



RAZipol



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Project acronym: Ultrafast_RAZipol
Project title: Ultrafast Laser with Radial and Azimuthal Polarizations for High-efficiency Micro-machining Applications

Collaborative Project (STREP)

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D8.1 – Website developed and brand established for Razipol

Revision 1.0

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Coordinator: Dr Marwan Abdou-Ahmed (USTUTT)

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Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	



D8.1: Website developed and brand established for Razipol

Nature: Other

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1 Introduction

The main objective of this website is to create an initial awareness of the Ultrafast_RAZipol project within the general public as well as within the scientific community.

The public facing website held at www.razipol.eu has been designed to inform people who are external to the consortium of:

- What the project is about
- The main aims of the project
- The organisational partners involved
- The latest news and achievements
- Links to other related information

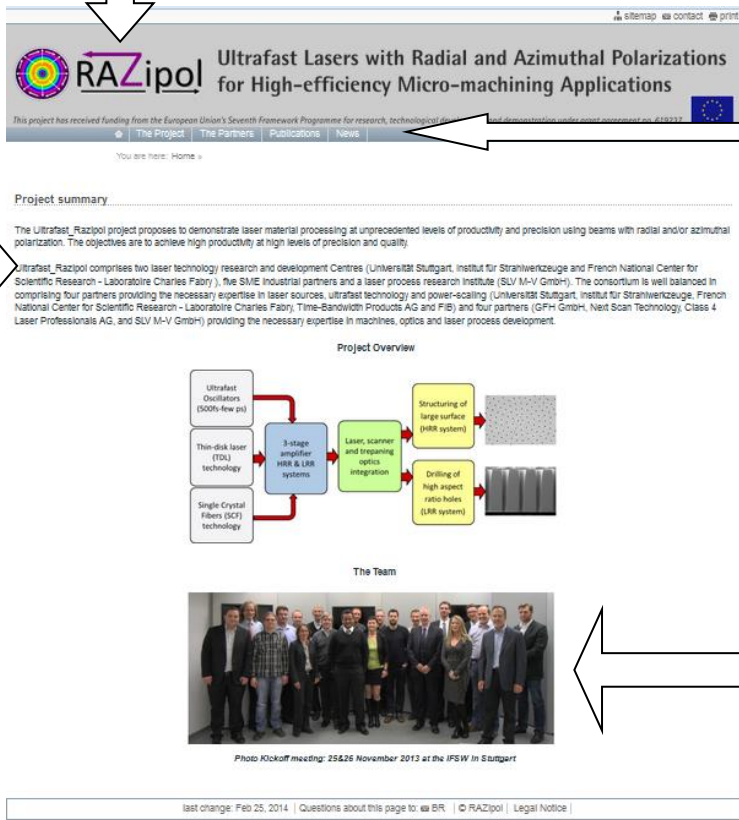
There is also online contact details to allow further information request by visitors.

The website will be regularly updated as and when new information is generated.

2 The Website

2.1 The Home page

The Ultrafast_RAZipol brand is established with a unique distinctive logo



The website menu is located on every page to facilitate navigation around the different sections of the website

Introducing the project with a brief summary

The Ultrafast_RAZipol partners at the Kick-off meeting in Stuttgart

2.2 The Project page

The project page includes an overview of the project, its aims and reference to the FP7 Grant Agreement details.



The screenshot shows the website for the RAZipol project. The header features the RAZipol logo and the title "Ultrafast Lasers with Radial and Azimuthal Polarizations for High-efficiency Micro-machining Applications". Below the header is a navigation menu with links for "The Project", "The Partners", "Publications", and "News". The main content area is titled "The Project" and contains the following sections:

