Literatura

[1] WANG, J. and Y. BENTLEY. Modelling world natural gas production. *Energy Reports* [online]. 2020, 6, 1363–1372. Available at: doi:10.1016/j.egyr.2020.05.018

[2] MOHR, S.H., J. WANG, G. ELLEM, J. WARD and D. GIURCO. Projection of world fossil fuels by country. *Fuel* [online]. 2015, 141, 120–135. Available at: doi:10.1016/j.fuel.2014.10.030

[3] HALTTUNEN, K., R. SLADE and I. STAFFELL. What if we never run out of oil? From certainty of "peak oil" to "peak demand." *Energy Research and Social Science* [online]. 2022, 85. 1–6. Available at: doi:10.1016/j.erss.2021.102407

[4] CUI, L., S. WENG, D. KIRIKKALELI, M.A. BASHIR, H. RJOUB and Y. ZHOU. Exploring the role of natural resources, natural gas and oil production for economic growth of China. *Resources Policy* [online]. 2021, 74. Available at: doi:10.1016/j.resourpol.2021.102429

[5] *BP Energy Outlook 2016*. B.m.: BP Global, 2016.

[6] ZILVAR, J. *What will be the energy industry in 2035?* 2016.

[7] MOHR, S. H., J. WANG, G. K. ELLEM, J. D. WARD and D. P. GIURCO. Projection of world fossil fuels by country. *Fuel* [online]. 2015, 141, 120–135. Available at: doi:10.1016/j.fuel.2014.10.030

[8] MEYS, R., F. FRICK, S. WESTHUES, A. STERNBERG, J. KLANKERMAYER and A. BARDOW. Towards a circular economy for plastic packaging wastes – the environmental potential of chemical recycling. *Resources, Conservation and Recycling* [online]. 2020, 162. Available at: doi:10.1016/j.resconrec.2020.105010

[9] SOTO, J.M., G. BLÁZQUEZ, M. CALERO, L. QUESADA, V. GODOY and M.Á. MARTÍN-LARA. A real case study of mechanical recycling as an alternative for managing of polyethylene plastic film presented in mixed municipal solid waste. *Journal of Cleaner Production* [online]. 2018, 203, 777–787. Available at: doi:10.1016/j.jclepro.2018.08.302

[10] YAMAMOTO, M. and T.C. KINNAMAN. Is incineration repressing recycling? *Journal of Environmental Economics and Management* [online]. 2022, 111. Available at: doi:10.1016/j.jeem.2021.102593

[11] PRATEEP NA TALANG, R. and S. SIRIVITHAYAPAKORN. Environmental and financial assessments of open burning, open dumping and integrated municipal solid waste disposal schemes among different income groups. *Journal of Cleaner Production* [online]. 2021, 312. Available at: doi:10.1016/j.jclepro.2021.127761

[12] FERDOUS, W., A. MANALO, R. SIDDIQUE, P. MENDIS, Y. ZHUGE, H.S. WONG, W. LOKUGE, T. ARAVINTHAN and P. SCHUBEL. Recycling of landfill wastes (tyres, plastics and glass) in construction – A review on global waste generation, performance, application and future opportunities. *Resources, Conservation and Recycling* [online]. 2021, 173. Available at: doi:10.1016/j.resconrec.2021.105745

[13] *U.S. National Park Service; Mote Marine Lab.* [online]. 2015. Available at: http://des.nh.gov/organization/divisions/water/wmb/coastal/trash/documents/marine_debris.pdf

[14] SLEIGHT, K.. *How Quickly Does Plastic Breakdown? The New Biodegradable Plastic Option.* 2011.

[15] (EPA), United States Environmental Protection Agency. *National Overview: Facts and Figures on Materials, Wastes and Recycling.* 2018.

[16] ZHU, X., S. LI, Y. ZHANG, J. LI, Z. ZHANG, Y. SUN, S. ZHOU, N. LI, B. YAN and G. CHEN. Flue gas torrefaction of municipal solid waste: Fuel properties, combustion characterizations, and nitrogen /sulfur emissions. *Bioresource Technology* [online]. 2022, 351. Available at: doi:10.1016/j.biortech.2022.126967

[17] MOJAVER, M., R. HASANZADEH, T. AZDAST and C.B. PARK. Comparative study on air gasification of plastic waste and conventional biomass based on coupling of AHP/TOPSIS multi-criteria decision analysis. *Chemosphere* [online]. 2022, 286. Available at: doi:10.1016/j.chemosphere.2021.131867

[18] ALSTON, S. M., A. D CLARK, J. C. ARNOLD and B. K. STEIN. Environmental impact of pyrolysis of mixed WEEE plastics part 1: Experimental pyrolysis data. *Environmental science & technology* [online]. 2011, 45(21), 9380–5 [accessed. 2016-01-28]. ISSN 1520-5851. Available at: doi:10.1021/es201664h

[19] NSAFUL, F., J. F. GÖRGENS and J. H. KNOETZE. Comparison of combustion and pyrolysis for energy generation in a sugarcane mill. *Energy Conversion and Management* [online]. 2013, 74, 524–534. Available at: doi:10.1016/j.enconman.2013.07.024

[20] JASMINSKÁ, N., T. BRESTOVIČ and M. ČARNOGURSKÁ. The effect of temperature pyrolysis process of used tires on the quality of output products. *Acta Mechanica et Automatica*. 2013, 7(1), 20–25. ISSN 18984088.

[21] HONUS, S. *Metoda zvýšení efektivity termických procesů v reaktorech pro energetické konverze*. Ostrava: Vysoká škola báňská - Technická univerzita Ostrava. Dizertační práce, 265 s., 2012.

