

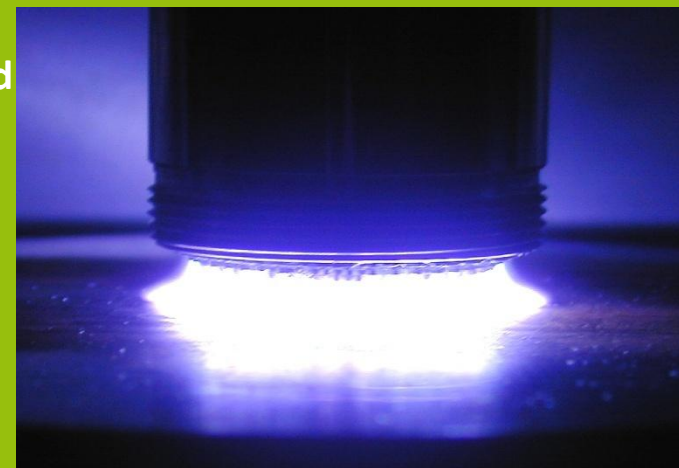


PlasTEP

PlasTEP – Dissemination and fostering of plasma based technological innovation for environment protection in the Baltic Sea Region

International Workshop: volatile organic compounds and aerosol removal by means of plasma-based and plasma-assisted technologies

Greifswald, 10.09.2010



Plasma discharge
Source: The Ångström Laboratory

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Part-financed by the European Union (European Regional Development Fund)

