СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ

1 Benito Parejo C.J. Characterization of Spark Ignition energy transfer by optical and non-optical diagnostics / C. J. Benito Parejo, Q. Michalski, C. Strozzi, J. Sotton, M. Bellenoue // Digital proceedings of the 8th European Combustion Meeting. – 2017. - Pp. 898-902.

2 Xiaoang L. Study on Resistance and Energy Deposition of Spark Channel Under the Oscillatory Current Pulse / L. Xiaoang, L. Xuandong, Z. Fanhui, Y. Hao, Z. Qiaogen // IEEE Transactions on Plasma Science. – 2014. – Vol. 42. – Pp. 2259.

3 Belmouss M. Effect of electrode geometry on high energy spark discharges in air. Thesis, Purdue University West Lafayette, Indiana, 2015.

4 Kamenskihs V. Measurement of critical energy for direct initiation of spherical detonations in stoichiometric high-pressure H_2-O_2 mixtures / V. Kamenskihs, Ng. Hoi Dick, J.H.S. Lee // Combustion and Flame. – 2010. – Vol. 157. – Pp. 1795–1799.

5 Zhang J. Numerical and experimental investigation of dielectric recovery in supercritical N_2 / J. Zhang, A. H. Markosyan, M. Seeger, E.M. van Veldhuizen // Plasma Sources Science and Technology. – 2015. – Vol. 24, no. 2. – Pp. 025008. doi: 10.1088/0963-0252/24/2/025008.

6 Tanaka Y. Hydrodynamic chemical non-equilibrium model of a pulsed arc discharge in dry air at atmospheric pressure / Y. Tanaka, T. Michishita, Y. Uesugi // Plasma Sources Sci. Technol. – 2005. – Vol. 14. – Pp. 134–151.

7 Tanaka Y. Modelling of a pulsed discharge in N2 gas at atmospheric pressure / Y. Tanaka, T. Sakuta // Journal of Physics D: Applied Physics. – 1999. – Vol. 32, no. 24. – P. 3199-3207. doi: https://doi.org/10.1088/0022-3727/32/24/316.

8 Korytchenko K. Numerical Investigation of Energy Deposition in Spark Discharge in Adiabatically and Isothermally Compressed Nitrogen / K. Korytchenko, R. Tomashevskiy, I. Varshamova, D. Meshkov, D. Samoilenko // Japanese Journal of Applied Physics. – 2020. – Vol. 59. – SHHC04. doi: 10.35848/1347-4065/ab72cc.

9 Korytchenko K.V. Numerical simulation of initial pressure effect on energy input in spark discharge in nitrogen / K.V. Korytchenko, R.S. Tomashevskyi, I.S. Varshamova, D.P. Dubinin, A.A. Lisnyak // Problems of Atomic Science and Technology. – 2019. – Vol. 4 (122). – Pp. 116-119.

10 Korytchenko K. Numerical simulation of gap length influence on energy deposition in spark discharge / K. Korytchenko, O. Shypul, D. Samoilenko, I. Varshamova, A. Lisniak, S. Harbuz, K. Ostapov // Electrical Engineering & Electromechanics. – 2021. – Vol. 1. – Pp. 35-43. doi:10.20998/2074-272X.2021.1.06.

11 Korytchenko K.V. Numerical and Experimental Investigation of the Channel Expansion of a Low-Energy Spark in the Air / K.V. Korytchenko, S. Essmann, D. Markus, U. Maas, E.V. Poklonskii // Combustion Science and Technology. – 2018. – Vol. 191, no. 12. – Pp. 2136-2161. doi: 10.1080/00102202.2018.1548441.

12 Sforzo B. High Energy Spark Kernel Evolution: Measurements and Modeling / B. Sforzo, J. Kim, A. Lambert, J. Jagoda, S. Menon, J. Seitzman // Proc. 8th US National Combustion Meeting. – 2013. – Paper 070IC-0272.

13 Payri R., Novella R., Garcia A., Domenech V. A new methodology to evaluate engine ignition systems in high density conditions // Experimental Techniques. – 2014. – Vol. 38. – Pp.17-28.

14 Gegechkori N.M. Experimental Studies of Spark Discharge Channel / N.M. Gegechkori // Journal of Experimental and Theoretical Physics. – 1951. – Vol. 21. – Pp. 493-506.