[22] HONUS, S. *Potenciál energetického využití produktů tepelného rozložení polymerů*. Ostrava: Vysoká škola báňská - Technická univerzita Ostrava, Habilitační práce, 2016.

[23] YU, S., Q. YANG, Z. LI, T. LIU, L. TAO, E. YAO and Y. ZHANG. Mechanism analysis of gas products from catalytic pyrolysis of tire rubber based on reaction thermodynamics and kinetics. *Fuel Processing Technology* [online]. 2022, 227. Available at: doi:10.1016/j.fuproc.2021.107134

[24] DU, Y., T. JU, Y. MENG, T. LAN, S. HAN and J. JIANG. A review on municipal solid waste pyrolysis of different composition for gas production. *Fuel Processing Technology* [online]. 2021, 224. Available at: doi:10.1016/j.fuproc.2021.107026

[25] SEKAR, M., V.K. PONNUSAMY, A. PUGAZHENDHI, S. NIŽETIĆ and T.R. PRAVEENKUMAR. Production and utilization of pyrolysis oil from solidplastic wastes: A review on pyrolysis process and influence of reactors design. *Journal of Environmental Management* [online]. 2022, 302. Available at: doi:10.1016/j.jenvman.2021.114046

[26] LEI, Z., S. HAO, J. YANG and X. DAN. Study on solid waste pyrolysis coke catalyst for catalytic cracking of coal tar. *International Journal of Hydrogen Energy* [online]. 2020, 45(38), 19280–19290. Available at: doi:10.1016/j.ijhydene.2020.05.075

[27] NISAR, J., G. ALI, A. SHAH, Z.H. FAROOQI, M. IQBAL, S. KHAN, S.T.H. SHERAZI and SIRAJUDDIN. Production of fuel oil and combustible gases from pyrolysis of polystyrene waste: Kinetics and thermodynamics interpretation. *Environmental Technology and Innovation* [online]. 2021, 24. Available at: doi:10.1016/j.eti.2021.101996

[28] ZHANG, J.-H., G.-J. KANG, H. YANG, Z.-E. LIU, J. YU and S.-Q. GAO. Co-pyrolysis kinetics and pyrolysis product distribution of various tannery wastes. *Ranliao Huaxue Xuebao/Journal of Fuel Chemistry and Technology* [online]. 2021, 49(11), 1638–1647. Available

at: doi:10.1016/S1872-5813(21)60133-0

[29] YU, G., X. FAN, P. LIANG, G.-M. ZHAO and X. HU. Online characterization of pyrolysis products and kinetics study for the pyrolysis of a coal. *Journal of Analytical and Applied Pyrolysis* [online]. 2021, 160. Available at: doi:10.1016/j.jaap.2021.105376

[30] DÍEZ, C., O. MARTÍNEZ, L. F. CALVO, J. CARA and A. MORÁN. Pyrolysis of tyres. Influence of the final temperature of the process on emissions and the calorific value of the products recovered. *Waste management (New York, N.Y.)* [online]. 2004, 24(5), 463–9. Available at: doi:10.1016/j.wasman.2003.11.006

[31] PARASCHIV, M., R. KUNCSER, M. TAZEROUT and T. PRISECARU. New energy value chain through pyrolysis of hospital plastic waste. *Applied Thermal Engineering* [online]. 2015, 87, 424–433. Available at: doi:10.1016/j.applthermaleng.2015.04.070

[32] AL-SALEM, S. M. S., P. LETTIERI and J. BAEYENS. The valorization of plastic solid waste (PSW) by primary to quaternary routes: From re-use to energy and chemicals. *Progress in Energy and Combustion Science* [online]. 2010, 36(1), 103–129. Available at: doi:10.1016/j.pecs.2009.09.001

[33] CHEN, D., L. YIN, H. WANG and P. HE. Reprint of: Pyrolysis technologies for municipal solid waste: a review. *Waste management (New York, N.Y.)* [online]. 2015, 37, 116–36. Available at: doi:10.1016/j.wasman.2015.01.022

[34] LOPEZ-URIONABARRENECHEA, A., I. D. DE MARCO, B. M. CABALLERO, M. F. LARESGOITI, Aitziber ADRADOS and Amelia TORRES. Pyrolysis of municipal plastic wastes II: Influence of raw material composition under catalytic conditions. *Waste management (New York, N.Y.)* [online]. 2011, 31(9–10), 1973–83. Available at: doi:10.1016/j.wasman.2011.05.021

[35] HONUS, S., S. KUMAGAI, O. NĚMČEK and T. YOSHIOKA. Replacing conventional fuels in USA, Europe, and UK with plastic pyrolysis gases – Part I: Experiments and graphical interchangeability methods. *Energy Conversion and Management* [online]. 2016, 126, 1118–1127. Available at: doi:10.1016/j.enconman.2016.08.055

[36] KRUTOF, A. and K. HAWBOLDT. Blends of pyrolysis oil, petroleum, and other bio-based fuels: A review. *Renewable and Sustainable Energy Reviews* [online]. 2016, 59, 406–419. Available at: doi:10.1016/j.rser.2015.12.304

[37] VIHAR, R., T. SELJAK, S. RODMAN OPREŠNIK and T. KATRAŠNIK. Combustion characteristics of tire pyrolysis oil in turbo charged compression ignition engine. *Fuel* [online]. 2015, 150, 226–235. Available at: doi:10.1016/j.fuel.2015.01.087

[38] AVSENIK, L., D. KLINAR, M. TUŠAR and L. S. PERŠE. Use of modified slow tire pyrolysis product as a rejuvenator for aged bitumen. *Construction and Building Materials* [online]. 2016, 120, 605–616. Available at: doi:10.1016/j.conbuildmat.2016.05.140

