

Plenary Talk

PV I Mon 9:00 HSZ/AUDI

Low Temperature Plasma – About a Hidden Champion or a Silent Revolution — •KLAUS-DIETER WELTMANN, THOMAS VON WOEDTKE, JÜRGEN F. KOLB, TORSTEN GERLING, and ANGELA KRUTH — Leibniz Institute for Plasma Science and Technology, Greifswald, Germany

The plenary lecture presents an overview of the achievements and future potentials of low-temperature plasma physics and technology. Such plasmas are particular states of matter consisting of neutral, ionized and excited species, free electrons as well as radicals, photons and excited species. While the electrons have a mean energy of a few eV to 10 eV, the temperature of the heavy species is several orders of magnitude lower. These properties make them very attractive for

applications. The fundamental knowledge gained so far supported the worldwide boom in the automotive industry, lighting, materials processing, optics, electronics, textile processing, and other fields. Basic research is the common prerequisite for the successful development of processes, technologies and products. Low-temperature plasma physics has steadily opened up new fields. It belongs to the cross-cutting technologies. In this contribution, the opening to new and interdisciplinary research topics is demonstrated by the example of plasma medicine. In particular, the research and development of plasma sources and their transfer into medical practice is reported. Low-temperature plasmas will play an important role to face "older" and new scientific challenges by interdisciplinary approaches, representing a renewed growth opportunity for the plasma community.