15 Xu D.A. Experimental study of the hydrodynamic expansion following a nanosecond repetitively pulsed discharge in air / D.A. Xu, D.A. Laoste, D.L. Rusterholtz, P.Q. Elias, G.D. Stancu, C.O. Laux // Applied Physics Letters. – 2011. – Vol. 99, Issue 22. – 121502.

16 Drabkina S.I. On the theory of evolution of a channel of spark discharge / S.I. Drabkina // Journal Exptl. Theoretical Physics. – 1951. – Vol. 21 (4). – Pp. 473–483.

17 Sedov L.I. Similarity and dimensional methods in mechanics / L.I. Sedov // CRC Press, Florida. – 1993.

18 Braginskiy S.I. Theory of the development of a spark channel / S.I. Braginskiy // Journal Exptl. Theoretical Physics. – 1958. – Vol. 34 (6). – Pp. 1548–1557.

19 Marode E. A model of the streamer-induced spark formation based on neutral dynamics / E. Marode, F. Bastien, M. Bakker // Journal of Applied Physics. – 1979. – Vol. 50. – Pp. 140–146.

20 Shneider M.N. Turbulent decay of after-spark channels / M.N. Shneider // Physics of plasmas. – 2006. – Vol. 13. – 073501.

21 Xu D.A. Thermal and hydrodynamic effects of nanosecond discharges in atmospheric pressure air / D.A. Xu, M.N. Shneider, D.A. Lacoste, C.O. Laux // Journal of Physics D: Applied Physics. – 2014. – Vol. 47.

22 Janda M. The streamer-to-spark transition in a transient spark: a dc-driven nanosecond-pulsed discharge in atmospheric air / M. Janda, Z. Machala, A. Niklov, V. Martisovits // Plasma Sources Science Technol. – 2012. – Vol. 21.

23 Popov N.A. Investigation of the mechanism for rapid heating of nitrogen and air in gas discharges / N.A. Popov // Plasma Physics Report. – 2001. – Vol. 27. – Pp. 886–896.

24 Akram M. The evolution of spark discharges in gases: 2. Numerical solution of one-dimensional models / M. Akram // Journal of Physics D: Applied Physics. – 1996. – Vol. 29. – 2137.

25 Paxton A.H., Gardner R.L., Baker L. Lightning return stroke. A numerical calculation of the optical radiation / A.H. Paxton, R.L. Gardner, L. Baker // Physics of Fluids. – 1986. – Vol. 29. – Pp. 2736–2741.

26 Lo A. Streamer-to-spark transition initiated by a nanosecond overvoltage pulsed discharge in air / A. Lo, A. Cessou, C. Lacour, B. Lecordier, P. Boubert, D.A. Xu, C.O. Laux, P. Vervisch // Plasma Sources Science Technology. – 2017. – Vol. 26. – 045012. doi: 10.1088/1361-6595/aa5c78.

27 Popov N.A. Formation and development of a leader channel in air / N.A. Popov // Plasma Physics Reports. – 2003. – Vol. 29 (8). – 695 p. doi: 10.1134/1.1601648.

28 Korytchehko K. Numerical simulation of influence of the non-equilibrium excitation of molecules on direct detonation initiation by spark discharge / K. Korytchehko, A. Ozerov, D. Vinnikov, Yu. Skob, D. Dubinin, R. Meleshchenko // Problems of atomic science and technology. – 2018. – Vol. 4. – Pp. 194–199.

29 Levin V. Initiation of gas detonation by means of electrical discharge / V. Levin, V. Markov, S. Osinkin, T. Zhuravskaya // International Symposium on Combustion and Atmospheric Pollution, St. Petersburg. – 2003. – Pp. 290–293.

30 Dale J.D. Application of high energy ignition systems to engines / J.D. Dale, M.D. Checkel, P.R. Smy // Progress in Energy and Combustion Science. – 1997. – Vol. 23 (5). – Pp. 379-398

31 Zhang B. Critical energy for direct initiation of spherical detonations in $H_2/N_2O/Ar$ mixtures / B. Zhang, Hoi Dick Ng, R. Mevel, J. H. Lee // International Journal of Hydrogen Energy. – 2011. – Vol. 36. – Pp. 5707–5716.

32 Panas A.J. Thermophysical properties of multiphase Fe-Al intermetallic-oxide ceramic coatings deposited by gas detonation spraying / A.J. Panas, C. Senderowski, B. Fikus // Thermochimica Acta. – 2019. – Vol. 676. – Pp. 164–171.