[39] ANUAR SHARUDDIN, S. D., F. ABNISA, W. M. A.. WAN DAUD and Mohamed Kheireddine AROUA. A review on pyrolysis of plastic wastes. *Energy Conversion and Management* [online]. 2016, 115, 308–326. Available at: doi:10.1016/j.enconman.2016.02.037

[40] WILLIAMS, P. T. Pyrolysis of waste tyres: a review. *Waste management (New York, N.Y.)* [online]. 2013, 33(8), 1714–28. Available at: doi:10.1016/j.wasman.2013.05.003

[41] HUANG, Y.-F., P.-T. CHIUEH, W.-H. KUAN and S.-L LO. Effects of lignocellulosic composition and microwave power level on the gaseous product of microwave pyrolysis. *Energy* [online]. 2015, 89, 974–981. Available at: doi:10.1016/j.energy.2015.06.035

[42] BAI, Y., Pei WANG, L. YAN, Ch. LIU, F. LI and K. XIE. Effects of CO2 on gas evolution and char

structure formation during lump coal pyrolysis at elevated pressures. *Journal of Analytical and Applied Pyrolysis* [online]. 2013, 104, 202–209. Available at: doi:10.1016/j.jaap.2013.08.003

[43] GAO, Y., Y. YANG, Z. QIN and Y.SUN. Factors affecting the yield of bio-oil from the pyrolysis of coconut shell. *SpringerPlus* [online]. 2016, 5(1), 333. Available at: doi:10.1186/s40064-016-1974-2

[44] ZHAO, N. and B.-X. LI. The effect of sodium chloride on the pyrolysis of rice husk. *Applied Energy* [online]. 2016, 178, 346–352.Available at: doi:10.1016/j.apenergy.2016.06.082

[45] NAMIOKA, T., A. SAITO, Y. INOUE, Y. PARK, T. MIN, S. ROH and K. YOSHIKAWA. Hydrogen-rich gas production from waste plastics by pyrolysis and low-temperature steam reforming over a ruthenium catalyst. *Applied Energy* [online]. 2011, 88(6), 2019–2026. Available at: doi:10.1016/j.apenergy.2010.12.053

[46] XIONG, S., J. ZHUO, H. ZHOU, R. PANG and Q. YAO. Study on the co-pyrolysis of high density polyethylene and potato blends using thermogravimetric analyzer and tubular furnace. *Journal of Analytical and Applied Pyrolysis* [online]. 2015, 112, 66–73. Available at: doi:10.1016/j.jaap.2015.02.020

[47] WEI, T.-T., K.-J. WU, S.-L. LEE and Y.-H. LIN. Chemical recycling of post-consumer polymer waste over fluidizing cracking catalysts for producing chemicals and hydrocarbon fuels. *Resources, Conservation and Recycling* [online]. 2010, 54(11), 952–961. Available at: doi:10.1016/j.resconrec.2010.02.002

[48] HUANG, W.-Ch., M.-S. HUANG, Ch.-F. HUANG, Ch.-Ch. CHEN and K.-L. OU. Thermochemical conversion of polymer wastes into hydrocarbon fuels over various fluidizing cracking catalysts. *Fuel* [online]. 2010, 89(9), 2305–2316. Available at: doi:10.1016/j.fuel.2010.04.013

[49] IMAM, T. and S. CAPAREDA. Characterization of bio-oil, syn-gas and bio-char from switchgrass pyrolysis at various temperatures. *Journal of Analytical and Applied Pyrolysis* [online]. 2012, 93, 170–177. Available at: doi:10.1016/j.jaap.2011.11.010

[50] SHARMA, B. K., B. R. MOSER, K. E. VERMILLION, K. M. DOLL and N. RAJAGOPALAN. Production, characterization and fuel properties of alternative diesel fuel from pyrolysis of waste plastic grocery bags. *Fuel Processing Technology* [online]. 2014, 122, 79–90. Available at: doi:10.1016/j.fuproc.2014.01.019

[51] CHEN, R., S. ZHANG, X. YANG, G. LI, H. ZHOU, Q. LI and Y. ZHANG. Thermal behaviour and kinetic study of co-pyrolysis of microalgae with different plastics. *Waste Management* [online]. 2021, 126, 331–339. Available at: doi:10.1016/j.wasman.2021.03.001

[52] DU, H., X. MA, M. JIANG, P. YAN and Z.C. ZHANG. Autocatalytic co-upgrading of biochar and pyrolysis gas to syngas. *Energy* [online]. 2021, 221. Available at: doi:10.1016/j.energy.2021.119837

[53] SIDDIQUI, M. N. and H. H. REDHWI. Pyrolysis of mixed plastics for the recovery of useful products. *Fuel Processing Technology* [online]. 2009, 90(4), 545–552. Available at: doi:10.1016/j.fuproc.2009.01.003

[54] ZHAO, B., X. ZHANG, L. CHEN, L. SUN, H. SI and G. CHEN. High quality fuel gas from biomass pyrolysis with calcium oxide. *Bioresource technology* [online]. 2014, 156, 78–83. Available at: doi:10.1016/j.biortech.2014.01.031

[55] AYLÓN, E., R. MURILLO, A. FERNÁNDEZ-COLINO, A. ARANDA, T. GARCÍA, M. S. CALLÉN and

A. M. MASTRAL. Emissions from the combustion of gas-phase products at tyre pyrolysis. *Journal of Analytical and Applied Pyrolysis* [online]. 2007, 79(1–2), 210–214. Available at: doi:10.1016/j.jaap.2006.10.009

