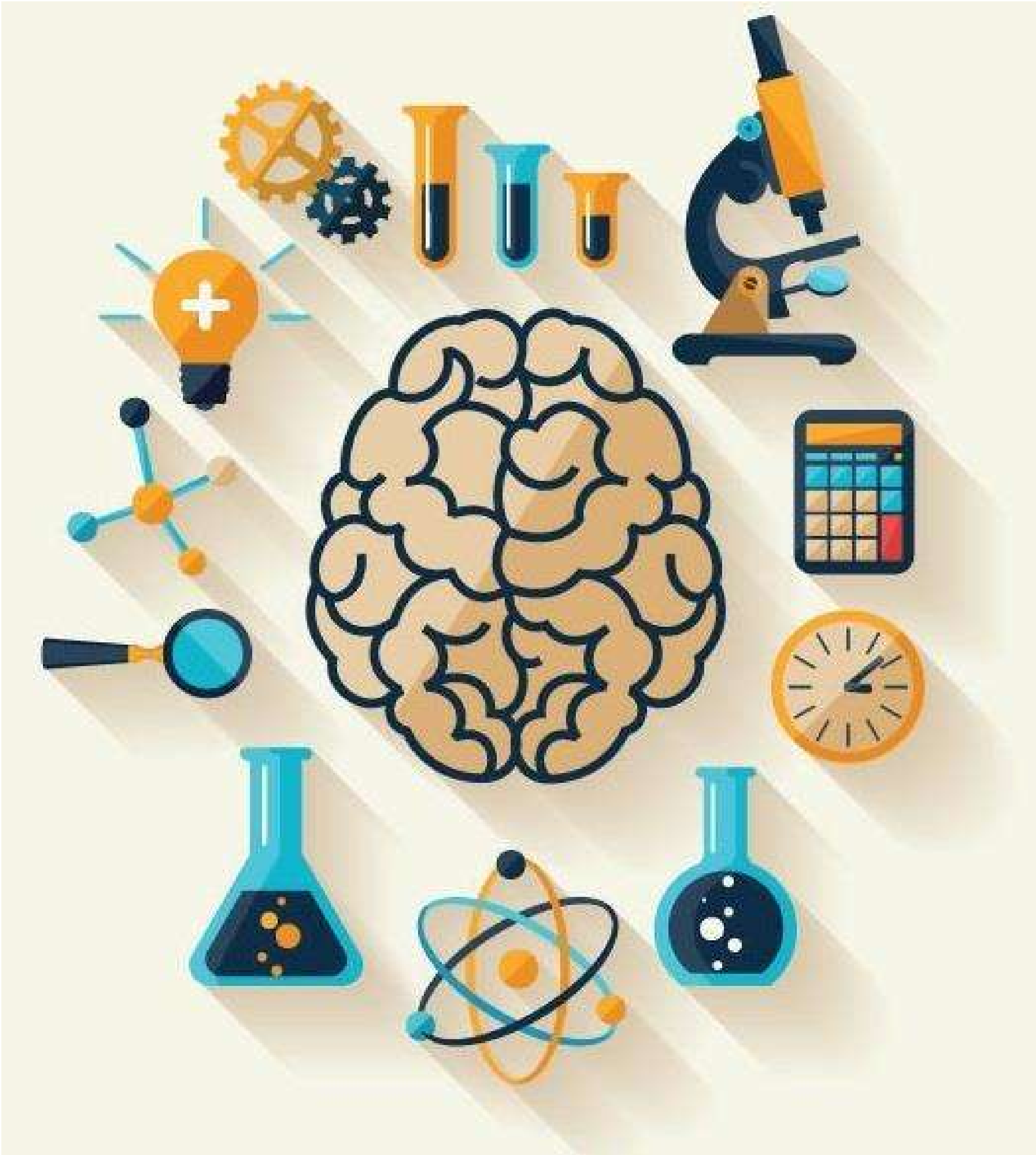
References



[1] R. Lee, The outlook for population growth, Science, 333 (2011) 569-573.
[2] Z. Chen, G. Chen, An overview of energy consumption of the globalized world economy, Energy Policy, 39 (2011) 5920-5928.
[3] H.B. Goyal, D. Seal, R.C. Saxena, Bio-fuels from thermochemical conversion of renewable resources: A review, Renewable and Sustainable Energy Reviews, 12 (2008) 504-517.
[4] N.S. Lewis, D.G. Nocera, Powering the planet: Chemical challenges in solar energy utilization, Proceedings of the National Academy of Sciences, 103 (2006) 15729-15735.
[5] M. Islam, M. Hasanuzzaman, N. Rahim, A. Nahar, M. Hosenuzzaman, Global renewable energy-based electricity generation and smart grid system for energy security, The Scientific World Journal, 2014 (2014).
[6] I. Yüksel, Global warming and renewable energy sources for sustainable development in Turkey, Renewable energy, 33 (2008) 802-812.
[7] P. Halder, N. Paul, M.U. Joardder, M. Sarker, Energy scarcity and potential of renewable energy in Bangladesh, Renewable and Sustainable Energy Reviews, 51 (2015) 1636-1649.
[8] M. Wang, F. Zhang, S. Wang, Effect of La2O3 replacement on γ-Al2O3 supported nickel catalysts for acetic acid steam reforming, International Journal of Hydrogen Energy, 42 (2017) 20540-20548.
[9] T.N. Veziroğlu, Hydrogen technology for energy needs of human settlements, International Journal of Hydrogen Energy, 12 (1987) 99-129.
[10] M. Granovskii, I. Dincer, M.A. Rosen, Exergetic life cycle assessment of hydrogen production from renewables, Journal of Power Sources, 167 (2007) 461-471.
[11] A. Ozbilen, I. Dincer, M.A. Rosen, Exergetic life cycle assessment of a hydrogen production process, International Journal of Hydrogen Energy, 37 (2012) 5665-5675.
[12] A. Kumar, A.S.K. Sinha, Hydrogen production from acetic acid steam reforming over nickel-based catalyst synthesized via MOF process, International Journal of Hydrogen Energy, 45 (2020) 24397-24411.
[13] W. Nabgan, T.A. Tuan Abdullah, R. Mat, B. Nabgan, Y. Gambo, M. Ibrahim, A. Ahmad, A.A. Jalil, S. Triwahyono, I. Saeh, Renewable hydrogen production from bio-oil derivative via catalytic steam reforming: An overview, Renewable and Sustainable Energy Reviews, 79 (2017) 347-357.
[14] W. Nabgan, T.A. Tuan Abdullah, R. Mat, B. Nabgan, Y. Gambo, K. Moghadamian, Acetic acid-phenol steam reforming for hydrogen production: Effect of different composition of La2O3-Al2O3 support for bimetallic Ni-Co catalyst, Journal of Environmental Chemical Engineering, 4 (2016) 2765-2773.
[15] P. Mohanty, M. Patel, K.K. Pant, Hydrogen production from steam reforming of acetic acid over Cu–Zn supported calcium aluminate, Bioresource technology, 123 (2012) 558-565.
[16] S. Goicoechea, H. Ehrich, P.L. Arias, N. Kockmann, Thermodynamic analysis of acetic acid steam reforming for hydrogen production, Journal of Power Sources, 279 (2015) 312-322.
[17] K. Takanabe, K.-i. Aika, K. Seshan, L. Lefferts, Sustainable hydrogen from bio-oil—Steam reforming of acetic acid as a model oxygenate, Journal of Catalysis, 227 (2004) 101-108.
[18] M.A. Pen˜a, J.P. Gómez, J.L.G. Fierro, New catalytic routes for syngas and hydrogen production, Applied Catalysis A: General, 144 (1996) 7-57.
[19] Y.-p. Xue, C.-f. Yan, X.-y. Zhao, S.-l. Huang, C.-q. Guo, Ni/La2O3-ZrO2 catalyst for hydrogen production from steam reforming of acetic acid as a model compound of bio-oil, Korean Journal of Chemical Engineering, 34 (2017) 305-313.
[20] A.C. Basagiannis, X.E. Verykios, Catalytic steam reforming of acetic acid for hydrogen production, International Journal of Hydrogen Energy, 32 (2007) 3343-3355.
[21] P. Mohanty, K.K. Pant, R. Mittal, Hydrogen generation from biomass materials: challenges and opportunities, Wiley Interdisciplinary Reviews: Energy and Environment, 4 (2015) 139-155.
[22] S. Wang, Q. Cai, F. Zhang, X. Li, L. Zhang, Z. Luo, Hydrogen production via catalytic reforming of the bio-oil model compounds: Acetic acid, phenol and hydroxyacetone, International Journal of Hydrogen Energy, 39 (2014) 18675-18687.