33 Fikus B. Modeling of Dynamics and Thermal History of Fe40Al Intermetallic Powder Particles Under Gas Detonation Spraying Using Propane-Air Mixture / B. Fikus, C. Senderowski, A.J. Panas // Journal of Thermal Spray Technology. – 2019. – Vol. 28. – Pp. 346–358.

34 Chin O.H. A simple monochromatic spark discharge light source / O.H. Chin, C. S. Wong // Review of Scientific Instruments. – 1989. – Vol. 60. – Pp. 3818–3819.

35 Hontanon E. The transition from spark to arc discharge and its implications with respect to nanoparticle production / E. Hontanon, J.M. Palomares, M. Stein, X. Guo, R. Engeln, H. Nirschl, F.E. Kruis // Journal of Nanoparticle Research. – 2013. – Vol. 15. – Pp. 1957.

36 Tholin F. Simulation of the hydrodynamic expansion following a nanosecond pulsed spark discharge in air at atmospheric pressure / F. Tholin, A. Bourdon // Journal of Physics D: Applied Physics. – 2013. – Vol. 46. – 365205. doi: 10.1088/0022-3727/46/36/365205.

37 Sendyka Bronisáaw. Determination of thermal efficiency of the spark ignition systems / Bronisáaw Sendyka, Wáadysáaw Mitianiec, Marcin Noga, Wáadysáaw Wachulec // Journal of KONES Powertrain and Transport. – 2010. – Vol. 17. – 365 p.

38 Lee J.J. Spark Ignition Measurements in Jet A: part II / J.J. Lee, J.E. Shepherd // California Institute of Technology. Explosion Dynamics Laboratory Report FM 99-7. – 2000.

39 Cui Gan. Experimental study of minimum ignition energy of methane/air mixtures at elevated temperatures and pressures / Gan Cui, Weiping Zeng, Zili Li, Yang Fu, HongboLi, Jie Chen // Fuel. – 2016. – Vol. 175. – Pp. 257-263.

40 Peng Zulin. Experimental investigation of spark discharge energy / Zulin Peng, Yu Zhang, Dongjie Chen, Jinsong Miao, Jiting Ouyang // Journal of Physics: Conference Series. – 2013. – Vol. 418. – Pp. 012100.

41 Zhang A. Numerical Investigation of Spark Ignition Events in Lean and Dilute Methane / Air Mixtures Using a Detailed Energy Deposition Model / A. Zhang, R. Scarcelli, S. Lee, T. Wallner // SAE Technical Paper. – 2016. – 14 p. https://doi.org/10.4271/2016-01-0609.

42 Abid F. Ultrahigh-Pressure Nitrogen Arcs Burning Inside Cylindrical Tubes / F. Abid, K. Niayesh, N. Stoa-Aanensen // IEEE Transactions on Plasma Science. – 2019. – Vol. 47. – Pp. 754-761.

43 Zhang Bo. Measurement of effective blast energy for direct initiation of spherical gaseous detonations from high-voltage spark discharge / Bo Zhang, Hoi Dick Ng, John H.S. Lee // Shock Waves. – 2012. – Vol. 1, no 1. – Pp. 1–7.

44 Dai X. Electron Impact Ionization, Attachment, Drift Velocities and Longitudinal Diffusion of SCN_2 at the Critical Point 127 K and 3.4 MPa / X. Dai, C. Chen, H. Wei, H. Zhu, Z. Liu, D. Zheng, S. Zhao // 2019 5th International

Conference on Electric Power Equipment – Switching Technology (ICEPE-ST). – 2019. – Pp. 762-766.

45 Khramtsov P.P. Toepler photometric measurements of electron density in colliding counter-flows of erosion plasma / P.P. Khramtsov, O.G. Penyazkov, V.M. Grishchenko, M.Yu. Chernik, I.A. Shikh // Problems of atomic science and technology. – 2013. – Vol. 83. – Pp. 267-269.

46 Zhi-yong L. Research on the discharge behaviors of SCF N_2 / L. Zhi-yong, W. Hong-qing, Z. Dawei, C. Chun-tian, Z. Dianchun // 2017 4th International Conference on Electric Power Equipment – Switching Technology (ICEPE-ST). – 2017. – Pp. 275-278.

47 Oreshkin V.I. Energy loss in spark gap switches / V.I. Oreshkin, I.V. Lavrinovich // Physics of Plasmas. – 2014. – Vol. 21, no. 4. – Pp. 043513.