[56] BORA, R. R., R. WANG and F. YOU. Waste polypropylene plastic recycling toward climate change mitigation and circular economy: Energy, environmental, and technoeconomic perspectives. *ACS Sustainable Chemistry and Engineering* [online]. 2020, 8(43), 16350–16363. Available at: doi:10.1021/acssuschemeng.0c06311

[57] ZHONG, M., Z. ZHANG, Q. ZHOU, J. YUE, S. GAO and G. XU. Continuous high-temperature fluidized bed pyrolysis of coal in complex atmospheres: Product distribution and pyrolysis gas. *Journal of Analytical and Applied Pyrolysis* [online]. 2012, 97, 123–129 [accessed. 2016-07-12]. ISSN 01652370. Available at: doi:10.1016/j.jaap.2012.04.009

[58] SINGH, R. K., B. RUJ, A. K. SADHUKHAN and P. GUPTA. A TG-FTIR investigation on the co-pyrolysis of the waste HDPE, PP, PS and PET under high heating conditions. *Journal of the Energy Institute* [online]. 2020, 93(3), 1020–1035. Available at: doi:10.1016/j.joei.2019.09.003

[59] CHEN, D., D. LIU, H. ZHANG, Y. CHEN and Q. LI. Bamboo pyrolysis using TG–FTIR and a lab-scale reactor: Analysis of pyrolysis behavior, product properties, and carbon and energy yields. *Fuel* [online]. 2015, 148, 79–86. Available at: doi:10.1016/j.fuel.2015.01.092

[60] KLAIMY, S., C. CIOTONEA, J. DHAINAUT, S. ROYER, M. CASETTA, S. DUQUESNE, G. TRICOT and J.-F. LAMONIER. Flash Catalytic Pyrolysis of Polyethylene over (Alumino)silicate Materials. *ChemCatChem* [online]. 2020, 12(4), 1109–1116. Available at: doi:10.1002/cctc.201901819

[61] PARK, K.-B., Y.-S. JEONG, B. GUZELCIFTCI and J.-S. KIM. Characteristics of a new type continuous two-stage pyrolysis of waste polyethylene. *Energy* [online]. 2019, 166, 343–351. Available at: doi:10.1016/j.energy.2018.10.078

[62] AHMED, I. I. and A. K. GUPTA. Pyrolysis and gasification of food waste: Syngas characteristics and char gasification kinetics. *Applied Energy* [online]. 2010, 87(1), 101–108. Available at: doi:10.1016/j.apenergy.2009.08.032

[63] LOU, R. and S. WU. Products properties from fast pyrolysis of enzymatic/mild acidolysis lignin. *Applied Energy* [online]. 2011, 88(1), 316–322. Available at: doi:10.1016/j.apenergy.2010.06.028

[64] SINGH, R. K., B. RUJ, A. K. SADHUKHAN and P. GUPTA. Thermal degradation of waste plastics under non-sweeping atmosphere: Part 2: Effect of process temperature on product characteristics and their future applications. *Journal of Environmental Management* [online]. 2020, 261. Available at: doi:10.1016/j.jenvman.2020.110112

[65] AHMED, I. I. and A. K. GUPTA. Syngas yield during pyrolysis and steam gasification of paper. *Applied Energy* [online]. 2009, 86(9), 1813–1821. Available at: doi:10.1016/j.apenergy.2009.01.025

[66] LI, D., S. LEI, G. RAJPUT, L. ZHONG, W. MA and G. CHEN. Study on the co-pyrolysis of waste tires and plastics. *Energy* [online]. 2021, 226. Available at: doi:10.1016/j.energy.2021.120381

[67] *The Japan Containers And Packaging Recycling Association. Report on evaluation of environmental burden of plastic recycling methods* [online]. 2014. Available at: http://www.jcpra.or.jp/Portals/0/resource/00oshirase/pdf/lca_kanzen.pdf

[68] INSTITUTE FOR PROSPECTIVE TECHNOLOGICAL STUDIES. *End-of-Waste Criteria for Waste Plastic for Conversion*. 2012.

[69] THEMELIS, N. J. and Ch. MUSSCHE. *2014 Energy And Economic Value of Municipal Solid Waste (MSW), Including Non-Recycled Plastics (NRP), Currently Landfilled in the Fifty States*. 2014.

[70] HONUS, S., S. KUMAGAI, G. FEDORKO, V. MOLNÁR and T. YOSHIOKA. Pyrolysis gases produced from individual and mixed PE, PP, PS, PVC, and PET—Part I: Production and physical properties. *Fuel* [online]. 2018, 221. Available at: doi:10.1016/j.fuel.2018.02.074

[71] ZHOU, H., Ch. WU, J. A. ONWUDILI, A. MENG, Y. ZHANG and P. T. WILLIAMS. Influence of process conditions on the formation of 2–4 ring polycyclic aromatic hydrocarbons from the pyrolysis of polyvinyl chloride. *Fuel Processing Technology* [online]. 2016, 144, 299–304. Available at: doi:10.1016/j.fuproc.2016.01.013

[72] QIAN, Ch., M. ZHOU, J. WEI, P. YE and X. YANG. Pyrolysis and co-pyrolysis of lignite and plastic. *International Journal of Mining Science and Technology* [online]. 2014, 24(1), 137–141. Available at: doi:10.1016/j.ijmst.2013.12.023

[73] *ISO 6976: Natural gas -- Calculation of calorific values, density, relative density and Wobbe index from composition*. 1998.

[74] TADMOR, Z. and C. G. GOGOS. *Principles of Polymer Processing*. 2nd ed. New Jersey: A John Wiley & Sons, Inc., 2006. ISBN 0-471-38770-3.