- About:** Ultrafast Lasers with Radial and Azimuthal Polarizations for High-efficiency Micro-machining Applications
- Project start Date:** 01/11/13
- Project Duration:** 36 months (end date 01/11/16)
- Proposal:** High-precision laser micro-machining has delivered a important impact in daily life, hence its benefits and usefulness can easily be taken for granted. For example in the manufacture of smart phones, tablets, etc, high-precision laser micro-machining is essential to produce some of the key features we use in these devices. In the car industry it has been shown that diesel nozzles produced with ultrafast lasers lead to significantly reduced air pollution in comparison to nozzles produced with conventional fabrication techniques. Spinning nozzles used widely in the textile industry are also produced using ultrafast lasers. The main goal of RAZipol is to demonstrate laser material processing at unprecedented levels of productivity (leading to drilling process times below 4 s of high aspect ratio (40:1) holes compared to current times of 25 s) and precision material processing (structure dimension <math>< 1 \mu\text{m}</math>) using beams with novel radial and azimuthal polarization. The challenge is not only to achieve high productivity at moderate levels of precision or highest quality at low speeds, but to reach both targets at the same time. Therefore an adequate ultrafast laser source with a very high average power and well-adapted beam parameters, including pulse duration, pulse energy, intensity profile, and polarization, is needed. Additionally, the laser beam has to be applied to the work-piece in a well-defined application-specific manner. Finally, advanced processing strategies are required to obtain optimum results at high productivity. The ultrafast laser source planned for RAZipol project combines several quite unique features. Its modular 3-stage master oscillator power amplifier (MOPA) concept offers a high degree of flexibility to generate a broad range of pulse durations, pulse energies and repetition rates. The MOPA combines an ultrafast oscillator together with a Single Crystal Fiber as 1st amplification stage and a thin-disk multipass amplifier as final amplification stage. Although the potential range of material processing applications for this laser source is extremely broad, within the project, we will focus on two demonstration applications. The first application will be based on a fast scanner system which facilitates the production of complex structures like a "lab on a chip" on large wafers (8" diameter). For this application, the MOPA system providing up to 500 W average power will be set up for repetition rates in the 20-40 MHz range with pulse duration of approximately 1 ps. The second application will be trepanning drilling of deep, high aspect holes with tight tolerances. In this case, the MOPA system providing up to 200 W average power will be set up for generating high pulse energies ($\approx 1 \text{ mJ}$) at pulse duration of about 5 ps. Hence it is believed that RAZipol will have a great impact on the industrial fabrication since it targets cost-efficient solutions for a broad range of applications as well as fast and high-volume applications.

At the bottom of the page, there is a footer with the text: "last change: Feb 25, 2014 | Questions about this page to: BR | © RAZipol | Legal Notice".

2.3 The Partners page

Here, a section is dedicated to each partner which contains the organisation's logo and background information, including a hyperlink to the organisation's own website. The partners list on the top left hand side provides quick navigation to the section relevant to each partner.

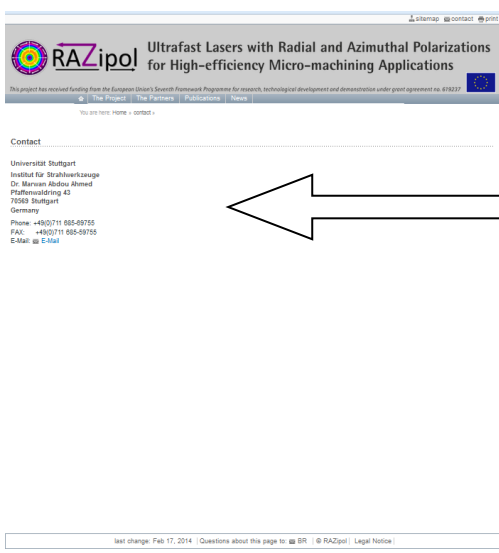
The screenshot shows the 'The Partners' page of the RAZipol project website. The header includes the RAZipol logo and the project title: 'Ultrafast Lasers with Radial and Azimuthal Polarizations for High-efficiency Micro-machining Applications'. A navigation menu at the top left lists 'The Project', 'The Partners', 'Publications', and 'News'. The main content area is divided into two columns. The left column contains a list of partners with hyperlinks. The right column features an 'Introduction' section for the 'Institut für Strahlwerkzeuge / Universität Stuttgart (USTUTT)', identifying Dr. Marwan Abdou Ahmed as the project coordinator. Below this is a section for 'Time-Bandwidth Products AG', detailing its history and key personnel, including Dr. Kurt Weingarten.

2.4 The Publications page and News page

The publications page currently shows a paper in which the Ultrafast_RAZipol project is acknowledged. Presentations and material used during meetings and conferences will be uploaded to this area along with other general dissemination documents produced during the course of the project. The News page contains information related to the project's upcoming events and the page will also be updated during the course of the project.



2.5 The Contact us page



The full contact details of the project's Coordinator are displayed on this page.

There is also a hyperlink which enables visitors to send emails directly to the Coordinator's email address.