48 Maas B., Krompholz H., Kristiansen M., Hagler M. Report of Texas Tech University ADA638709 (Lubbock, TX 79409, 1985), 100 p.

49 Krompholz H., Kristiansen M. Report of Texas Tech University AFORS TR-85-0282 (Lubbock, Texas 79409, 1984), 137 p.

50 Lee M. Voltage and Energy Deposition Characteristics of Spark Ignition Systems / M. Lee, M. Hall, O. Ezekoye, R. Matthews // SAE Technical Paper. – 2005. doi: 10.4271/2005-01-0231.

51 Tanaka Y. Hydrodynamic chemical non-equilibrium model of a pulse darc discharge in dry air at atmospheric pressure / Y. Tanaka, T. Michishita, Y. Uesugi // Plasma Sources Science and Technology. – 2005. – Vol. 14. – P. 134–151. doi: 10.1088/0963-0252/14/1/016

52 Georghiou G. Numerical modeling of atmospheric pressure gas discharges leading to plasma production / G. Georghiou, A. Papadakis, R. Morrow, A. Metaxas // Journal of Physics D: Applied Physics. – 2005. – Vol. 38. – R303. DOI: 10.1088/0022-3727/38/20/R01.

53 Глушнева А.В. Исследование влияния параметров разряда на распространение ударной волны из канала разрядной камеры / А.В. Глушнева,

А.С. Савельев, Э.Е. Сон, Д.В. Терешонок // Журнал технической физики. – 2015. – Вып. 3. – С. 153-155.

54 Васильев Л. А. Теневые методы / Л. А. Васильев. – Москва : Наука, 1968. – 400 с.

55 Randeberg E. A new method for generation of synchronised capacitive sparks of low energy / E. Randeberg, W. Olsen, R.K. Eckhoff // Journal of Electrostatics. – 2006. – Vol. 64 (3-4). – Pp. 263-272.

56 Zhou B. Movable Electrode Electrostatic Ignition Energy Apparatus / B. Zhou, J. Chen, H. Hui // Journal Hebei University (Natural Science Edition). – 2007. – Vol. 27 (6). – Pp. 593-596.

57 IEC 61241-2-3. Method for determining minimum ignition energy of dust/air mixtures, 1994.

58 Zhong Shengjun. Experimental Investigationon Measurement of Spark Discharge Energy Using Integration Method / Shengjun Zhong, Xinguang Li, Lin Lu, Chunli Ren, Zhufang Wang // Procedia Engineering. – 2011. – Vol. 15. – Pp. 2690-2694. doi: 10.1016/j.proeng.2011.08.506.

59 Bailey M. Incendivity of electrostatic discharge sindust clouds: the minimum ignition energy problem / M. Bailey, P. Hooker, P. Caine, N. Gibson // Journal of Loss Prevention in the Process Industries. – 2001. – Vol. 14, Issue 2. – Pp. 99-101. doi: 10.1016/S0950-4230(00)00030-9.

60 Eckhoff R. Minimum ignition energy (MIE) - a basic ignition sensitivity parameter in design of in trinsically safe electrical apparatus for explosive dust clouds / R. Eckhoff // Journal of Loss Prevention in the Process Industries. – 2002. – Vol. 15, Issue 4. – Pp. 305-310. doi: 10.1016/S0950-4230(02)00003-7.

61 Essmann S. Experimental investigation of the stochastic early flame propagation after ignition by a low-energy electrical discharge / S. Essmann, D. Markus, H. Grosshans, U. Maas // Combustion and Flame. – 2020. – Vol. 211. – Pp. 44-53.

62 Furusato T. Energy consumption characteristics of pulsed arc discharge in high pressure carbon dioxide up to supercritical phase / T. Furusato, T. Kamagahara,

H. Koreeda, T. Fujishima, T. Yamashita // 2016 IEEE International Power Modulator and High Voltage Conference (IPMHVC). – 2016. – Pp. 1-4.

63 Korytchenko K., Krivosheyev P., Dubinin D., Lisniak A., Afanasenko K., Harbuz S., Buskin O., Nikorchuk A., Tsebriuk I. Experimental research into the influence of two-spark ignition on the deflagration to detonation transition process in a detonation tube. *Eastern-European Journal of Enterprise Technologies.* 2019, vol. 4/5 (100), pp. 26-31.