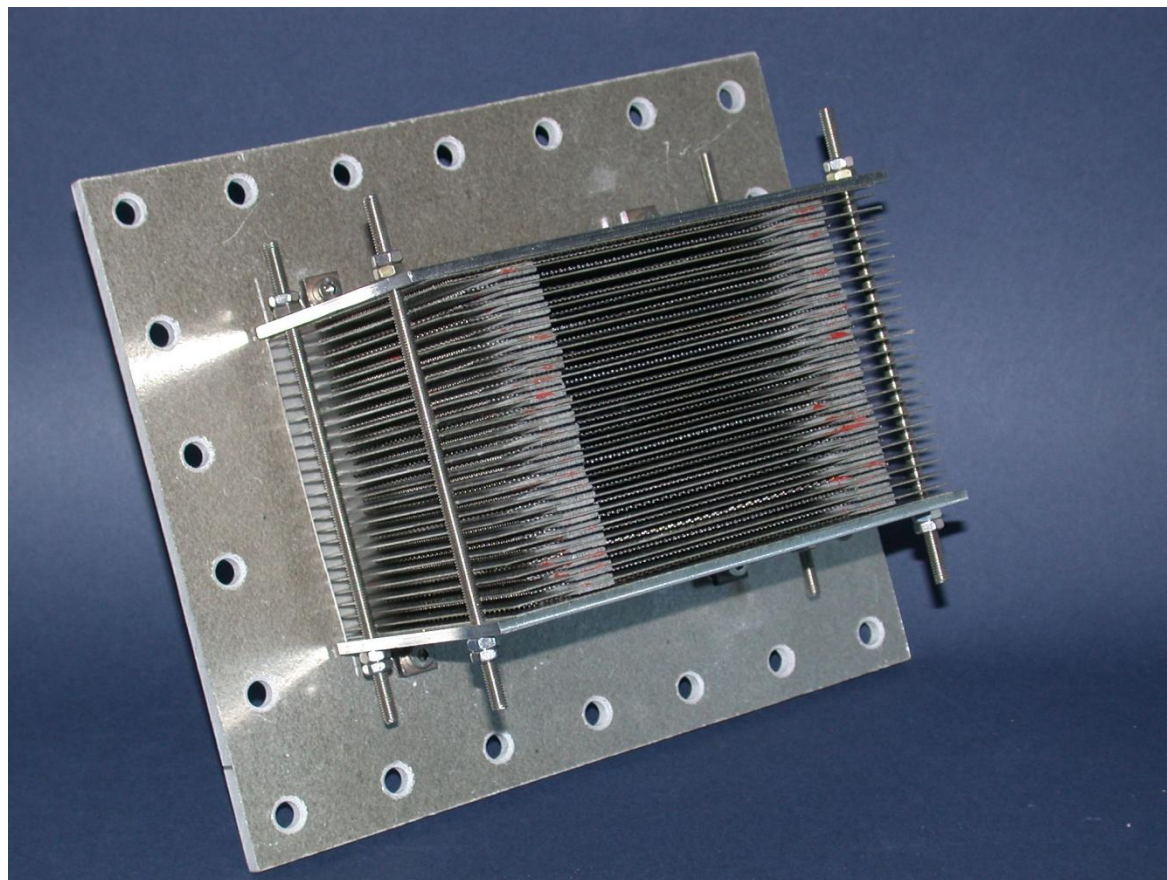


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Source: Leibniz Institute of Plasma Science and Technology





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1. General Objectives

PlasTEP has the following aims:

- **Dissemination and fostering of plasma based technological innovation for environment protection in the Baltic Sea Region (BSR)**
- **Build up a network with partners from industry, science and policy focused on plasma technology for environment**
- **Offer new possibilities for environment neutral production**
- **Combining the existing knowledge about plasma technologies in the BSR**
- **Contribute to a better future by cleaning for example exhaust gases or waste water**
- **Bring the idea of investing in plasma technology and therewith in future research into the minds of industrial decision makers and politicians and show people: there are new ways!**



2. Structure of PlasTEP



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WP 0: Preparation Activities

WP 1: Project Management & Administration

WP 2: Communication & Information

WP 3: Plasma based technologies sustainability analysis and integration in to the educational process

WP 4: Plasma based cleaning of exhaust gases of combustion

WP 5: Removal of organic/hazardous compounds and aerosols

WP 6: Plasma technologies for water cleaning



Source: Risø (Plasmaball)





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Work package 3

Plasma based technologies sustainability analysis and integration in to the education process

- analyses of plasma-based environmental protection solutions in respect to environmental performance and research/marketing integration potential
- origination of basis for support of applications/investments for plasma technologies for pollutant removal
- cost /risk analyses of different plasma applications in the BSR as a chance of a sustainable environment friendly production

PlasTEP force:

- The discussion about methodologies for implementation
- Integration of plasma knowledge in the educational process



Communication Seminar





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Work package 4

Plasma based cleaning of exhaust gases of combustion

- Spreading information about plasma technologies reducing nitrogen oxide (NO_x) and sulphur oxide (SO_x) which emerge in mostly all combustion processes
- removals are from commercialisation-ready electron beam flue gas treatment over ozonisation up to direct plasma treatment with or without catalytic reactions in laboratory scale.



- attract interest of potential industrial users by developing an application guide
- exchange of knowledge including a comparison of the various plasma technologies and definition of their different fields of application and (mobile) feasibility installation

Electron beam installation in a power plant





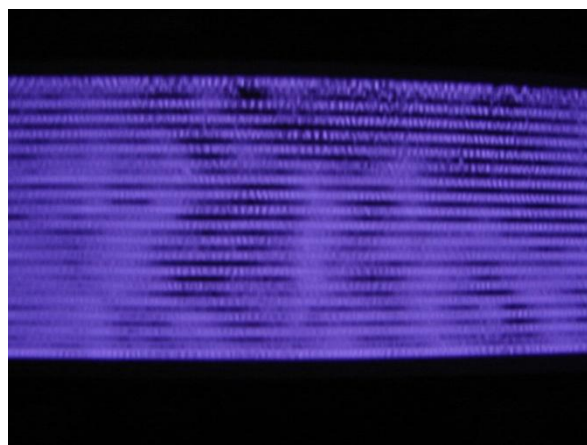
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Work package 5