[23] A. Kumar, J.P. Chakraborty, R. Singh, Bio-oil: the future of hydrogen generation, Biofuels, 8 (2017) 663-674.
[24] P. Fu, A. Zhang, S. Luo, W. Yi, S. Hu, Y. Zhang, Catalytic Steam Reforming of Biomass-Derived Acetic Acid over Two Supported Ni Catalysts for Hydrogen-Rich Syngas Production, ACS Omega, 4 (2019) 13585-13593.
[25] G.K. Gupta, P.K. Gupta, M.K. Mondal, Experimental process parameters optimization and in-depth product characterizations for teak sawdust pyrolysis, Waste Management, 87 (2019) 499-511.
[26] C. Italiano, K. Bizkarra, V. Barrio, J. Cambra, L. Pino, A. Vita, Renewable hydrogen production via steam reforming of simulated bio-oil over Ni-based catalysts, International Journal of Hydrogen Energy, 44 (2019) 14671-14682.
[27] G. Chen, J. Tao, C. Liu, B. Yan, W. Li, X. Li, Hydrogen production via acetic acid steam reforming: A critical review on catalysts, Renewable and Sustainable Energy Reviews, 79 (2017) 1091-1098.
[28] X. Hu, D. Dong, X. Shao, L. Zhang, G. Lu, Steam reforming of acetic acid over cobalt catalysts: Effects of Zr, Mg and K addition, International Journal of Hydrogen Energy, 42 (2017) 4793-4803.
[29] S. Wang, X. Li, F. Zhang, Q. Cai, Y. Wang, Z. Luo, Bio-oil catalytic reforming without steam addition: application to hydrogen production and studies on its mechanism, International journal of hydrogen energy, 38 (2013) 16038-16047.
[30] M. Bertero, G. de la Puente, U. Sedran, Fuels from bio-oils: Bio-oil production from different residual sources, characterization and thermal conditioning, Fuel, 95 (2012) 263-271.
[31] J. Vicente, C. Montero, J. Ereña, M.J. Azkoiti, J. Bilbao, A.G. Gayubo, Coke deactivation of Ni and Co catalysts in ethanol steam reforming at mild temperatures in a fluidized bed reactor, International journal of hydrogen energy, 39 (2014) 12586-12596.
[32] X. Hu, G. Lu, Acetic acid steam reforming to hydrogen over Co–Ce/Al2O3 and Co–La/Al2O3 catalysts—the promotion effect of Ce and La addition, Catalysis Communications, 12 (2010) 50-53.
[33] A. Kumar, R. Singh, A.S.K. Sinha, Catalyst modification strategies to enhance the catalyst activity and stability during steam reforming of acetic acid for hydrogen production, International Journal of Hydrogen Energy, 44 (2019) 12983-13010.
[34] M. Sankar, N. Dimitratos, P.J. Miedziak, P.P. Wells, C.J. Kiely, G.J. Hutchings, Designing bimetallic catalysts for a green and sustainable future, Chemical Society Reviews, 41 (2012) 8099-8139.
[35] Y. Feng, H. Jiang, M. Chen, Y. Wang, Construction of an interpenetrated MOF-5 with high mesoporosity for hydrogen storage at low pressure, Powder Technology, 249 (2013) 38-42.
[36] D. Zanchet, J.B.O. Santos, S. Damyanova, J.M.R. Gallo, J.M.C. Bueno, Toward understanding metal-catalyzed ethanol reforming, ACS Catalysis, 5 (2015) 3841-3863.
[37] S. Wang, F. Zhang, Q. Cai, L. Zhu, Z. Luo, Steam reforming of acetic acid over coal ash supported Fe and Ni catalysts, International Journal of Hydrogen Energy, 40 (2015) 11406-11413.
[38] X. Li, S. Wang, Q. Cai, L. Zhu, Q. Yin, Z. Luo, Effects of Preparation Method on the Performance of Ni/Al2O3 Catalysts for Hydrogen Production by Bio-Oil Steam Reforming, Applied Biochemistry and Biotechnology, 168 (2012) 10-20.
[39] S.Q. Chen, H. Wang, Y. Liu, Perovskite La–St–Fe–O (St=Ca, Sr) supported nickel catalysts for steam reforming of ethanol: The effect of the A site substitution, International Journal of Hydrogen Energy, 34 (2009) 7995-8005.
[40] I.-H. Choi, K.-R. Hwang, K.-Y. Lee, I.-G. Lee, Catalytic steam reforming of biomass-derived acetic acid over modified Ni/γ-Al2O3 for sustainable hydrogen production, International Journal of Hydrogen Energy, 44 (2019) 180-190.
[41] J. Pu, F. Ikegami, K. Nishikado, E.W. Qian, Effect of ceria addition on Ni[sbnd]Ru/CeO2[sbnd]Al2O3 catalysts in steam reforming of acetic acid, International Journal of Hydrogen Energy, 42 (2017) 19733-19743.

[42] H.-J. Lee, G.S. Shin, Y.-C. Kim, Characterization of supported Ni catalysts for aqueous-phase reforming of glycerol, Korean Journal of Chemical Engineering, 32 (2015) 1267-1272.
[43] M.A. Khan, S.I. Woo, La-promoted Ni/γ-Al 2 O 3 catalyst for autothermal reforming of methane, Korean Journal of Chemical Engineering, 31 (2014) 1204-1210.
[44] H. Feng, P. Lan, S. Wu, A study on the stability of a NiO–CaO/Al2O3 complex catalyst by La2O3 modification for hydrogen production, International journal of hydrogen energy, 37 (2012) 14161-14166.
[45] T. de Freitas Silva, C.G.M. Reis, A.F. Lucrédio, E.M. Assaf, J.M. Assaf, Hydrogen production from oxidative reforming of methane on Ni/γ-Al2O3 catalysts: Effect of support promotion with La, La–Ce and La–Zr, Fuel Processing Technology, 127 (2014) 97-104.
[46] J.M. Thomas, W.J. Thomas, Principles and practice of heterogeneous catalysis, John Wiley & Sons2014.
[47] A.T. Bell, The impact of nanoscience on heterogeneous catalysis, Science, 299 (2003) 1688-1691.
[48] R.T. Kumar, N.C.S. Selvam, C. Ragupathi, L.J. Kennedy, J.J. Vijaya, Synthesis, characterization and performance of porous Sr (II)-added ZnAl2O4 nanomaterials for optical and catalytic applications, Powder technology, 224 (2012) 147-154.
[49] H.-L. Jiang, Q. Xu, Porous metal–organic frameworks as platforms for functional applications, Chemical Communications, 47 (2011) 3351-3370.
[50] A. Corma, H. García, F. Llabrés i Xamena, Engineering metal organic frameworks for heterogeneous catalysis, Chemical reviews, 110 (2010) 4606-4655.
[51] M. Yoon, R. Srirambalaji, K. Kim, Homochiral metal–organic frameworks for asymmetric heterogeneous catalysis, Chemical reviews, 112 (2011) 1196-1231.
[52] J.A. Turner, Sustainable Hydrogen Production, Science, 305 (2004) 972-974.
[53] T.N. Veziroğlu, S. Şahi˙n, 21st Century's energy: Hydrogen energy system, Energy Conversion and Management, 49 (2008) 1820-1831.
[54] M. Balat, Potential importance of hydrogen as a future solution to environmental and transportation problems, International Journal of Hydrogen Energy, 33 (2008) 4013-4029.
[55] P. Parthasarathy, K.S. Narayanan, Hydrogen production from steam gasification of biomass: Influence of process parameters on hydrogen yield – A review, Renewable Energy, 66 (2014) 570-579.
[56] H. Balat, E. Kırtay, Hydrogen from biomass – Present scenario and future prospects, International Journal of Hydrogen Energy, 35 (2010) 7416-7426.
[57] R.S. Cherry, A hydrogen utopia?, International Journal of Hydrogen Energy, 29 (2004) 125-129.
[58] B.D. Shakya, L. Aye, P. Musgrave, Technical feasibility and financial analysis of hybrid wind–photovoltaic system with hydrogen storage for Cooma, International Journal of Hydrogen Energy, 30 (2005) 9-20.
[59] D. Das, T.N. Veziroğlu, Hydrogen production by biological processes: a survey of literature, International Journal of Hydrogen Energy, 26 (2001) 13-28.
[60] G.W. Huber, J.W. Shabaker, J.A. Dumesic, Raney Ni-Sn Catalyst for H₂ Production from Biomass-Derived Hydrocarbons, Science, 300 (2003) 2075-2077.
[61] Y. Matsumura, T. Minowa, B. Potic, S.R.A. Kersten, W. Prins, W.P.M. van Swaaij, B. van de Beld, D.C. Elliott, G.G. Neuenschwander, A. Kruse, M. Jerry Antal Jr, Biomass gasification in near- and super-critical water: Status and prospects, Biomass and Bioenergy, 29 (2005) 269-292.
[62] S. Czernik, R. French, C. Feik, E. Chornet, Hydrogen by catalytic steam reforming of liquid byproducts from biomass thermoconversion processes, Industrial & Engineering Chemistry Research, 41 (2002) 4209-4215.
[63] R.M. Navarro, M.C. Sánchez-Sánchez, M.C. Alvarez-Galvan, F.d. Valle, J.L.G. Fierro, Hydrogen production from renewable sources: biomass and photocatalytic opportunities, Energy & Environmental Science, 2 (2009) 35-54.