64 Zhang B., Bai C. Critical energy of direct detonation initiation in gaseous fuel-oxygen mixtures. *Safety Science*, 2013, vol. 53, pp. 153-159. doi: 10.1016/j.ssci.2012.09.013.

65 Zhang J. Breakdown Voltage and Recovery Rate Estimation of a Supercritical Nitrogen Plasma Switch / J. Zhang, B.V. Heesch, F. Beckers, T. Huiskamp, G. Pemen // IEEE Transactions on Plasma Science. – 2014. – Vol. 42. – Pp. 376-383.

66 Palomares J.M. A time-resolved imaging and electrical study on a high current atmospheric pressure spark discharge / J.M. Palomares, A. Kohut, G. Galbács, R. Engeln, Zs. Geretovszky // Journal of Applied Physics. – 2015. – Vol. 118, Issue 23. – 233305. DOI: http://dx.doi.org/10.1063/1.4937729.

67 Gostimirovic M., Kovac P., Sekulic M., Skoric B. Influence of discharge energy on machining characteristics in EDM. *Journal of Mechanical Science and Technology,* 2012, vol. 26, issue 1, pp. 173-179. doi: 10.1007/s12206-011-0922-x.

68 Абрамсон И.С. Осциллографические исследования искрового разряда / И.С. Абрамсон, Н.М. Гегечкори // Журнал экспериментальной и теоретической физики. – 1951. – Т. 21, № 4. – С. 484-492.

69 Tholin F. Numerical simulation of nanosecond repetitively pulsed discharges in air at atmospheric pressure: application to plasma-assisted combustion. / F. Tholin // PhD Thesis, École Centrale. – 2012.

70 Knystautas R., Lee J.H.S. On the effective energy for direct initiation of gaseous detonations. *Combustion and flame*. 1976, vol. 27, pp. 221-230

71 Korytchenko K.V. Numerical simulation of the energy distribution into the spark at the direct detonation initiation / K.V. Korytchenko, V.I. Golota, D.V. Kudin, O.V. Sakun // Problems of atomic science and technology. – 2015. – No. 3 (97). – P. 154-158.

72 Korytchenko K.V. Model of the spark discharge initiation of detonation in a mixture of hydrogen with oxygen / K.V. Korytchenko, E.V. Poklonskii, P.N. Krivosheev // Russian Journal of Physical Chemistry B. – 2014. – Vol. 8, Issue 5. – Pp. 692-700. doi: 10.1134/s1990793114050169.

73 Korytchenko K.V. Validation of the numerical model of a spark channel expansion in a low-energy atmospheric pressure discharge / K.V. Korytchenko, V.S. Markov, I.V. Polyakov, E.D. Slepuzhnikov, R.G. Meleshchenko // Problems of Atomic Science and Technology. – 2018. – No. 4. – Pp. 144-149.

74 Essmann S. Investigation of the pressure wave and hot gas kernel induced by low energy electrical discharges / S. Essmann, D. Markus, U. Maas // Proc. 25th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS), Leeds, UK, 2–7 August. 2015.

75 Райзер Ю.П. Физика газового разряда: Научное издание / Ю.П. Райзер. – Долгопрудний: Издательский дом «Интеллект», 2009. – 736 с.

76 Zeldovich Y.B. Experimental investigation of spherical gas detonation / Y.B. Zeldovich, S.M. Kogarko, N.N. Simonov // Russian Journal Technical Physics. – 1956. – Vol. 26 (8). – P. 1744.

77 Arkhipenko V.I. Plasma non-equilibrium of the DC normal glow discharges in atmospheric pressure atomic and molecular gases / A.A. Kirillov, Y.A. Safronau, L.V. Simonchik, S.M. Zgirouski // The European Physical Journal D. – 2012. – Vol. 66:252. doi: https://doi.org/10.1140/epjd/e2012-30359-x.

78 Cole J.J. Continuous nanoparticle generation and assembly by atmospheric pressure arc discharge / J.J. Cole, E.Ch. Lin, Ch.R. Barry, H.O. Jacobs // Applied Physics Letters. – 2009. – Vol. 95 (113101). – https://doi.org/10.1063/1.3197646.

79 Förster H. Experimental study of metal nanoparticle synthesis by an arc evaporation / condensation process / H. Förster, C. Wolfrum, W. Peukert // Journal of Nanoparticle Research. – 2012. – Vol. 14:926. – doi: 10.1007/s11051-012-0926-1.

