

# Symposium Applications and New Trends of Plasmatechnology – An Overview (SYPT)

jointly organized by  
 Short Time-scale Physics and Applied Laser Physics Division (K),  
 the Plasma Physics Division (P) and  
 the Deutsche Gesellschaft für Plasmatechnologie (DGPT)

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Generally in plasma technology gas discharges are widely used for plasma generation. Discharges are classified as dc discharges, ac discharges, RF, microwave, or pulsed discharges on the basis of the temporal behavior of the sustaining electric field. The spatial and temporal characteristics of the plasma depend to a large degree on the particular application for which the plasma will be used. The venue of the meeting offers an unique opportunity to remember to the submission of the first paper about a novel low-pressure gas discharge, called pseudospark. This paper was submitted to *Zeitschrift für Physik A* in October 1978. Over the last four decades the pseudospark spread from Erlangen world-wide with a variety of applications in the field of plasma technology.

The term “pseudospark” is the heading for this more general symposium on vacuum and gas discharges and their applications in accelerators, considering the phenomena of arc-electrode interaction, and novel applications in medicine. Therefore, this symposium circles back from the historic development of pseudospark to the current state of the art of pseudospark research and application. The first three talks present an overview on past and recent research activities on pseudospark in the United States, Russia, and South Korea. The next talk considers different applications of plasmas in accelerator facilities. Subsequently, three contributions highlight fundamental processes with the arc-electrode interaction in high-pressure lamps, in vacuum interrupters, and in gas-filled HVDC circuit breakers. The symposium closes with a talk about novel uses of non-thermal plasmas in medicine and related fields of activity.

## Overview of Invited Talks and Sessions

(Lecture room M 00.910)

### Invited Talks

SYPT 1.1	Thu	10:30–11:00	M 00.910	<b>Pseudospark Research in Southern California</b> — ●MARTIN GUNDERSEN
SYPT 1.2	Thu	11:00–11:30	M 00.910	<b>Features of a hollow-cathode discharge in pseudospark switches</b> — ●YURI KOROLEV
SYPT 1.3	Thu	11:30–12:00	M 00.910	<b>Overview of R&amp;D Activities on Vacuum and Gas Discharges and Their Applications in South Korea</b> — ●SANG HOON NAM
SYPT 1.4	Thu	12:00–12:30	M 00.910	<b>Plasma Stripper, Plasma Window, Plasma Gun as Applications of Discharge Plasmas</b> — ●JOACHIM JACOBY
SYPT 2.1	Thu	14:00–14:30	M 00.910	<b>Plasmaphysical Basics of Vacuum Switching Devices for High Currents and Voltages</b> — ●NORBERT WENZEL
SYPT 2.2	Thu	14:30–15:00	M 00.910	<b>Discharge inception and breakdown in weakly and strongly electronegative gas in HV switchgear applications</b> — ●MARTIN SEEGER
SYPT 2.3	Thu	15:00–15:30	M 00.910	<b>Plasma Technological Research for Electrical Engineering and Medicine</b> — ●DIRK UHRLANDT
SYPT 2.4	Thu	15:30–16:00	M 00.910	<b>Progress in Understanding Arc-Electrode Interaction</b> — ●JÜRGEN MENDEL

**Sessions**

SYPT 1.1–1.4	Thu	10:30–12:30	M 00.910	<b>Application and New Trends of Plasmatechnology - Part I</b>
SYPT 2.1–2.4	Thu	14:00–16:00	M 00.910	<b>Application and New Trends of Plasmatechnology - Part II</b>