[64] Q. Sohaib, A. Muhammad, M. Younas, Fast pyrolysis of sugarcane bagasse: Effect of pyrolysis conditions on final product distribution and properties, Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 39 (2017) 184-190.
[65] G.W. Huber, S. Iborra, A. Corma, Synthesis of Transportation Fuels from Biomass: Chemistry, Catalysts, and Engineering, Chemical Reviews, 106 (2006) 4044-4098.
[66] J.D. Holladay, J. Hu, D.L. King, Y. Wang, An overview of hydrogen production technologies, Catalysis Today, 139 (2009) 244-260.
[67] D. Shen, W. Jin, J. Hu, R. Xiao, K. Luo, An overview on fast pyrolysis of the main constituents in lignocellulosic biomass to valued-added chemicals: Structures, pathways and interactions, Renewable and Sustainable Energy Reviews, 51 (2015) 761-774.
[68] X. Zhuang, W. Wang, Q. Yu, W. Qi, Q. Wang, X. Tan, G. Zhou, Z. Yuan, Liquid hot water pretreatment of lignocellulosic biomass for bioethanol production accompanying with high valuable products, Bioresource Technology, 199 (2016) 68-75.
[69] D.E. Resasco, S.P. Crossley, Implementation of concepts derived from model compound studies in the separation and conversion of bio-oil to fuel, Catalysis Today, 257 (2015) 185-199.
[70] S. Ayalur Chattanathan, S. Adhikari, N. Abdoulmoumine, A review on current status of hydrogen production from bio-oil, Renewable and Sustainable Energy Reviews, 16 (2012) 2366-2372.
[71] K.A. Resende, C.N. Ávila-Neto, R.C. Rabelo-Neto, F.B. Noronha, C.E. Hori, Hydrogen production by reforming of acetic acid using La–Ni type perovskites partially substituted with Sm and Pr, Catalysis Today, 242 (2015) 71-79.
[72] E.C. Vagia, A.A. Lemonidou, Thermodynamic analysis of hydrogen production via steam reforming of selected components of aqueous bio-oil fraction, International Journal of Hydrogen Energy, 32 (2007) 212-223.
[73] T. Davidian, N. Guilhaume, E. Iojoiu, H. Provendier, C. Mirodatos, Hydrogen production from crude pyrolysis oil by a sequential catalytic process, Applied Catalysis B: Environmental, 73 (2007) 116-127.
[74] D. Mohan, C.U. Pittman, P.H. Steele, Pyrolysis of Wood/Biomass for Bio-oil: A Critical Review, Energy & Fuels, 20 (2006) 848-889.
[75] A. Oasmaa, S. Czernik, Fuel Oil Quality of Biomass Pyrolysis OilsState of the Art for the End Users, Energy & Fuels, 13 (1999) 914-921.
[76] Y. Zhang, D.R. Mullins, A. Savara, Effect of Sr Substitution in LaMnO3(100) on Catalytic Conversion of Acetic Acid to Ketene and Combustion-Like Products, The Journal of Physical Chemistry C, 123 (2019) 4148-4157.
[77] O.A. Omoniyi, V. Dupont, Optimised cycling stability of sorption enhanced chemical looping steam reforming of acetic acid in a packed bed reactor, Applied Catalysis B: Environmental, 242 (2019) 397-409.
[78] B. Jiang, L. Li, Z. Bian, Z. Li, M. Othman, Z. Sun, D. Tang, S. Kawi, B. Dou, Hydrogen generation from chemical looping reforming of glycerol by Ce-doped nickel phyllosilicate nanotube oxygen carriers, Fuel, 222 (2018) 185-192.
[79] Z.X. Wang, T. Dong, L.X. Yuan, T. Kan, X.F. Zhu, Y. Torimoto, M. Sadakata, Q.X. Li, Characteristics of Bio-Oil-Syngas and Its Utilization in Fischer−Tropsch Synthesis, Energy & Fuels, 21 (2007) 2421-2432.
[80] T. Kan, J. Xiong, X. Li, T. Ye, L. Yuan, Y. Torimoto, M. Yamamoto, Q. Li, High efficient production of hydrogen from crude bio-oil via an integrative process between gasification and current-enhanced catalytic steam reforming, International Journal of Hydrogen Energy, 35 (2010) 518-532.
[81] P.N. Kechagiopoulos, S.S. Voutetakis, A.A. Lemonidou, I.A. Vasalos, Hydrogen production via steam reforming of the aqueous phase of bio-oil in a fixed bed reactor, Energy & Fuels, 20 (2006) 2155-2163.

[82] F. Bimbela, M. Oliva, J. Ruiz, L. García, J. Arauzo, Hydrogen production via catalytic steam reforming of the aqueous fraction of bio-oil using nickel-based coprecipitated catalysts, International Journal of Hydrogen Energy, 38 (2013) 14476-14487.
[83] C. Rioche, S. Kulkarni, F.C. Meunier, J.P. Breen, R. Burch, Steam reforming of model compounds and fast pyrolysis bio-oil on supported noble metal catalysts, Applied Catalysis B: Environmental, 61 (2005) 130-139.
[84] A.N. Fatsikostas, D.I. Kondarides, X.E. Verykios, Production of hydrogen for fuel cells by reformation of biomass-derived ethanol, Catalysis Today, 75 (2002) 145-155.
[85] P.N. Kechagiopoulos, S.S. Voutetakis, A.A. Lemonidou, I.A. Vasalos, Sustainable hydrogen production via reforming of ethylene glycol using a novel spouted bed reactor, Catalysis Today, 127 (2007) 246-255.
[86] M. Marquevich, S. Czernik, E. Chornet, D. Montané, Hydrogen from Biomass: Steam Reforming of Model Compounds of Fast-Pyrolysis Oil, Energy & Fuels, 13 (1999) 1160-1166.
[87] A. Demirbas, Competitive liquid biofuels from biomass, Applied Energy, 88 (2011) 17-28.
[88] A. Oasmaa, D. Meier, Norms and standards for fast pyrolysis liquids: 1. Round robin test, Journal of Analytical and Applied Pyrolysis, 73 (2005) 323-334.
[89] M. Garcìa-Pèrez, A. Chaala, C. Roy, Vacuum pyrolysis of sugarcane bagasse, Journal of Analytical and Applied Pyrolysis, 65 (2002) 111-136.
[90] J.P. Diebold, S. Czernik, Additives To Lower and Stabilize the Viscosity of Pyrolysis Oils during Storage, Energy & Fuels, 11 (1997) 1081-1091.
[91] R.M. Navarro, M.A. Peña, J.L.G. Fierro, Hydrogen Production Reactions from Carbon Feedstocks: Fossil Fuels and Biomass, Chemical Reviews, 107 (2007) 3952-3991.
[92] C. Zhang, X. Hu, Z. Yu, Z. Zhang, G. Chen, C. Li, Q. Liu, J. Xiang, Y. Wang, S. Hu, Steam reforming of acetic acid for hydrogen production over attapulgite and alumina supported Ni catalysts: Impacts of properties of supports on catalytic behaviors, International Journal of Hydrogen Energy, 44 (2019) 5230-5244.
[93] R.B. Junior, R. Rabelo-Neto, R.S. Gomes, F. Noronha, R. Fréty, S.T. Brandão, Steam reforming of acetic acid over Ni-based catalysts derived from La1− xCaxNiO3 perovskite type oxides, Fuel, 254 (2019) 115714.
[94] F. Rahman, K.F. Loughlin, M.A. Al-Saleh, M.R. Saeed, N.M. Tukur, M.M. Hossain, K. Karim, A. Mamedov, Kinetics and mechanism of partial oxidation of ethane to ethylene and acetic acid over MoV type catalysts, Applied Catalysis A: General, 375 (2010) 17-25.
[95] M.-S. Feng, J.-D. Liu, F.-B. Zhang, L.-H. Huang, Ni-based olivine-type catalysts and their application in hydrogen production via auto-thermal reforming of acetic acid, Chemical Papers, 69 (2015) 1166-1175.
[96] S. Goicoechea, E. Kraleva, S. Sokolov, M. Schneider, M.-M. Pohl, N. Kockmann, H. Ehrich, Support effect on structure and performance of Co and Ni catalysts for steam reforming of acetic acid, Applied Catalysis A: General, 514 (2016) 182-191.
[97] S. Adhikari, S.D. Fernando, A. Haryanto, Hydrogen production from glycerol: An update, Energy Conversion and Management, 50 (2009) 2600-2604.
[98] L.a. Garcia, R. French, S. Czernik, E. Chornet, Catalytic steam reforming of bio-oils for the production of hydrogen: effects of catalyst composition, Applied Catalysis A: General, 201 (2000) 225-239.
[99] D.L. Trimm, Coke formation and minimisation during steam reforming reactions, Catalysis Today, 37 (1997) 233-238.
[100] J.R. Rostrup-Nielsen, Catalytic Steam Reforming, in: J.R. Anderson, M. Boudart (Eds.) Catalysis: Science and Technology Volume 5, Springer Berlin Heidelberg, Berlin, Heidelberg, 1984, pp. 1-117.
[101] S. Czernik, R. Evans, R. French, Hydrogen from biomass-production by steam reforming of biomass pyrolysis oil, Catalysis Today, 129 (2007) 265-268.