80 Hontañón Esther. The transition from spark to arc discharge and it simplications with respect to nanoparticle production / Esther Hontañón, Jose María Palomares, Matthias Stein, Xiaoai Guo, Richard Engeln, Hermann Nirschl, Frank Einar Kruis // Journal of Nanoparticle Research. – 2013. – Vol. 15. – doi: 10.1007/s11051-013-1957-y.

81 Kawahara N. Plasma temperature of spark discharge in a spark-ignition engine using a time series of spectra measurements / N. Kawahara, S. Hashimoto, E. Tomita. // 18th International Symposium on the Application of Laserand Imaging Techniques to Fluid Mechanics Lisbon, Portugal, July 4-7, 2016.

82 Zhu Jiajian. Spatiotemporally resolved characteristics of a gliding arc dischargein a turbulent airflow at atmospheric pressure / Jiajian Zhu, Jinlong Gao, Andreas Ehn, Marcus Aldén, Anders Larsson, Yukihiro Kusano, Zhongshan Li // Physics of Plasmas. – 2017. – Vol. 24, Issue 1. – Pp. 013514. doi: 10.1063/1.4974266.

83 Parkevich E.V. The peculiarities of near-cathode processes in air discharge at atmospheric pressure / E.V. Parkevich; M.A. Medvedev; A.V. Agafonov; S.I. Tkachenko; A.V. Oginov; A.I. Khirianova; A.R. Mingaleev; T.A. Shelkovenko; S.A. Pikuz. – 2018. doi: https://ui.adsabs.harvard.edu/abs/2018arXiv180401336P

84 Meuller Bengt O. Review of Spark Discharge Generators for Production of Nanoparticle Aerosols / Bengt O. Meuller, Maria E. Messing, David L. J. Engberg, Anna M. Jansson, Linda I.M. Johansson, Susanne M. Norlén, Nina Tureson, Knut Deppert // Aerosol Science and Technology – AEROSOL SCI TECH. – 2012. – Vol. 46. – Pp. 1256-1270. doi: 10.1080/02786826.2012.705448.

85 Emil Pincik. Aerodynamic model of spark discharge / Emil Pincik, Rudolf Hajossy, Robert Brunner // Journal of the Chinese Advanced Materials Society. – 2013. – Vol. 1, no. 2. – Pp. 111-120. doi:10.1080/22243682.2013.804641.

86 Laslov Geza. Spectroscopic Diagnostic of Spark Discharge Plasma at Atmospheric Pressure / Geza Laslov, Alexander Shuaibov, Sándor Szegedi, Elemér László// Journal of Chemistry and Chemical Engineering. – Vol. 8 (3). – Pp. 302-305. doi: 10.17265/1934-7375/2014.03.012.

87 Voloshko A. Nanoparticle for mation by means of spark discharge at atmospheric pressure / A. Voloshko // PhD thesis, Jean Monnet University, Saint-Etienne, France, 2015 – 128 p.

88 Messing M.E. The Advantages of Spark Discharge Generation for Manufacturing of Nanoparticles with Tailored Properties / M.E. Messing // Journal of Green Engineering. – 2016. – Vol. 5, Issue 4. – Pp. 83–96. doi: 10.13052/jge1904-4720.5346.

89 Kohut A. On the plasma and electrode erosion processes in spark discharge nanoparticle generators : dissertation / A. Kohut // University of Szeged. – 2017. – 109 p.

90 Hosseinzadeh S. Minimum ignition energy of mixtures of combustible dusts / S. Hosseinzadeh, F. Norman, F. Verplaetsen, J. Berghmans, E. Vanden Bulck// Journal of Loss Prevention in the Process Industries. – 2015. – Vol. 36. – Pp. 92-97.

91 Addai E.K. Minimum ignition energy of hybrid mixtures of combustible dusts and gases / E.K. Addai, D. Gabel, M. Kamal, U. Krause // Process Safety and Environmental Protection. – 2016. – Vol. 102. – Pp. 503-512.

92 Essmann S. Investigation of the spark channel of electrical discharges near the minimum ignition energy / S. Essmann, D. Markus, U. Maas // Plasma Physics Technology. – 2016. – Vol. 3. – Pp. 116-121.

93 P6015A 1000X High Voltage Probe. Instruction Manual. Tektronix, Inc. 14200 SW Karl Braun Drive, P.O. Box 500, Beaverton, OR 97077, USA.