[75] HALL, Ch. *Polymer Materials - An Introduction for Technologists and Scientists*. 2nd ed. Basingstoke: Macmillan Education, Ltd., 1989.

[76] CRAWFORD, R. J. *Plastics Engineering*. Oxford: Butterworth-Heinemann, 1998. ISBN 0 7506 3764 1.

[77] *Mitsubishi Engineering-Plastics Corporation: Thermal Properties of Plastics* [online]. Available at: http://www.m-ep.co.jp/en/index.html

[78] MLEZIVA, J. and J. ŠŇUPÁREK. *Polymery - výroba, struktura, vlastnosti a použití (Polymers - Production, Structure, Properties and Applications*. Praha: Sobotáles, 2000. ISBN 80-85920-72-7.

[79] *Specific Heat of common Substances* [online]. 2016. Available at: http://www.engineeringtoolbox.com/

[80] DOU, B., Ch. WANG, H. CHEN, Y. SONG, B. XIE, Y. XU and Ch. TAN. Research progress of hot gas filtration, desulphurization and HCl removal in coal-derived fuel gas: A review. *Chemical Engineering Research and Design* [online]. 2012, 90(11), 1901–1917. Available at: doi:10.1016/j.cherd.2012.04.009

[81] PELUCCHI, M., A. FRASSOLDATI, T. FARAVELLI, B. RUSCIC and P.GLARBORG. High-temperature chemistry of HCl and Cl2. *Combustion and Flame* [online]. 2015, 162(6), 2693–2704. Available at: doi:10.1016/j.combustflame.2015.04.002

[82] KYSELA, L.. *Plynárenství*. 1st ed. Ostrava: VŠB - Technical University of Ostrava, 2008.

[83] AZIZI, N., R. M. BEHBAHANI and M. A. ISAZADEH. An efficient correlation for calculating compressibility factor of natural gases. *Journal of Natural Gas Chemistry* [online]. 2010, 19(6), 642–645. Available at: doi:10.1016/S1003-9953(09)60081-5

[84] GLASSMAN, I. and R. A. YETTER. *Combustion* [online]. 4th ed. San Diego: Elsevier Inc., 2008. ISBN 9780120885732. Available at: http://www.scopus.com/inward/record.url?eid=2-

s2.0-84882228102&partnerID=tZOtx3y1

[85] PIZZUTI, L., C. A.MARTINS and P. T. LACAVA. Laminar burning velocity and flammability limits in biogas: A literature review. *Renewable and Sustainable Energy Reviews* [online]. 2016, 62, 856–865. Available at: doi:10.1016/j.rser.2016.05.011

[86] FÍK, J. *Plyn ve vytápění.* Praha: Society for Environmental Technology, 1994.

[87] WALKER, P .L. and C. C. WRIGHT. Hydrocarbon Burning Velocities Predicted by Thermal Versus Diffusional Mechanisms. *Journal of the American Chemical Society.* 1952, 74, 3769–3771.

[88] *Methane Number and Fuel Composition.* 2001.

[89] *ISO 15403-1:2006: Natural gas -- Natural gas for use as a compressed fuel for vehicles -- Part 1: Designation of the quality.* 2006.

[90] NOLAN, D. P. *Handbook of Fire and Explosion Protection Engineering Principles: For Oil, Gas, Chemical and Related Facilities: Third Edition* [online]. New Jersey: Elsevier Inc., 2014. ISBN 9780323311441. Available at: http://www.scopus.com/inward/record.url?eid=2-s2.0-84941645377&partnerID=tZOtx3y1

[91] COWARD, H. F. and G. W. JONES. *Limits of Flammability of Gases and Vapors.* 1st ed. Washington: United States Fobernment Pringting Office, 1952.

[92] *Lower and Upper Explosive Limits for Flammable Gases and Vapors (LEL/UEL)* [online]. Available at: http://www.mathesongas.com/index.aspx

[93] *CAMEO Chemicals (Database of Hazardous Materials)* [online]. Available at: https://cameochemicals.noaa.gov/

[94] HONUS, S., S. KUMAGAI, V. MOLNÁR, G. FEDORKO and T. YOSHIOKA. Pyrolysis gases produced from individual and mixed PE, PP, PS, PVC, and PET—Part II: Fuel characteristics. *Fuel* [online]. 2018, 221, 361–373. ISSN 00162361. Available at: doi:10.1016/j.fuel.2018.02.075

[95] *International Gas Union, BP International Company, GL Industrial Services UK. Guidebook to Gas Interchangeability and Gas Quality.* 2011.

[96] MARSOVÁ, E. Technická normalizácia biometánu na používanie v doprave a na dodávanie do plynárenských sietí. *Slovgas.* 2013, (3), 20–24.

[97] *Cummins Westport* [online]. 2016. Available at: http://www.cumminswestport.com/

[98] BEROUN, S. and V. ŠTECHR. Výkonové a emisní parametry plynových motorů kogeneračních jednotek při provozu na paliva různé kvality. In: *7th International Symposium Motor Fuels 06*. Bratislava: Slovnaft, Inc., 2006, p. 434-451 ISBN 80-968011-3-9.

[99] *Southern California Gas Company. Final LNG Research Study White Paper - Version 2.0.* 2004.

[100] ORTÍZ, J. M. Fundamentos de la Intercambiabilidad del Gas Natural. *Ciencia.* 2014, 6–15.