[102] X. Hu, G. Lu, Bio-oil steam reforming, partial oxidation or oxidative steam reforming coupled with bio-oil dry reforming to eliminate CO2 emission, International Journal of Hydrogen Energy, 35 (2010) 7169-7176.
[103] P. Lan, Q. Xu, M. Zhou, L. Lan, S. Zhang, Y. Yan, Catalytic Steam Reforming of Fast Pyrolysis Bio-Oil in Fixed Bed and Fluidized Bed Reactors, Chemical Engineering & Technology, 33 (2010) 2021-2028.
[104] S. Isarapakdeetham, P. Kim-Lohsoontorn, S. Wongsakulphasatch, W. Kiatkittipong, N. Laosiripojana, J. Gong, S. Assabumrungrat, Hydrogen production via chemical looping steam reforming of ethanol by Ni-based oxygen carriers supported on CeO2 and La2O3 promoted Al2O3, International Journal of Hydrogen Energy, 45 (2020) 1477-1491.
[105] I. García-García, E. Acha, K. Bizkarra, J. Martínez de Ilarduya, J. Requies, J.F. Cambra, Hydrogen production by steam reforming of m-cresol, a bio-oil model compound, using catalysts supported on conventional and unconventional supports, International Journal of Hydrogen Energy, 40 (2015) 14445-14455.
[106] A.C. Basagiannis, X.E. Verykios, Steam reforming of the aqueous fraction of bio-oil over structured Ru/MgO/Al2O3 catalysts, Catalysis Today, 127 (2007) 256-264.
[107] J.R. Salge, G.A. Deluga, L.D. Schmidt, Catalytic partial oxidation of ethanol over noble metal catalysts, Journal of Catalysis, 235 (2005) 69-78.
[108] A. Pastore, E. Mastorakos, Syngas production from liquid fuels in a non-catalytic porous burner, Fuel, 90 (2011) 64-76.
[109] S.S. Bharadwaj, L.D. Schmidt, Catalytic partial oxidation of natural gas to syngas, Fuel Processing Technology, 42 (1995) 109-127.
[110] J.R. Marda, J. DiBenedetto, S. McKibben, R.J. Evans, S. Czernik, R.J. French, A.M. Dean, Non-catalytic partial oxidation of bio-oil to synthesis gas for distributed hydrogen production, International Journal of Hydrogen Energy, 34 (2009) 8519-8534.
[111] D.C. Rennard, P.J. Dauenhauer, S.A. Tupy, L.D. Schmidt, Autothermal Catalytic Partial Oxidation of Bio-Oil Functional Groups: Esters and Acids, Energy & Fuels, 22 (2008) 1318-1327.
[112] A. Gutierrez, R. Karinen, S. Airaksinen, R. Kaila, A.O.I. Krause, Autothermal reforming of ethanol on noble metal catalysts, International Journal of Hydrogen Energy, 36 (2011) 8967-8977.
[113] D.L. Hoang, S.H. Chan, Experimental investigation on the effect of natural gas composition on performance of autothermal reforming, International Journal of Hydrogen Energy, 32 (2007) 548-556.
[114] N.R. Peela, D. Kunzru, Oxidative steam reforming of ethanol over Rh based catalysts in a micro-channel reactor, International Journal of Hydrogen Energy, 36 (2011) 3384-3396.
[115] M. Harada, K. Takanabe, J. Kubota, K. Domen, T. Goto, K. Akiyama, Y. Inoue, Hydrogen production by autothermal reforming of kerosene over MgAlOx-supported Rh catalysts, Applied Catalysis A: General, 371 (2009) 173-178.
[116] X. Karatzas, J. Dawody, A. Grant, E.E. Svensson, L.J. Pettersson, Zone-coated Rh-based monolithic catalyst for autothermal reforming of diesel, Applied Catalysis B: Environmental, 101 (2011) 226-238.
[117] E.C. Vagia, A.A. Lemonidou, Thermodynamic analysis of hydrogen production via autothermal steam reforming of selected components of aqueous bio-oil fraction, International Journal of Hydrogen Energy, 33 (2008) 2489-2500.
[118] G. van Rossum, S.R.A. Kersten, W.P.M. van Swaaij, Catalytic and Noncatalytic Gasification of Pyrolysis Oil, Industrial & Engineering Chemistry Research, 46 (2007) 3959-3967.
[119] V. Klouz, V. Fierro, P. Denton, H. Katz, J.P. Lisse, S. Bouvot-Mauduit, C. Mirodatos, Ethanol reforming for hydrogen production in a hybrid electric vehicle: process optimisation, Journal of Power Sources, 105 (2002) 26-34.
[120] M. Ni, D.Y.C. Leung, M.K.H. Leung, A review on reforming bio-ethanol for hydrogen production, International Journal of Hydrogen Energy, 32 (2007) 3238-3247.

[121] R.R. Davda, J.W. Shabaker, G.W. Huber, R.D. Cortright, J.A. Dumesic, Aqueous-phase reforming of ethylene glycol on silica-supported metal catalysts, Applied Catalysis B: Environmental, 43 (2003) 13-26.
[122] J.W. Shabaker, R.R. Davda, G.W. Huber, R.D. Cortright, J.A. Dumesic, Aqueous-phase reforming of methanol and ethylene glycol over alumina-supported platinum catalysts, Journal of Catalysis, 215 (2003) 344-352.
[123] K. Lehnert, P. Claus, Influence of Pt particle size and support type on the aqueous-phase reforming of glycerol, Catalysis Communications, 9 (2008) 2543-2546.
[124] R.R. Davda, J.W. Shabaker, G.W. Huber, R.D. Cortright, J.A. Dumesic, A review of catalytic issues and process conditions for renewable hydrogen and alkanes by aqueous-phase reforming of oxygenated hydrocarbons over supported metal catalysts, Applied Catalysis B: Environmental, 56 (2005) 171-186.
[125] G.W. Huber, J.A. Dumesic, An overview of aqueous-phase catalytic processes for production of hydrogen and alkanes in a biorefinery, Catalysis Today, 111 (2006) 119-132.
[126] R. Trane, S. Dahl, M.S. Skjøth-Rasmussen, A.D. Jensen, Catalytic steam reforming of bio-oil, International Journal of Hydrogen Energy, 37 (2012) 6447-6472.
[127] F. Zhang, M. Wang, L. Zhu, S. Wang, J. Zhou, Z. Luo, A comparative research on the catalytic activity of La2O3 and γ-Al2O3 supported catalysts for acetic acid steam reforming, International Journal of Hydrogen Energy, 42 (2017) 3667-3675.
[128] A.C. Basagiannis, X.E. Verykios, Reforming reactions of acetic acid on nickel catalysts over a wide temperature range, Applied Catalysis A: General, 308 (2006) 182-193.
[129] A.C. Basagiannis, X.E. Verykios, Influence of the carrier on steam reforming of acetic acid over Ru-based catalysts, Applied Catalysis B: Environmental, 82 (2008) 77-88.
[130] N. Iwasa, T. Yamane, M. Takei, J.-i. Ozaki, M. Arai, Hydrogen production by steam reforming of acetic acid: comparison of conventional supported metal catalysts and metal-incorporated mesoporous smectite-like catalysts, International journal of hydrogen energy, 35 (2010) 110-117.
[131] P.G.M. Assaf, F.G.E. Nogueira, E.M. Assaf, Ni and Co catalysts supported on alumina applied to steam reforming of acetic acid: Representative compound for the aqueous phase of bio-oil derived from biomass, Catalysis Today, 213 (2013) 2-8.
[132] H. Xie, Q. Yu, X. Yao, W. Duan, Z. Zuo, Q. Qin, Hydrogen production via steam reforming of bio-oil model compounds over supported nickel catalysts, Journal of Energy Chemistry, 24 (2015) 299-308.
[133] X.-x. Zheng, C.-f. Yan, R.-r. Hu, J. Li, H. Hai, W.-m. Luo, C.-q. Guo, W.-b. Li, Z.-y. Zhou, Hydrogen from acetic acid as the model compound of biomass fast-pyralysis oil over Ni catalyst supported on ceria–zirconia, International Journal of Hydrogen Energy, 37 (2012) 12987-12993.
[134] L. Zhang, X. Hu, K. Hu, C. Hu, Z. Zhang, Q. Liu, S. Hu, J. Xiang, Y. Wang, S. Zhang, Progress in the reforming of bio-oil derived carboxylic acids for hydrogen generation, Journal of Power Sources, 403 (2018) 137-156.
[135] K.K. Pant, P. Mohanty, S. Agarwal, A.K. Dalai, Steam reforming of acetic acid for hydrogen production over bifunctional Ni–Co catalysts, Catalysis Today, 207 (2013) 36-43.
[136] K. Takanabe, K.-i. Aika, K. Seshan, L. Lefferts, Catalyst deactivation during steam reforming of acetic acid over Pt/ZrO2, Chemical Engineering Journal, 120 (2006) 133-137.
[137] K. Takanabe, K.-i. Aika, K. Inazu, T. Baba, K. Seshan, L. Lefferts, Steam reforming of acetic acid as a biomass derived oxygenate: Bifunctional pathway for hydrogen formation over Pt/ZrO2 catalysts, Journal of Catalysis, 243 (2006) 263-269.
[138] Q. Zhang, J. Chang, T. Wang, Y. Xu, Review of biomass pyrolysis oil properties and upgrading research, Energy Conversion and Management, 48 (2007) 87-92.
[139] H. de Lasa, E. Salaices, J. Mazumder, R. Lucky, Catalytic Steam Gasification of Biomass: Catalysts, Thermodynamics and Kinetics, Chemical Reviews, 111 (2011) 5404-5433.