94 Minesi N., Stepanyan S., Mariotto P., Stancu G-D., Laux C. On the arc transition mechanism in nanosecond air discharges. *AIAA Paper*, 2019, 2019-0463. doi: 10.2514/6.2019-0463.

95 Thiele M. Geometrical study of spark ignition in two dimensions / M. Thiele, J. Warnatz, U. Maas // Combustion theory and modelling. – 2000. – Vol. 4. – 413. doi: 10.1088/1364-7830/4/4/303.

96 Ono R. Gas temperature of capacitance spark discharge in air / R. Ono, M. Nifuku, S. Fujiwara, S. Horiguchi, T. Oda // Journal of Applied Physics. – 2005. – Vol. 97. – 123307. doi: 10.1063/1.1938274.

97 Prevosto L. Modelling of an Atmospheric Pressure Nitrogen Glow Discharge Operating in High-Gas Temperature Regimes / L. Prevosto, H. Kelly, B. Mancinelli // Plasma Chemistry and Plasma Processing. – 2016. – Vol. 36. doi: 10.1007/s11090-016-9716-3**.**

98 Essmann S. Precise triggering of electrical discharges by ultraviolet laser radiation for the investigation of ignition processes / S. Essmann, S. Spörhase, H. Grosshans, D. Markus // J. Electrostat. – 2018. – Vol. 91, no 34. doi: 10.1016/j.elstat.2017.12.003.

99 Marode E., Bastien F., Bakker M. A model of the streamer-induced spark formation based on neutral dynamics. *Journal of Applied Physics,* 1979, vol. 50, p. 140. doi: 10.1063/1.325697.

100 Essmann S. Investigation of the flame kernel propagation after ignition by a low energy electrical discharge. / S. Essmann, D. Markus, U. Maas // Proc. 26th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS), Boston, 30 July–4 August, 2017.

101 Kuhlman J.M. Performance of high-power gas-flow spark gaps / J.M. Kuhlman, G.M. Molen // AIAA Journal. – 1986. – Vol. 24, no 7. – Pp. 1112-1119. DOI: https://doi.org/10.2514/3.9400

102 Dreizler A. Characterisation of a spark ignition system by planar laser-induced fluorescence of OH at high repetition rates and comparison with chemical kinetic calculations. / A. Dreizler, S. Lindenmaier, U. Maas, J. Hult, M. Aldén, C.F. Kaminski // Applied Physics B. – 2000. – Vol. 70. – Pp. 287–294. doi: 10.1007/s003400050047.

103 Myron N. Plooster. Shock waves from line sources // Report NCAR-TN-37, November, 1968.

104 Korytchenko K.V. Numerical simulation of gas-dynamic stage of spark discharge in oxygen / K.V. Korytchenko, E.V. Poklonskiy, D.V. Vinnikov, D.V. Kudin // Problems of Atomic Science and Technology. – 2013. – Pp. 155-160.

105 Petersen E.L. Ignition Delay Times of Ram Accelerator CH/O/Diluent Mixtures / E.L. Petersen, D.F. Davidson, R. K. Hanson // Journal of Propulsion and Power. – 1999. – Vol. 15, no. 1. – Pp. 82-91.

106 Sally P.M. Bane. Investigation of the effect of electrode geometry on spark ignition / Sally P.M. Bane, Jack L. Ziegler, Joseph E. Shepherd // Combustion and Flame. – 2015. – Vol. 162, Issue 2. – Pp. 462-469. doi: https://doi.org/10.1016/j.combustflame.2014.07.017.

107 Zeldovich Y.B., Raizer Yu. Physics of shock waves and high-temperature hydrodynamic phenomena, DOVER PUBLICATIONS, INC., Mineola, NY. – 2002. – P. 896.

108 Zeldovich Y.B. Physics of shock waves and high-temperature hydrodynamic phenomena / Y.B. Zeldovich, Y.P. Raizer. – Moscow: Nauka. – 1966. – 133 p. [in Russian].

109 Korytchenko K.V. High-voltage electric discharge technique for the generation of shock waves and heating the reacting gas. / Dr. Sc. Thesis National Technical University «Kharkov Polytechnic Institute». – 2014. – 339 p. [in Russian].