[101] ZHANG, Y., Ch. QIN, H. XING and P. LIU. Experimental research on performance response of domestic gas cookers to variable natural gas constituents. *Journal of Natural Gas Science and Engineering* [online]. 2013, 10, 41–50. Available at: doi:10.1016/j.jngse.2012.10.004

[102] QUINTERO-CORONEL, D. A., Y. A. LENIS-RODAS, L. CORREDOR, P. PERREAULT, A. BULA and A. GONZALEZ-QUIROGA. Co-gasification of biomass and coal in a top-lit updraft fixed bed gasifier: Syngas composition and its interchangeability with natural gas for combustion applications. *Fuel* [online]. 2022, 316. Available at: doi:10.1016/j.fuel.2022.123394

[103] DAI, W., Ch. QIN, Z. CHEN, Ch. TONG and P. LIU. Experimental studies of flame stability limits of biogas flame. *Energy Conversion and Management* [online]. 2012, 63, 157–161. Available at: doi:10.1016/j.enconman.2012.03.021

[104] XIANG, L., G. THEOTOKATOS and Y. DING. Investigation on gaseous fuels interchangeability with an extended zero-dimensional engine model. *Energy Conversion and Management* [online]. 2019, 183, 500–514. Available at: doi:10.1016/j.enconman.2019.01.013

[105] LEE, C., Ch. HWANG and H.-Y. LEE. A study on the interchangeability of LFG–LPG mixed fuels with LFG quality in domestic combustion appliances. *Fuel* [online]. 2008, 87(3), 297–303 [accessed. 2016-01-31]. ISSN 00162361. Available at: doi:10.1016/j.fuel.2007.04.025

[106] CARDONA, C. A. and A. A. AMELL. Laminar burning velocity and interchangeability analysis of biogas/C3H8/H2 with normal and oxygen-enriched air. *International Journal of Hydrogen Energy* [online]. 2013, 38(19), 7994–8001. Available at: doi:10.1016/j.ijhydene.2013.04.094

[107] CHEN, Z., Ch. QIN and Y. ZHANG. Flame stability of partially premixed combustion for PNG/LNG interchangeability. *Journal of Natural Gas Science and Engineering* [online]. 2014, 21, 467–473. Available at: doi:10.1016/j.jngse.2014.09.018

[108] GRIMA-OLMEDO, C., Á. RAMÍREZ-GÓMEZ and R. ALCALDE-CARTAGENA. Energetic performance of landfill and digester biogas in a domestic cooker. *Applied Energy* [online]. 2014, 134, 301–308. Available at: doi:10.1016/j.apenergy.2014.08.032

[109] MISHRA, D. P. Experimental studies of flame stability limits of CNG–air premixed flame. *Energy Conversion and Management* [online]. 2007, 48(4), 1208–1211. ISSN 01968904. Available at: doi:10.1016/j.enconman.2006.10.011

[110] HERNÁNDEZ, J. J., M. LAPUERTA and J. BARBA. Flame stability and OH and CH radical emissions from mixtures of natural gas with biomass gasification gas. *Applied Thermal Engineering* [online]. 2013, 55(1–2), 133–139. Available at: doi:10.1016/j.applthermaleng.2013.03.015

[111] WILLIAMS, T., G. MCKAY and M. BROWN. *Assessment of the Impact of Gas Quality on the Peformance of Domestic Appliances (A Pilot Study)*. 2004.

[112] MARTINEZ, A. S., A. JANI and D. DABDUB. Emission factor estimation in regional air quality studies of residential natural gas fuel interchangeability. *Fuel* [online]. 2014, 119, 129–140. Available at: doi:10.1016/j.fuel.2013.11.018

[113] WOOD, D. and S. MOKHATAB. Natural gas interchangeability in focus as sources of LNG widen. *LNG Journal*. 2007, 14–18.

[114] QI, W., G. A. P. WENXUE, Z ZIJUN, L.U.O. QIN and Z. LI. Research progress on gas interchangeability in China. In: *International Gas Union World Gas Conference Papers - 25th World Gas Conference, Kuala Lumpur, Malaysia, 4-8 June*. 2012, p. 3595–3621.

[115] LEE, Ch.-E., Ch.-H. HWANG and S.-Ch. HONG. Proposal and validation of a new type of flame stability diagram for partially premixed flames. *Fuel* [online]. 2008, 87(17–18), 3687–3693. Available at: doi:10.1016/j.fuel.2008.07.005

[116] ZACHARIAH-WOLFF, J. L., T. M. M. EGYEDI and K. HEMMES. From natural gas to hydrogen via the Wobbe index: The role of standardized gateways in sustainable infrastructure transitions. *International Journal of Hydrogen Energy* [online]. 2007, 32(9), 1235–1245. Available at: doi:10.1016/j.ijhydene.2006.07.024

[117] JONES, H. R. N. *Domestic Gas Burner Design*. B.m.: Taylor & Francis e-Library, 2005. ISBN 0-

203-47313-2.

[118] DELBOURG, P. and J. LAFON. *Interchangeabilité des Gaz.* B.m.: AssociationTechnique de L'Industrie du Gaz en. Paris: Association technique de l'industrie du gaz en France, 1971.

[119] FÍK, J. *Combustion of Gaseous Fuels and Gas Burners.* 1st ed. B.m.: GAS Ltd., 1998.

[120] GILBERT, M.G and J.A. PRIGG. Prediction of the Combustion Characteristics of Town Gas. *Trans. Inst. Gas Eng.* 1956, 106.

[121] DUTTON, B. C. A new dimension to gas interchangeability. In: *50th Autumn Meeting, Congres Theatre, Eastbourne, United Kingdom, 13-14 November.* 1984.

[122] *Economic Regulation Authority, Western Australia. Gas Exchangeability in Western Australia – Gas quality specifications of interconnected pipeline.* 2007.