[140] B. Matas Güell, I. Babich, K.P. Nichols, J.G.E. Gardeniers, L. Lefferts, K. Seshan, Design of a stable steam reforming catalyst—A promising route to sustainable hydrogen from biomass oxygenates, Applied Catalysis B: Environmental, 90 (2009) 38-44.
[141] I. Czekaj, F. Loviat, F. Raimondi, J. Wambach, S. Biollaz, A. Wokaun, Characterization of surface processes at the Ni-based catalyst during the methanation of biomass-derived synthesis gas: X-ray photoelectron spectroscopy (XPS), Applied Catalysis A: General, 329 (2007) 68-78.
[142] T. Hou, S. Zhang, Y. Chen, D. Wang, W. Cai, Hydrogen production from ethanol reforming: Catalysts and reaction mechanism, Renewable and Sustainable Energy Reviews, 44 (2015) 132-148.
[143] R. Trane-Restrup, A.D. Jensen, Steam reforming of cyclic model compounds of bio-oil over Ni-based catalysts: Product distribution and carbon formation, Applied Catalysis B: Environmental, 165 (2015) 117-127.
[144] T.M.C. Hoang, B. Geerdink, J.M. Sturm, L. Lefferts, K. Seshan, Steam reforming of acetic acid–A major component in the volatiles formed during gasification of humin, Applied catalysis B: environmental, 163 (2015) 74-82.
[145] X. Li, S. Wang, Y. Zhu, G. Yang, P. Zheng, DFT study of bio-oil decomposition mechanism on a Co stepped surface: acetic acid as a model compound, International Journal of Hydrogen Energy, 40 (2015) 330-339.
[146] S. Wang, X. Li, L. Guo, Z. Luo, Experimental research on acetic acid steam reforming over Co–Fe catalysts and subsequent density functional theory studies, International journal of hydrogen energy, 37 (2012) 11122-11131.
[147] Y.-X. Ran, Z.-Y. Du, Y.-P. Guo, J. Feng, W.-Y. Li, Density functional theory study of acetic acid steam reforming on Ni (111), Applied Surface Science, 400 (2017) 97-109.
[148] Z. Li, X. Hu, L. Zhang, G. Lu, Renewable hydrogen production by a mild-temperature steam reforming of the model compound acetic acid derived from bio-oil, Journal of molecular catalysis A: chemical, 355 (2012) 123-133.
[149] N. Parizotto, K. Rocha, S. Damyanova, F. Passos, D. Zanchet, C. Marques, J. Bueno, Alumina-supported Ni catalysts modified with silver for the steam reforming of methane: effect of Ag on the control of coke formation, Applied Catalysis A: General, 330 (2007) 12-22.
[150] K.Y. Koo, S.-h. Lee, U.H. Jung, H.-S. Roh, W.L. Yoon, Syngas production via combined steam and carbon dioxide reforming of methane over Ni–Ce/MgAl2O4 catalysts with enhanced coke resistance, Fuel processing technology, 119 (2014) 151-157.
[151] F. Alenazey, C. Cooper, C. Dave, S. Elnashaie, A. Susu, A. Adesina, Coke removal from deactivated Co–Ni steam reforming catalyst using different gasifying agents: An analysis of the gas–solid reaction kinetics, Catalysis Communications, 10 (2009) 406-411.
[152] N. Latorre, E. Romeo, F. Cazana, T. Ubieto, C. Royo, J. Villacampa, A. Monzon, Carbon nanotube growth by catalytic chemical vapor deposition: a phenomenological kinetic model, The Journal of Physical Chemistry C, 114 (2010) 4773-4782.
[153] N. Latorre, E. Romeo, J. Villacampa, F. Cazaña, C. Royo, A. Monzón, Kinetics of carbon nanotubes growth on a Ni–Mg–Al catalyst by CCVD of methane: influence of catalyst deactivation, Catalysis Today, 154 (2010) 217-223.
[154] N. Latorre, F. Cazaña, V. Martínez-Hansen, C. Royo, E. Romeo, A. Monzón, Ni-Co-Mg-Al catalysts for hydrogen and carbonaceous nanomaterials production by CCVD of methane, Catalysis today, 172 (2011) 143-151.
[155] G. Chen, J. Tao, C. Liu, B. Yan, W. Li, X. Li, Steam reforming of acetic acid using Ni/Al2O3 catalyst: Influence of crystalline phase of Al2O3 support, International Journal of Hydrogen Energy, 42 (2017) 20729-20738.
[156] B.P. Karaman, N. Cakiryilmaz, H. Arbag, N. Oktar, G. Dogu, T. Dogu, Performance comparison of mesoporous alumina supported Cu & Ni based catalysts in acetic acid reforming, International Journal of Hydrogen Energy, 42 (2017) 26257-26269.

[157] J. Vicente, J. Ereña, C. Montero, M.J. Azkoiti, J. Bilbao, A.G. Gayubo, Reaction pathway for ethanol steam reforming on a Ni/SiO2 catalyst including coke formation, International journal of hydrogen energy, 39 (2014) 18820-18834.
[158] C. Montero, A. Ochoa, P. Castaño, J. Bilbao, A.G. Gayubo, Monitoring Ni0 and coke evolution during the deactivation of a Ni/La2O3–αAl2O3 catalyst in ethanol steam reforming in a fluidized bed, Journal of catalysis, 331 (2015) 181-192.
[159] A. Remiro, B. Valle, A. Aguayo, J. Bilbao, A.G. Gayubo, Steam reforming of raw bio-oil in a fluidized bed reactor with prior separation of pyrolytic lignin, Energy & fuels, 27 (2013) 7549-7559.
[160] A. Djaidja, S. Libs, A. Kiennemann, A. Barama, Characterization and activity in dry reforming of methane on NiMg/Al and Ni/MgO catalysts, Catalysis Today, 113 (2006) 194-200.
[161] P.R. de la Piscina, N. Homs, Use of biofuels to produce hydrogen (reformation processes), Chemical Society Reviews, 37 (2008) 2459-2467.
[162] H. He, J. Nakamura, K.-i. Tanaka, Spectroscopic evidence for the formation of CH x species in the hydrogenation of carbidic carbon on Ni (100), Catalysis letters, 16 (1992) 407-412.
[163] Y.C. Sharma, A. Kumar, R. Prasad, S.N. Upadhyay, Ethanol steam reforming for hydrogen production: latest and effective catalyst modification strategies to minimize carbonaceous deactivation, Renewable and Sustainable Energy Reviews, 74 (2017) 89-103.
[164] F.G.E. Nogueira, P.G. Assaf, H.W. Carvalho, E.M. Assaf, Catalytic steam reforming of acetic acid as a model compound of bio-oil, Applied catalysis b: environmental, 160 (2014) 188-199.
[165] C. Zhang, X. Hu, Z. Zhang, L. Zhang, D. Dong, G. Gao, R. Westerhof, S.S.A. Syed-Hassan, Steam reforming of acetic acid over Ni/Al2O3 catalyst: Correlation of calcination temperature with the interaction of nickel and alumina, Fuel, 227 (2018) 307-324.
[166] P. De Bokx, A. Kock, E. Boellaard, W. Klop, J.W. Geus, The formation of filamentous carbon on iron and nickel catalysts: I. Thermodynamics, Journal of catalysis, 96 (1985) 454-467.
[167] F. Liu, Y. Qu, Y. Yue, G. Liu, Y. Liu, Nano bimetallic alloy of Ni–Co obtained from LaCo x Ni 1−x O 3 and its catalytic performance for steam reforming of ethanol, RSC Advances, 5 (2015) 16837-16846.
[168] S. Iijima, Helical microtubules of graphitic carbon, nature, 354 (1991) 56-58.
[169] R.-r. Hu, C.-f. Yan, X.-x. Zheng, H. Liu, Z.-y. Zhou, Carbon deposition on Ni/ZrO2–CeO2 catalyst during steam reforming of acetic acid, International journal of hydrogen energy, 38 (2013) 6033-6038.
[170] F. Cheng, V. Dupont, Nickel catalyst auto-reduction during steam reforming of bio-oil model compound acetic acid, International Journal of Hydrogen Energy, 38 (2013) 15160-15172.
[171] C. Park, M.A. Keane, Catalyst support effects in the growth of structured carbon from the decomposition of ethylene over nickel, Journal of Catalysis, 221 (2004) 386-399.
[172] J. Chen, X. Yang, Y. Li, Investigation on the structure and the oxidation activity of the solid carbon produced from catalytic decomposition of methane, Fuel, 89 (2010) 943-948.
[173] T.M.C. Hoang, B. Geerdink, J.M. Sturm, L. Lefferts, K. Seshan, Steam reforming of acetic acid – A major component in the volatiles formed during gasification of humin, Applied Catalysis B: Environmental, 163 (2015) 74-82.
[174] M. Marquevich, F. Medina, D. Montané, Hydrogen production via steam reforming of sunflower oil over Ni/Al catalysts from hydrotalcite materials, Catalysis Communications, 2 (2001) 119-124.
[175] X. Hu, G. Lu, Investigation of the steam reforming of a series of model compounds derived from bio-oil for hydrogen production, Applied Catalysis B: Environmental, 88 (2009) 376-385.
[176] E.E. Iojoiu, M.E. Domine, T. Davidian, N. Guilhaume, C. Mirodatos, Hydrogen production by sequential cracking of biomass-derived pyrolysis oil over noble metal catalysts supported on ceria-zirconia, Applied Catalysis A: General, 323 (2007) 147-161.
[177] T. Davidian, N. Guilhaume, C. Daniel, C. Mirodatos, Continuous hydrogen production by sequential catalytic cracking of acetic acid: Part I. Investigation of reaction conditions and

