons - Forschungszentrum Jülich - DE
Maastricht University - NL
Thermo Fisher Scientific - NL
University of Glasgow - UK
The Max Planck Institute for the Science of Light - DE
QED Film & Stage Productions Ltd. - UK
University of Modena and Reggio Emilia - IT

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41125 Modena
Italy

RESERVED AREA

Click here to access the reserved area.

ANNEX 2: ABBREVIATIONS

Short Name Of Participants

Partner	Country	Short Name
National Research Council (Project scientific coordinator)	Italy	**CNR**
Forschungszentrum Jülich, Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons	Germany	**FZJ**
FEI - Thermo Fisher Scientific	The Netherlands	**FEI**
The Max Planck Institute for the Science of Light	Germany	**MPI**
University of Glasgow, Department of Physics and Astronomy	United Kingdom	**UG**
QED Film & Stage Productions Ltd. - UK	United Kingdom	**QED**
University of Modena and Reggio Emilia, Department of Physics, Informatics, and Mathematics - IT	Italy	**UMR**
Maastricht University, Maastricht MultiModal Molecular Imaging Institute	The Netherlands	**MU**

List Of Abbreviations

Consortium Agreement	**CA**
Description of Action	**DoA**
Description of Work	**DoW**
European Commission	**EC**
Grant Agreement	**GA**
Kick-off Meeting	**KoM**
Project Management Board	**PMB**
Work Package	**WP**
Work Package Leader	**WPL**