110 Aleksandrov A.F. Dynamics and radiation of direct high-current air discharges / A.F. Aleksandrov, V.V. Zosimov, S.P. Kurdyumov, Y.P. Popov, A.A. Ruhadze, I.B. Timofeev // Journal of Experimental and Theoretical Physics. – 1971. – Vol. 61, no 5 (11). – Pp. 1841-1855.

111 Raizer Y.P. Gas discharge physics. – 2nd ed. Springer, Berlin, Barcelona. - 1997.

112 Mylnikov D.A. Investigation of the Energy Balance in the Spark Discharge Generator for Nanoparticles Synthesis / D.A. Mylnikov, A.A. Efimov,

V.V. Ivanov // Journal of Physics: Conference Series. – 2017. – Vol. 830. – Pp. 012162.

113 Webb N. An investigation of the control mechanism of plasma actuators in a shock wave-boundary layer interaction / N. Webb, C. Clifrd, M. Samimy // 51st AIAA Aerospace Sciences Meeting including the New Horizons Forum and Aerospace Exposition. AIAA Paper. – 2013. – Pp. 2013-402.

114 Sorensen T.P. Rise time and time-dependent spark-gap resistance in nitrogen and helium / T.P. Sorensen, V.M. Ristic // Journal of Applied Physics. – Vol. 48, no. 1. – Pp. 114-117. doi: https://doi.org/10.1063/1.323311

115 Hemmi R. Anode-fall and cathode-fall voltages of air arc in atmosphere between silver electrodes / R. Hemmi, Y. Yokomizu, T. Matsumura // Journal of Physics D: Applied Physics. – 2003. – Vol. 36, no 9. – Pp. 1097, doi: 10.1088/0022-3727/36/9/307.

116 Townsend J.S. Electricity in Gases, Clarendon Press. – Oxford. – 1915.

117 Donskoi A.V., Goldfarb V.M., Klubnikin V.S., Dresvin S.V., Eckert H.U., Cheron T. *Physics and technology of low-temperature plasmas* (Hardcover), 1977.

118 Raizer Yu. Gas discharge physics, *Spinger-Verlag,* Germany. – 1991. – Pp. 460.

119 Sakai S. Nitric Oxide Generator Based on Pulsed Arc Discharge / S. Sakai, M. Matsuda, D. Wang, T. Namihira, H. Akiyama, K. Okamoto, Toda K. // ACTA PHYSICA POLONICA A. – 2009. – Vol. 115, no. 6 – Pp. 1104-1106.

120 D’Entremont J. H. Plasma Control of Combustion Instability in a Lean Direct Injection Gas Turbine Combustor / J.H. D’Entremont, R. Gejji, P.B. Venkatesh, S.P. M. Bane // 52nd AIAA Aerospace Sciences Meeting. – 2014, AIAA 2014-0622.

121 Różowicz S. Use of the mathematical model of the ignition system to analyze the spark discharge, including the destruction of spark plug electrodes / S. Różowicz // Open Physics. – 2018. – Vol. 16. – Pp. 57–62.

122 Istenič M. Dynamic resistance calculation of nanosecond spark-gaps / M. Istenič, I. Smith, B. Novac // 2005 IEEE Pulsed Power Conference, 13-15 June, INSPEC Accession Number: 10236068, 2005.

123 Yinsheng F. Research on maintaining voltage of spark discharge in EDM / F. Yinsheng, B. Jicheng, L. Qiang, L. Chaojiang, C. Yan, L. Zhengkai // Procedia CIRP. – 2016. – Vol. 42. – Pp. 28-33.

124 Калантаров П.Л. Расчет индуктивностей / П.Л. Калантаров, Л.А. Цейтлин. – Л.: Атомэнергоиздат, 1986. – 481 с.

125 François M. Numerical Analysis of Different Vibrational Relaxation Models for Master Equations / M. François // Rapport de Recherche Inria. – 1997. – P. 36.

126 Mallinger, François & Mn, Projet. Numerical Analysis of Different Vibrational Relaxation Models for Master Equations. – 1997.

127 Ширшов И.Г. Плазменная резка / И.Г. Ширшов, В.Н. Котиков. – Ленинград: изд-во Машиностроение, Ленинградское отделение. – 1987. – 192 с.

128 Korytchenko K. Challenges of energy measurements of low-energy spark discharges / K. Korytchenko, R. Tomashevskiy, I. Varshamova, S. Essmann, D. Dubinin, K. Ostapov // 2020 IEEE KhPI Week on Advanced Technology (KhPIWeek). – 2020. – Pp. 421-424.