application to two parallel reactors operated cyclically, Applied Catalysis A: General, 335 (2008) 64-73.
[178] T. Davidian, N. Guilhaume, E. Iojoiu, H. Provendier, C. Mirodatos, Hydrogen production from crude pyrolysis oil by a sequential catalytic process, Applied Catalysis B: Environmental, 73 (2007) 116-127.
[179] J. Medrano, M. Oliva, J. Ruiz, L. García, J. Arauzo, Hydrogen from aqueous fraction of biomass pyrolysis liquids by catalytic steam reforming in fluidized bed, Energy, 36 (2011) 2215-2224.
[180] J.R. Galdámez, L. García, R. Bilbao, Hydrogen production by steam reforming of bio-oil using coprecipitated Ni− Al catalysts. Acetic acid as a model compound, Energy & Fuels, 19 (2005) 1133-1142.
[181] P.N. Kechagiopoulos, S.S. Voutetakis, A.A. Lemonidou, I.A. Vasalos, Sustainable hydrogen production via reforming of ethylene glycol using a novel spouted bed reactor, Catalysis Today, 127 (2007) 246-255.
[182] P.N. Kechagiopoulos, S.S. Voutetakis, A.A. Lemonidou, I.A. Vasalos, Hydrogen production via reforming of the aqueous phase of bio-oil over Ni/olivine catalysts in a spouted bed reactor, Industrial & Engineering Chemistry Research, 48 (2008) 1400-1408.
[183] J. Fermoso, M.V. Gil, F. Rubiera, D. Chen, Multifunctional Pd/Ni–Co catalyst for hydrogen production by chemical looping coupled with steam reforming of acetic acid, ChemSusChem, 7 (2014) 3063-3077.
[184] E.C. Vagia, A.A. Lemonidou, Hydrogen production via steam reforming of bio-oil components over calcium aluminate supported nickel and noble metal catalysts, Applied Catalysis A: General, 351 (2008) 111-121.
[185] W. Nabgan, T.A.T. Abdullah, R. Mat, B. Nabgan, A.A. Jalil, L. Firmansyah, S. Triwahyono, Production of hydrogen via steam reforming of acetic acid over Ni and Co supported on La2O3 catalyst, international journal of hydrogen energy, 42 (2017) 8975-8985.
[186] E.C. Vagia, A.A. Lemonidou, Investigations on the properties of ceria–zirconia-supported Ni and Rh catalysts and their performance in acetic acid steam reforming, Journal of catalysis, 269 (2010) 388-396.
[187] A.C. Basagiannis, X.E. Verykios, Influence of the carrier on steam reforming of acetic acid over Ru-based catalysts, Applied Catalysis B: Environmental, 82 (2008) 77-88.
[188] A. Basile, F. Gallucci, A. Iulianelli, F. Borgognoni, S. Tosti, Acetic acid steam reforming in a Pd–Ag membrane reactor: the effect of the catalytic bed pattern, Journal of Membrane Science, 311 (2008) 46-52.
[189] F. Bossola, C. Evangelisti, M. Allieta, R. Psaro, S. Recchia, V. Dal Santo, Well-formed, size-controlled ruthenium nanoparticles active and stable for acetic acid steam reforming, Applied Catalysis B: Environmental, 181 (2016) 599-611.
[190] M.V. Gil, J. Fermoso, C. Pevida, D. Chen, F. Rubiera, Production of fuel-cell grade H2 by sorption enhanced steam reforming of acetic acid as a model compound of biomass-derived bio-oil, Applied Catalysis B: Environmental, 184 (2016) 64-76.
[191] C. Rioche, S. Kulkarni, F.C. Meunier, J.P. Breen, R. Burch, Steam reforming of model compounds and fast pyrolysis bio-oil on supported noble metal catalysts, Applied Catalysis B: Environmental, 61 (2005) 130-139.
[192] A. Basagiannis, X. Verykios, Catalytic steam reforming of acetic acid for hydrogen production, International journal of hydrogen energy, 32 (2007) 3343-3355.
[193] X. Hu, G. Lu, Comparative study of alumina-supported transition metal catalysts for hydrogen generation by steam reforming of acetic acid, Applied Catalysis B: Environmental, 99 (2010) 289-297.
[194] A. Basagiannis, X. Verykios, Reforming reactions of acetic acid on nickel catalysts over a wide temperature range, Applied Catalysis A: General, 308 (2006) 182-193.

[195] F. Zhang, N. Wang, L. Yang, M. Li, L. Huang, NieCo bimetallic MgO-based catalysts for hydrogen production via steam reforming of acetic acid from bio-oil, international journal of hydrogen energy, 30 (2014) e7.
[196] M. Koike, D. Li, H. Watanabe, Y. Nakagawa, K. Tomishige, Comparative study on steam reforming of model aromatic compounds of biomass tar over Ni and Ni–Fe alloy nanoparticles, Applied Catalysis A: General, 506 (2015) 151-162.
[197] A. Lytkina, N. Zhilyaeva, M. Ermilova, N. Orekhova, A. Yaroslavtsev, Influence of the support structure and composition of Ni–Cu-based catalysts on hydrogen production by methanol steam reforming, international journal of hydrogen energy, 40 (2015) 9677-9684.
[198] Z. Ma, R. Xiao, H. Zhang, Catalytic steam reforming of bio-oil model compounds for hydrogen-rich gas production using bio-char as catalyst, International Journal of Hydrogen Energy, 42 (2017) 3579-3585.
[199] Y. Yue, F. Liu, L. Zhao, L. Zhang, Y. Liu, Loading oxide nano sheet supported Ni–Co alloy nanoparticles on the macroporous walls of monolithic alumina and their catalytic performance for ethanol steam reforming, International Journal of Hydrogen Energy, 40 (2015) 7052-7063.
[200] C.M. Jeong, G.W. Park, J.W. Kang, S.M. Kim, W.-H. Lee, S.I. Woo, H.N. Chang, Steam reforming of volatile fatty acids (VFAs) over supported Pt/Al2O3 catalysts, International Journal of Hydrogen Energy, 36 (2011) 7505-7515.
[201] B.M. Güell, I.T. da Silva, K. Seshan, L. Lefferts, Sustainable route to hydrogen–Design of stable catalysts for the steam gasification of biomass related oxygenates, Applied catalysis B: environmental, 88 (2009) 59-65.
[202] B.M. Güell, I. Babich, K. Nichols, J.G. Gardeniers, L. Lefferts, K. Seshan, Design of a stable steam reforming catalyst—A promising route to sustainable hydrogen from biomass oxygenates, Applied catalysis B: environmental, 90 (2009) 38-44.
[203] X. Hu, L. Zhang, G. Lu, Steam reforming of acetic acid over CuZnCo catalyst for hydrogen generation: Synergistic effects of the metal species, International Journal of Hydrogen Energy, 41 (2016) 13960-13969.
[204] X. Hu, G. Lu, Investigation of steam reforming of acetic acid to hydrogen over Ni–Co metal catalyst, Journal of Molecular Catalysis A: Chemical, 261 (2007) 43-48.
[205] S.C. Mizuno, A.H. Braga, C.E. Hori, J.B.O. Santos, J.M.C. Bueno, Steam reforming of acetic acid over MgAl2O4-supported Co and Ni catalysts: Effect of the composition of Ni/Co and reactants on reaction pathways, Catalysis Today, 296 (2017) 144-153.
[206] T. Hou, L. Yuan, T. Ye, L. Gong, J. Tu, M. Yamamoto, Y. Torimoto, Q. Li, Hydrogen production by low-temperature reforming of organic compounds in bio-oil over a CNT-promoting Ni catalyst, International Journal of Hydrogen Energy, 34 (2009) 9095-9107.
[207] H. Arbag, S. Yasyerli, N. Yasyerli, G. Dogu, T. Dogu, Enhancement of catalytic performance of Ni based mesoporous alumina by Co incorporation in conversion of biogas to synthesis gas, Applied Catalysis B: Environmental, 198 (2016) 254-265.
[208] X. Zhao, Y. Xue, C. Yan, Y. Huang, Z. Lu, Z. Wang, L. Zhang, C. Guo, Promoted activity of porous silica coated Ni/CeO2ZrO2 catalyst for steam reforming of acetic acid, International Journal of Hydrogen Energy, 42 (2017) 21677-21685.
[209] J. Pieterse, J. Boon, Y. Van Delft, J. Dijkstra, R. Van den Brink, On the potential of nickel catalysts for steam reforming in membrane reactors, Catalysis Today, 156 (2010) 153-164.
[210] G. Wu, S. Li, C. Zhang, T. Wang, J. Gong, Glycerol steam reforming over perovskite-derived nickel-based catalysts, Applied Catalysis B: Environmental, 144 (2014) 277-285.
[211] D. Wang, D. Montane, E. Chornet, Catalytic steam reforming of biomass-derived oxygenates: acetic acid and hydroxyacetaldehyde, Applied Catalysis A: General, 143 (1996) 245-270.
[212] J. Medrano, M. Oliva, J. Ruiz, L. Garcia, J. Arauzo, Catalytic steam reforming of acetic acid in a fluidized bed reactor with oxygen addition, International Journal of Hydrogen Energy, 33 (2008) 4387-4396.

