Curriculum Vitae

Prof. Ing. Stanislav Pekárek, CSc.

Present position: Professor, Department of Physics, Czech Technical University in Prague, FEE.

Education: Moscow Power Engineering Institute, Moscow, M.Sc. – 1967 (diploma with honors).
Czech Technical University in Prague, CSc. - 1972.
Czech Technical University in Prague, associate professor - 1992.
Czech Technical University in Prague, full professor - 2003.

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Foreign languages:
Active knowledge of English, Russian and French.

Stages abroad:
1979: Seven months stage at Université des Sciences, Limoges, France. Research: electric arc stabilization by the magnetic field in the Laboratory of Ionized Gases.
1992: Six months stage at College of DuPage, Chicago, Il, USA. Visiting professor. Teaching of the Physics course.

Present teaching activities:
All courses of Physics for self-paying students at FEE of CTU in Prague.
Ph.D. program - the course Foundations of Plasma Physics.

Research interests:
Electrical discharges at atmospheric pressure, ecological applications of electrical discharges - decomposition of volatile organic compounds, generation of ozone and nitrogen oxides.
Current research: dc as well as ac corona, surface dielectric barrier discharges, plasma jets and applications of photocatalysts in the discharge.

Research projects:
Projects offered by the Czech institutions (Czech Technical University in Prague, Czech Science Foundation, Grant Agency of the Academy of Sciences of CR, Technology Agency of the CR) as well as projects offered by international institutions (NATO, bilateral Czech Flemish cooperation).
During last ten years an applicant or co-applicant of following projects:
GA AS CR: 2007 – 2008. Co-applicant. Kinetics and dynamics of high-pressure micro-discharges in atmospheric gasses.
CSF: 2009 –2011. Applicant. New trends in ozone generation.
TA CR: 2013–2016. Co-applicant. Optimization of ozone production and its transport efficiency.

Other activities:
Charles University Grant Agency, Member of the section: Natural Sciences.
Referee of the journals: Plasma Sources Science and Technology, Journal of Physics D: Applied Physics, Plasma Chemistry and Plasma Processing, Plasma Processes and Polymers, Ozone: Science & Engineering, IEEE Transactions on Plasma Science, Chemical Engineering Journal, Journal of Electrostatics, IEEE Transactions on Plasma Science and others.

List of publications from 2010

1. R. Bálek , S. Pekárek, Air-jet power ultrasonic field applied to electrical discharge, Physics Procedia **3** (2010) 775-780.
2. S. Pekárek, DC corona discharge ozone production enhanced by magnetic field, Eur. Phys. J. D 56, (2010) 91–98.
3. M Šimek, S Pekárek and V Prukner, Influence of power modulation on ozone production using an AC surface dielectric barrier discharge in oxygen, Plasma Chemistry and Plasma Processing, 30, 5, (2010), 607-617.
4. S. Pekárek, Effect of catalysts on dc corona discharge poisoning, The European Physical Journal D, 61, 3 (2011) 657-662, doi: 10.1140/epjd/e2010-10246-4.
5. S. Pekárek, Atmospheric-Air Needle-to-Cylinder DC Discharges in Magnetic Field, IEEE Transactions on Plasma Science, 39, 11, (2011) 2206-2207.
6. S. Pekárek, Experimental study of surface dielectric barrier discharge in air and its ozone production, J. Phys. D: Appl. Phys. 45, 7 (2012) 075201 (9pp), doi:10.1088/0022-3727/45/7/075201.
7. M. Šimek, S. Pekárek and V. Prukner, Ozone production using a power modulated surface dielectric barrier discharge in dry synthetic air, Plasma Chemistry and Plasma Processing, 32, 4 (2012) 743-754.
8. S. Pekárek , Asymmetric properties and ozone production of surface dielectric barrier discharge with different electrode configurations , The European Physical Journal D, 67, 5 (2013) doi: 10.1140/epjd/e2013-30723-4.
9. S. Pekárek, Effect of magnetic field, airflow or combination of airflow with magnetic field on hollow needle-to-cylinder discharge regimes, J. Phys. D: Appl. Phys. 46 (2013) 505207.
10. R. Bálek, M. Červenka, S. Pekárek, Acoustic field effects on a negative corona discharge, Plasma Sources Sci. Technol. 23 (2014) 035005 (9pp) doi:10.1088/0963-0252/23/3/035005
11. S. Pekárek, Ozone production of hollow-needle-to-mesh negative corona discharge enhanced by dielectric tube on the needle electrode, Plasma Sources Sci. Technol. 23, 6 (2014), doi:10.1088/0963-0252/23/6/062001.
12. S. Pekárek and J. Mikeš, Temperature-and airflow-related effects of ozone production by surface dielectric barrier discharge in air, The European Physical Journal D, 68, 10 (2014).
13. S. Pekárek, Effect of TiO_2 and reverse air supply on ozone production of negative corona discharge with the needle in the dielectric tube to mesh electrode system, Plasma Chemistry and Plasma Processing, 35, 4 (2015) 705-719.
14. S. Pekárek, J. Mikeš, J. Krýsa, Comparative study of TiO_2 and ZnO photocatalysts for the enhancement of ozone generation by surface dielectric barrier discharge in air, Applied Catalysis A: General 502 (2015) 122–128.
15. S. Pekárek, J. Mikeš, I.Beshajová-Pelikánová, F. Krčma and P. Dzik: Effect of TiO_2 on various regions of active electrode on surface dielectric barrier discharge in air, Plasma Chem. Plasma Process, Sept. 2016, doi: 10.1007/s11090-016-9723-4.
16. J. Mikeš, S. Pekárek, and I. Soukup: Experimental and modelling study of the effect of airflow orientation with respect to strip electrode on ozone production of surface dielectric barrier discharge, Journal of Applied Physics 120, 173301 (2016); doi: 10.1063/1.4966603.