[123] FLÓREZ-ORREGO, D. A. *Métodos para el estudio de la intercambiabilidad de una mezcla de Gas Natural y Gas Natural-Syngas en quemadores de premezcla de regimen laminar: Un artículo de revisión.* 2009.

[124] LESSEN, P. F., G. M. S. LAMBERT and R. SOUTH. . *Inst. Gas Eng. Comm.* 1978.

[125] GS(M)R. *A guide to the Gas Safety (Management) Regulations.* 1st ed. 1996.

[126] STATISTA. *Consumption of natural and synthetic rubber worldwide from 1990 to 2020.* 2021.

[127] LAROCHE, P. C. S. J., C. J. E. SCHULP, T. KASTNER and P. H. VERBURG. Correction to: Assessing the contribution of mobility in the European Union to rubber expansion. *Ambio* [online]. 2022, 51(3), 770-783. Available at: doi:10.1007/s13280-021-01604-z

[128] SIDDIKA, A., M. A. A. MAMUN, R. ALYOUSEF, Y. H.M. AMRAN, F. ASLANI and H. ALABDULJABBAR. Properties and utilizations of waste tire rubber in concrete: A review. *Construction and Building Materials* [online]. 2019, 224, 711–731. Available at: doi:10.1016/j.conbuildmat.2019.07.108

[129] SOFI, A. Effect of waste tyre rubber on mechanical and durability properties of concrete – A review. *Ain Shams Engineering Journal* [online]. 2018, 9(4), 2691–2700. Available at: doi:10.1016/j.asej.2017.08.007

[130] SMITHERS. *Global tire manufacturing output to grow 3.4% year- on -year to 2024* [online]. no date. Available at: https://www.smithers.com/resources/2019/jun/global-tire-manufacturing-output-to-grow-by-2024

[131] BRIDGESTONE CORPORATION. *BRIDGESTONE DATA 2020.* 2021.

[132] FORTUNE BUSINESS INSIGHTS. *Report ID: FBI101612* [online]. no date. Available at: https://www.fortunebusinessinsights.com/industry-reports/rubber-market-101612

[133] *Industrial Rubber Market by Type and End-use Industry: Global Opportunity Analysis and Industry Forecast, 2019-2026 (ID: 4990110).* 2019.

[134] U.S. ENVIRONMENTAL PROTECTION AGENCY. *Tire-Derived Fuel* [online]. 2016. Available at: https://archive.epa.gov/epawaste/conserve/materials/tires/web/html/tdf.html

[135] PRZYDATEK, G., G. BUDZIK and M. JANIK. Effectiveness of selected issues related to used tyre management in Poland. *Environmental Science and Pollution Research* [online]. 2022. Available at: doi:10.1007/s11356-022-18494-7

[136] WEI, Q., Y. QU and T. TAN. Mass and heat balance calculations and economic evaluation of an innovative biomass pyrolysis project. *Frontiers of Chemical Engineering in China* [online]. 2011, 5(3), 355–361. Available at: doi:10.1007/s11705-010-0567-9

[137] WANG, L. and G. XIAO. Study on economic feasibility of straw pyrolysis. In: *ICMREE2011 - Proceedings 2011 International Conference on Materials for Renewable Energy and Environment* [online]. 2011, p. 308–312. ISBN 9781612847504. Available at: doi:10.1109/ICMREE.2011.5930819

[138] ZHAO, X., J. ZHANG, Z. SONG, H. LIU, L. LI and C. MA. Microwave pyrolysis of straw bale and energy balance analysis. *Journal of Analytical and Applied Pyrolysis* [online]. 2011, 92(1), 43–49. Available at: doi:10.1016/j.jaap.2011.04.004

[139] CONG, H., H. MENG, O. MAŠEK, Z. YAO, L. LI, B. YU, C. QIN and L. ZHAO. Comprehensive analysis of industrial-scale heating plants based on different biomass slow pyrolysis technologies: Product property, energy balance, and ecological impact. *Cleaner Engineering and Technology* [online]. 2022, 6. Available at: doi:10.1016/j.clet.2021.100391

[140] SAVU, A. R., I. MUNTEAN, G. LAZEA and P.-S. AGACHI. Economic optimization of a thermal cracker via model predictive control technology. In: *2011 19th Mediterranean Conference on Control and Automation, MED 2011* [online]. 2011, p. 819–824. ISBN 9781457701252. Available at: doi:10.1109/MED.2011.5983153

[141] DA SILVA, J. C. G., S .L. F. ANDERSEN, R.D.F.P.M. MOREIRA and H.J. JOSÉ. A comprehensive study on by-products of food processing industry pyrolysis using a thermobalance reactor coupled to GC-FID/TCD: Mass, atomic and energy balances, thermokinetic modeling, product distribution, and characterization. *Journal of Analytical and Applied Pyrolysis* [online]. 2021, 156. Available at: doi:10.1016/j.jaap.2021.105107

[142] HONUS, S., D. JUCHELKOVÁ, A. CAMPEN and T. WILTOWSKI. Gaseous Components from Pyrolysis - Characteristics, Production and Potential for Energy Utilization. *Journal of Analytical and Applied Pyrolysis* [online]. 2014, 106, 1–8. Available at: doi:10.1016/j.jaap.2013.11.023 (IF 3,912, vždy Q1)

[143] *ČSN 38 5502: Plynná paliva. Základní rozdělení (Gaseous fuels. Basic classification)*. 1981.

[144] *ČSN EN 15400 (838304) Tuhá alternativní paliva - Stanovení spalného tepla a výhřevnosti*. 2011.

[145] KADLEC, Z. and V. BLAHOŽ. *Základy sdílení tepla*. 2000. ISBN 80-902001-1-7.