[213] F. Bimbela, M. Oliva, J. Ruiz, L. García, J. Arauzo, Hydrogen production by catalytic steam reforming of acetic acid, a model compound of biomass pyrolysis liquids, Journal of Analytical and Applied Pyrolysis, 79 (2007) 112-120.
[214] M.C. Ramos, A.I. Navascués, L. García, R. Bilbao, Hydrogen production by catalytic steam reforming of acetol, a model compound of bio-oil, Industrial & engineering chemistry research, 46 (2007) 2399-2406.
[215] X. Hu, L. Zhang, G. Lu, Pruning of the surface species on Ni/Al2O3 catalyst to selective production of hydrogen via acetone and acetic acid steam reforming, Applied Catalysis A: General, 427-428 (2012) 49-57.
[216] J. Sehested, Sintering of nickel steam-reforming catalysts, Journal of Catalysis, 217 (2003) 417-426.
[217] J.A. Medrano, M. Oliva, J. Ruiz, L. Garcia, J. Arauzo, Catalytic steam reforming of acetic acid in a fluidized bed reactor with oxygen addition, International Journal of Hydrogen Energy, 33 (2008) 4387-4396.
[218] Z. Zhang, X. Hu, J. Li, G. Gao, D. Dong, R. Westerhof, S. Hu, J. Xiang, Y. Wang, Steam reforming of acetic acid over Ni/Al2O3 catalysts: Correlation of nickel loading with properties and catalytic behaviors of the catalysts, Fuel, 217 (2018) 389-403.
[219] N. Goyal, K.K. Pant, R. Gupta, Hydrogen production by steam reforming of model bio-oil using structured Ni/Al2O3 catalysts, International Journal of Hydrogen Energy, 38 (2013) 921-933.
[220] T. Horiuchi, K. Sakuma, T. Fukui, Y. Kubo, T. Osaki, T. Mori, Suppression of carbon deposition in the CO2-reforming of CH4 by adding basic metal oxides to a Ni/Al2O3 catalyst, Applied Catalysis A: General, 144 (1996) 111-120.
[221] J. Sehested, N.W. Larsen, H. Falsig, B. Hinnemann, Sintering of nickel steam reforming catalysts: Effective mass diffusion constant for Ni-OH at nickel surfaces, Catalysis Today, 228 (2014) 22-31.
[222] F.G.E. Nogueira, P.G.M. Assaf, H.W.P. Carvalho, E.M. Assaf, Catalytic steam reforming of acetic acid as a model compound of bio-oil, Applied Catalysis B: Environmental, 160-161 (2014) 188-199.
[223] J. Sehested, A. Carlsson, T.V.W. Janssens, P.L. Hansen, A.K. Datye, Sintering of Nickel Steam-Reforming Catalysts on MgAl2O4 Spinel Supports, Journal of Catalysis, 197 (2001) 200-209.
[224] J. Sehested, J.A.P. Gelten, I.N. Remediakis, H. Bengaard, J.K. Nørskov, Sintering of nickel steam-reforming catalysts: effects of temperature and steam and hydrogen pressures, Journal of Catalysis, 223 (2004) 432-443.
[225] J. Sehested, Four challenges for nickel steam-reforming catalysts, Catalysis Today, 111 (2006) 103-110.
[226] J. Sehested, J.A.P. Gelten, S. Helveg, Sintering of nickel catalysts: Effects of time, atmosphere, temperature, nickel-carrier interactions, and dopants, Applied Catalysis A: General, 309 (2006) 237-246.
[227] J. Pu, F. Ikegami, K. Nishikado, E.W. Qian, Effect of ceria addition on NiRu/CeO2Al2O3 catalysts in steam reforming of acetic acid, International Journal of Hydrogen Energy, 42 (2017) 19733-19743.
[228] A. Iriondo, V.L. Barrio, J.F. Cambra, P.L. Arias, M.B. Güemez, R.M. Navarro, M.C. Sánchez-Sánchez, J.L.G. Fierro, Hydrogen Production from Glycerol Over Nickel Catalysts Supported on Al2O3 Modified by Mg, Zr, Ce or La, Topics in Catalysis, 49 (2008) 46.
[229] Y. Cui, V. Galvita, L. Rihko-Struckmann, H. Lorenz, K. Sundmacher, Steam reforming of glycerol: The experimental activity of La1−xCexNiO3 catalyst in comparison to the thermodynamic reaction equilibrium, Applied Catalysis B: Environmental, 90 (2009) 29-37.
[230] Z. Hou, O. Yokota, T. Tanaka, T. Yashima, A Novel KCaNi/α-Al2O3 Catalyst for CH4 Reforming with CO2, Catalysis Letters, 87 (2003) 37-42.
[231] X. Hu, G. Lu, Inhibition of methane formation in steam reforming reactions through modification of Ni catalyst and the reactants, Green Chemistry, 11 (2009) 724-732.

[232] S. Wang, F. Zhang, Q. Cai, X. Li, L. Zhu, Q. Wang, Z. Luo, Catalytic steam reforming of bio-oil model compounds for hydrogen production over coal ash supported Ni catalyst, International journal of hydrogen energy, 39 (2014) 2018-2025.
[233] R. Borges, R. Ferreira, R.C. Rabelo-Neto, F.B. Noronha, C. Hori, Hydrogen production by steam reforming of acetic acid using hydrotalcite type precursors, International Journal of Hydrogen Energy, 43 (2018) 7881-7892.
[234] J. Remón, J.A. Medrano, F. Bimbela, L. García, J. Arauzo, Ni/Al–Mg–O solids modified with Co or Cu for the catalytic steam reforming of bio-oil, Applied Catalysis B: Environmental, 132-133 (2013) 433-444.
[235] S. Thaicharoensutcharittham, V. Meeyoo, B. Kitiyanan, P. Rangsunvigit, T. Rirksomboon, Hydrogen production by steam reforming of acetic acid over Ni-based catalysts, Catalysis Today, 164 (2011) 257-261.
[236] M. Sugisawa, K. Takanabe, M. Harada, J. Kubota, K. Domen, Effects of La addition to Ni/Al2O3 catalysts on rates and carbon deposition during steam reforming of n-dodecane, Fuel Processing Technology, 92 (2011) 21-25.
[237] S. Goicoechea, E. Kraleva, H. Ehrich, Effect of Al2O3/ZnO Ratio on Ni(Co)–AlZnOx Catalysts for Syngas Production by Steam Reforming of Acetic Acid, Catalysis Letters, 147 (2017) 1403-1410.
[238] B. Matas Güell, I.M.T.d. Silva, K. Seshan, L. Lefferts, Sustainable route to hydrogen – Design of stable catalysts for the steam gasification of biomass related oxygenates, Applied Catalysis B: Environmental, 88 (2009) 59-65.
[239] Z. Li, X. Hu, L. Zhang, S. Liu, G. Lu, Steam reforming of acetic acid over Ni/ZrO2 catalysts: Effects of nickel loading and particle size on product distribution and coke formation, Applied catalysis A: general, 417 (2012) 281-289.
[240] I.A. Fisher, H.C. Woo, A.T. Bell, Effects of zirconia promotion on the activity of Cu/SiO2 for methanol synthesis from CO/H2 and CO2/H2, Catalysis Letters, 44 (1997) 11-17.
[241] E.B. Silveira, R.C. Rabelo-Neto, F.B. Noronha, Steam reforming of toluene, methane and mixtures over Ni/ZrO2 catalysts, Catalysis Today, 289 (2017) 289-301.
[242] F.B. Passos, E.R. de Oliveira, L.V. Mattos, F.B. Noronha, Partial oxidation of methane to synthesis gas on Pt/CexZr1−xO2 catalysts: the effect of the support reducibility and of the metal dispersion on the stability of the catalysts, Catalysis Today, 101 (2005) 23-30.
[243] V.M. Gonzalez-DelaCruz, J.P. Holgado, R. Pereñíguez, A. Caballero, Morphology changes induced by strong metal–support interaction on a Ni–ceria catalytic system, Journal of Catalysis, 257 (2008) 307-314.
[244] T. Toyoda, Y. Nishihara, E.W. Qian, CO hydrogenation on group VI metal–ceria catalysts, Fuel Processing Technology, 125 (2014) 86-93.
[245] M.M. Mohamed, T.M. Salama, A.I. Othman, G.A. El-Shobaky, Low temperature water-gas shift reaction on cerium containing mordenites prepared by different methods, Applied Catalysis A: General, 279 (2005) 23-33.
[246] L. An, C. Dong, Y. Yang, J. Zhang, L. He, The influence of Ni loading on coke formation in steam reforming of acetic acid, Renewable Energy, 36 (2011) 930-935.
[247] J. Kašpar, P. Fornasiero, M. Graziani, Use of CeO2-based oxides in the three-way catalysis, Catalysis Today, 50 (1999) 285-298.
[248] P.J. Schmitz, R.K. Usmen, C.R. Peters, G.W. Graham, R.W. McCabe, Effect of calcination temperature on Al2O3-supported CeO2: complementary results from XRD and XPS, Applied Surface Science, 72 (1993) 181-187.
[249] K. Tomishige, T. Kimura, J. Nishikawa, T. Miyazawa, K. Kunimori, Promoting effect of the interaction between Ni and CeO2 on steam gasification of biomass, Catalysis Communications, 8 (2007) 1074-1079.
[250] G. Garbarino, C. Wang, I. Valsamakis, S. Chitsazan, P. Riani, E. Finocchio, M. Flytzani-Stephanopoulos, G. Busca, A study of Ni/Al2O3 and Ni–La/Al2O3 catalysts for the steam reforming of ethanol and phenol, Applied Catalysis B: Environmental, 174 (2015) 21-34.