Removal of organic/hazardous compounds and aerosols from gases

- knowledge transfer for process for VOC (volatile organic compounds) removal by use of plasma technologies
- comparison of various plasma technologies for VOC removal and finding additional fields of application (odour destruction)
 - attract potential end users by practical demonstration geared with different application (type of exhaust, mass flow, available space)
 - support of new innovative plasma-combined catalytic methods to become visible in industry



Work package 6

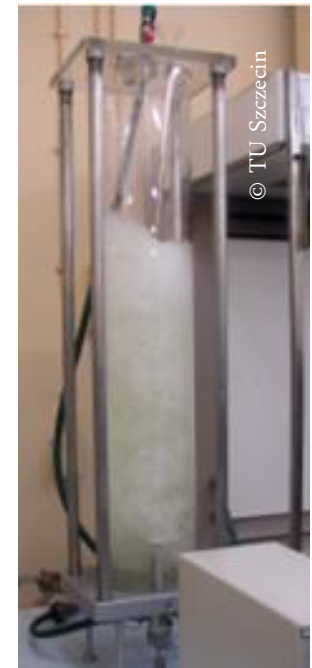


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Plasma technologies for water treatment

- joint enhancement of the new innovative method of electrical discharge plasma and photo catalyst treatment of waste water (e.g. port water)
- pre-feasibility study of this method for cleaning of water from organic compound
- realisation of a mobile prototype for destruction of oil and oil-type leakages for acquisition of further funds and investments



Plasma treatment of water



3. Project Partners



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01	Technology Centre of Western Pomerania (TZV)	Germany
02	Leibniz Institute for Plasma Science and Technology (INP)	Germany
03	VDI Mecklenburg Western Pomerania (VDI)	Germany
04	Risø National Laboratory for Sustainable Energy, TU of Denmark (Risø)	Denmark
05	Uppsala University, The Ångström Laboratory (UUA)	Sweden
06	Lappeenranta University of Technology, ASTRa (LUT)	Finland
07	Riga Technical University (RTU)	Latvia
08	Lithuanian Energy Institute (LEI)	Lithuania
09	Kaunas University of Technology (KUT)	Lithuania
10	Vilnius Gediminas Technical University (VGTU)	Lithuania
11	Institute of Nuclear Chemistry and Technology (INCT)	Poland
12	The Szewalski Institute of Fluid Flow Machinery (IMP)	Poland
13	West Pomeranian University of Technology (SUT)	Poland
14	University of Tartu (UT)	Estonia
15	Association of Polish Electrical Engineers, Szczecin Branch (SEP)	Poland





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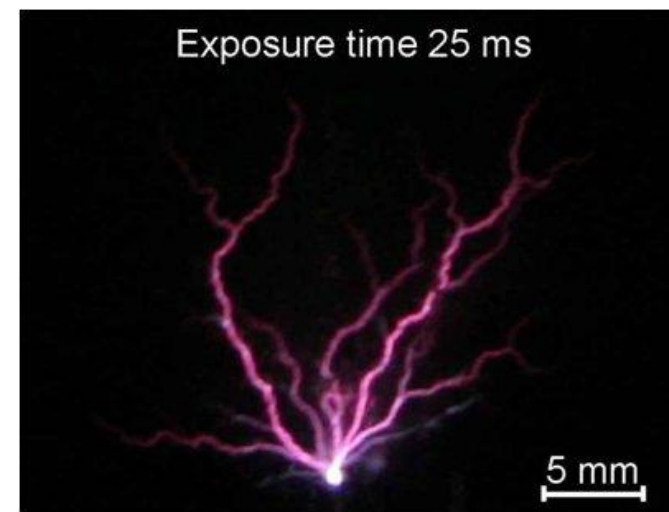
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4. Financial Management

(Basic Data)

- **Overall budget:** 3.820.000 €
- **Duration:** 01.01.2010 – 31.12.2012
- **Leadpartner:** TZV





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Thank you for your attention

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