[146] HELLEUR, R., N. POPOVIC, M. IKURA, M. STANCIULESCU and D. LIU. Characterization and potential applications of pyrolytic char from ablative pyrolysis of used tires. *Journal of Analytical and Applied Pyrolysis* [online]. 2001, 58–59, 813–824. Available at: doi:10.1016/S0165-2370(00)00207-2

[147] HONUS, S., V. SASSMANOVÁ, J. FRANTÍK, P. BUKOWSKI and D. JUCHELKOVÁ. Balance Sheet of Semioperational Thermic System. *Chemical and Process Engineering* [online]. 2014, 35(3), 317–329. Available at: doi:10.2478/cpe-2014-0024

[148] HONUS, S.. *Matematické modelování fyzikálních a chemických jevů s využitím metod CFD a DEM*. 1st ed. Ostrava: Kleinwächter. Vysoká škola báňská – Technická univerzita Ostrava, 132 s., 2014. ISBN 978-80-248-3433-7.

[149] ANDERSON, J. D., J. DEGROOTE, G. DEGREZ, Erik DICK, Roger GRUNDMANN and Jan VIERENDEELS. *Computational Fluid Dynamics: An Introduction*. 2009. ISBN 78-3-540-85055-7.

[150] QIAN, Y., J. ZHAN, Y. YU, G. XU and X. LIU. CFD model of coal pyrolysis in fixed bed reactor. *Chemical Engineering Science* [online]. 2019, 200, 1–11. Available at: doi:10.1016/j.ces.2018.12.064

[151] KHODAEI, H., L. GONZALEZ, S. CHAPELA, J. PORTEIRO, P. NIKRITYUK and C. OLSON. CFD-based coupled multiphase modeling of biochar production using a large-scale pyrolysis plant. *Energy* [online]. 2021, 217. Available at: doi:10.1016/j.energy.2020.119325

[152] JALALIFAR, S., R. ABBASSI, V. GARANIYA, F. SALEHI, S. PAPARI, K. HAWBOLDT and V. STREZOV. CFD analysis of fast pyrolysis process in a pilot-scale auger reactor. *Fuel* [online]. 2020, 273. Available at: doi:10.1016/j.fuel.2020.117782

[153] CHEN, T., T. LI, J. SJÖBLOM and H. STRÖM. A reactor-scale CFD model of soot formation during high-temperature pyrolysis and gasification of biomass. *Fuel* [online]. 2021, 303. Available at: doi:10.1016/j.fuel.2021.121240

[154] ADKINS, B. D., N. KAPUR, T. DUDLEY, S. WEBB and P. BLASER. Experimental validation of CFD hydrodynamic models for catalytic fast pyrolysis. *Powder Technology* [online]. 2017, 316, 725–739. Available at: doi:10.1016/j.powtec.2016.11.060

[155] ZANOUN, E.-S. and F. DURST. Turbulent momentum transport and kinetic energy production in plane-channel flows. *International Journal of Heat and Mass Transfer* [online]. 2009, 52(17–18), 4117–4124. Available at: doi:10.1016/j.ijheatmasstransfer.2009.03.046

[156] PŘÍHODA, J. and P. LOUDA. *Matematické modelování turbulentního proudění*. B.m.: České vysoké učení technické v Praze, 2009. ISBN 978-80-01-03623-5.

[157] WILCOX, D. C. Reassessment of the scale-determining equation for advanced turbulence models. *AIAA Journal* [online]. 1988, 26(11), 1299–1310. Available at: doi:10.2514/3.10041

[158] SHARIF, M. A. R. and G. GUO. Computational analysis of supersonic turbulent boundary layers over rough surfaces using the k-ω and the stress-ω models. *Applied Mathematical Modelling* [online]. 2007, 31(12), 2655–2667. Available at: doi:10.1016/j.apm.2006.10.007

[159] JELEMENSKÝ, K., J. ŠESTÁK and R. ŽITNÝ. *Tepelné pochody*. B.m.: STU Bratislava, 2000. ISBN 80-227-2109-3.

[160] LAIDLER, K. J. *Chemical Kinetics*. 3rd ed. B.m.: Pearson, 1987.

[161] ŠESTKÁK, J. and R. ŽITNÝ. *Tepelné pochody II*. B.m.: České vysoké učení technické v Praze, 2006. ISBN 80-01-03475-5.

[162] MAGNUSSEN, B.F. The Eddy Dissipation Concept for Turbulent Combustion Modelling. Its Physical and Practical Implications. In: *Presented at the First Topic Oriented Technical Meeting*. B.m.: International Flame Research Foundation, 1989.

[163] *ANSYS CFX-Solver Theory Guide*. B.m.: ANSYS, Inc., 2009.

[164] KAVIANY, M. *Heat Transfer Physics*. 1st ed. B.m.: Cambridge University Press, 2008. ISBN 978-0-511-43694-9.

[165] MODEST, M. *Radiative Heat Transfer*. 2nd ed. B.m.: Academic Press, 2003. ISBN 978-0125031639.

[166] HOTTEL, H.C. *Radiant heat transmission*. 3rd ed. B.m.: New York : McGraw-Hill, 1954.

[167] BEÉR, J. M., P. J. FOSTER and R. G. SIDDALL. *HTFS design report : calculation methods of radiative heat transfer : a report*. B.m.: Harwell : HTFS, 1971.

[168] HONUS, S. and D. JUCHELKOVÁ. Mathematical models of combustion, convection and heat transfer in experimental thermic device and verification. *Technical Gazette* [online]. 2014, 21(1), 115–122. Available at: www.scopus.com/inward/record.url?eid=2-s2.0-84894424471&partnerID=tZOtx3y1