[251] L.P. Profeti, J.A. Dias, J.M. Assaf, E.M. Assaf, Hydrogen production by steam reforming of ethanol over Ni-based catalysts promoted with noble metals, Journal of Power Sources, 190 (2009) 525-533.
[252] M. Sánchez-Sánchez, R. Navarro, J. Fierro, Ethanol steam reforming over Ni/La–Al2O3 catalysts: Influence of lanthanum loading, Catalysis Today, 129 (2007) 336-345.
[253] J. Sehested, J.A. Gelten, I.N. Remediakis, H. Bengaard, J.K. Nørskov, Sintering of nickel steam-reforming catalysts: effects of temperature and steam and hydrogen pressures, Journal of Catalysis, 223 (2004) 432-443.
[254] B. Valle, B. Aramburu, A. Remiro, J. Bilbao, A.G. Gayubo, Effect of calcination/reduction conditions of Ni/La2O3–αAl2O3 catalyst on its activity and stability for hydrogen production by steam reforming of raw bio-oil/ethanol, Applied Catalysis B: Environmental, 147 (2014) 402-410.
[255] M. Li, X. Wang, S. Li, S. Wang, X. Ma, Hydrogen production from ethanol steam reforming over nickel based catalyst derived from Ni/Mg/Al hydrotalcite-like compounds, International Journal of Hydrogen Energy, 35 (2010) 6699-6708.
[256] K.F. Elias, A.F. Lucrédio, E.M. Assaf, Effect of CaO addition on acid properties of Ni–Ca/Al2O3 catalysts applied to ethanol steam reforming, International Journal of Hydrogen Energy, 38 (2013) 4407-4417.
[257] A. Vizcaíno, M. Lindo, A. Carrero, J. Calles, Hydrogen production by steam reforming of ethanol using Ni catalysts based on ternary mixed oxides prepared by coprecipitation, international journal of hydrogen energy, 37 (2012) 1985-1992.
[258] C.K. Choong, Z. Zhong, L. Huang, Z. Wang, T.P. Ang, A. Borgna, J. Lin, L. Hong, L. Chen, Effect of calcium addition on catalytic ethanol steam reforming of Ni/Al2O3: I. Catalytic stability, electronic properties and coking mechanism, Applied Catalysis A: General, 407 (2011) 145-154.
[259] M. Sánchez-Sánchez, R. Navarro, J. Fierro, Ethanol steam reforming over Ni/MxOy–Al2O3 (M= Ce, La, Zr and Mg) catalysts: influence of support on the hydrogen production, International Journal of Hydrogen Energy, 32 (2007) 1462-1471.
[260] J.d.S. Lisboa, D.C. Santos, F.B. Passos, F.B. Noronha, Influence of the addition of promoters to steam reforming catalysts, Catalysis today, 101 (2005) 15-21.
[261] R. Lødeng, M. Barre-Chassonnery, M. Fathi, O. Rokstad, A. Holmen, Carbon formation from decomposition of CH4 on supported Ni catalysts, Studies in Surface Science and Catalysis, Elsevier1997, pp. 561-566.
[262] M.N. Barroso, A.E. Galetti, M.C. Abello, Ni catalysts supported over MgAl2O4 modified with Pr for hydrogen production from ethanol steam reforming, Applied Catalysis A: General, 394 (2011) 124-131.
[263] E. Salehi, F.S. Azad, T. Harding, J. Abedi, Production of hydrogen by steam reforming of bio-oil over Ni/Al2O3 catalysts: Effect of addition of promoter and preparation procedure, Fuel processing technology, 92 (2011) 2203-2210.
[264] X. Xu, C. Zhang, Y. Liu, Y. Zhai, R. Zhang, X. Tang, Catalytic reforming of acetic acid as a model compound of bio-oil for hydrogen production over N i-C e O 2-M g O/olivine catalysts, Environmental Progress & Sustainable Energy, 34 (2015) 915-922.
[265] X. Yang, Y. Wang, M. Li, B. Sun, Y. Li, Y. Wang, Enhanced hydrogen production by steam reforming of acetic acid over a Ni catalyst supported on mesoporous MgO, Energy & Fuels, 30 (2016) 2198-2203.
[266] F. Zhang, N. Wang, L. Yang, M. Li, L. Huang, Ni–Co bimetallic MgO-based catalysts for hydrogen production via steam reforming of acetic acid from bio-oil, International journal of hydrogen energy, 39 (2014) 18688-18694.
[267] M.M. Barroso-Quiroga, A.E. Castro-Luna, Catalytic activity and effect of modifiers on Ni-based catalysts for the dry reforming of methane, International Journal of Hydrogen Energy, 35 (2010) 6052-6056.
[268] F. Frusteri, F. Arena, G. Calogero, T. Torre, A. Parmaliana, Potassium-enhanced stability of Ni/MgO catalysts in the dry-reforming of methane, Catalysis Communications, 2 (2001) 49-56.

[269] J. Medrano, M. Oliva, J. Ruiz, L. García, J. Arauzo, Catalytic steam reforming of model compounds of biomass pyrolysis liquids in fluidized bed reactor with modified Ni/Al catalysts, Journal of Analytical and Applied Pyrolysis, 85 (2009) 214-225.
[270] Z. Hou, O. Yokota, T. Tanaka, T. Yashima, A novel KCaNi/α-Al 2 O 3 catalyst for CH 4 reforming with CO 2, Catalysis letters, 87 (2003) 37-42.
[271] Z. Hou, O. Yokota, T. Tanaka, T. Yashima, Characterization of Ca-promoted Ni/α-Al2O3 catalyst for CH4 reforming with CO2, Applied Catalysis A: General, 253 (2003) 381-387.
[272] A.A. Lemonidou, I.A. Vasalos, Carbon dioxide reforming of methane over 5 wt.% Ni/CaO-Al2O3 catalyst, Applied Catalysis A: General, 228 (2002) 227-235.
[273] J.d.S. Lisboa, D.C.R.M. Santos, F.B. Passos, F.B. Noronha, Influence of the addition of promoters to steam reforming catalysts, Catalysis Today, 101 (2005) 15-21.
[274] J. Arauzo, D. Radlein, J. Piskorz, D.S. Scott, Catalytic Pyrogasification of Biomass. Evaluation of Modified Nickel Catalysts, Industrial & Engineering Chemistry Research, 36 (1997) 67-75.
[275] R.M. Navarro, M.C. Álvarez-Galván, F. Rosa, J.L.G. Fierro, Hydrogen production by oxidative reforming of hexadecane over Ni and Pt catalysts supported on Ce/La-doped Al2O3, Applied Catalysis A: General, 297 (2006) 60-72.
[276] J.S. Church, N.W. Cant, D.L. Trimm, Stabilisation of aluminas by rare earth and alkaline earth ions, Applied Catalysis A: General, 101 (1993) 105-116.
[277] B. Xia, I.W. Lenggoro, K. Okuyama, Preparation of Nickel Powders by Spray Pyrolysis of Nickel Formate, Journal of the American Ceramic Society, 84 (2001) 1425-1432.
[278] C. Ruiz-Pérez, P.A. Lorenzo Luis, F. Lloret, M. Julve, Dimensionally controlled hydrogen-bonded nanostructures: synthesis, structure, thermal and magnetic behaviour of the tris-(chelated)nickel(II) complex [Ni(bipy)3]Cl2·5.5H2O (bipy=2,2′-bipyridyl), Inorganica Chimica Acta, 336 (2002) 131-136.
[279] M. Ahmad, A. Asghar, A.A. Abdul Raman, W.M.A. Wan Daud, Enhancement of Treatment Efficiency of Recalcitrant Wastewater Containing Textile Dyes Using a Newly Developed Iron Zeolite Socony Mobil-5 Heterogeneous Catalyst, PLOS ONE, 10 (2015) e0141348.
[280] N. Parveen, R. Nazir, M. Mazhar, Thermal degradation pathways of nickel (II) bipyridine complexes to size-controlled nickel nanoparticles, Journal of thermal analysis and calorimetry, 111 (2013) 93-99.
[281] A.A. Abdul Raman, M. Ahmad, S. Ahmed, A Two-Step Process for Industrial Scale Production of Nano Heterometallic Catalysts, 2015.
[282] R. Jaballi, D. Atoui, W. Maalej, A. Babaryk, P. Horcajada, R. Ben Salem, Z. Elaoud, A new mononuclear nickel complex with 5,5′-dimethyl-2,2′-bipyridine: Synthesis, structural investigation and catalytic properties, Journal of Molecular Structure, 1219 (2020) 128572.
[283] C. Italiano, K. Bizkarra, V.L. Barrio, J.F. Cambra, L. Pino, A. Vita, Renewable hydrogen production via steam reforming of simulated bio-oil over Ni-based catalysts, International Journal of Hydrogen Energy, 44 (2019) 14671-14682.
[284] J. Zieliński, Morphology of nickel/alumina catalysts, Journal of Catalysis, 76 (1982) 157-163.
[285] J. Abou Rached, C. El Hayek, E. Dahdah, C. Gennequin, S. Aouad, H.L. Tidahy, J. Estephane, B. Nsouli, A. Aboukaïs, E. Abi-Aad, Ni based catalysts promoted with cerium used in the steam reforming of toluene for hydrogen production, International Journal of Hydrogen Energy, 42 (2017) 12829-12840.
[286] R. Yang, J. Wu, X. Li, X. Zhang, Z. Zhang, J. Guo, Hydrotreating of crude 2-ethylhexanol over Ni/Al2O3 catalysts: Influence of the Ni oxide dispersion on the active sites, Applied Catalysis A: General, 383 (2010) 112-118.
[287] J.M. Rynkowski, T. Paryjczak, M. Lenik, On the nature of oxidic nickel phases in NiO/γ-Al2O3 catalysts, Applied Catalysis A: General, 106 (1993) 73-82.
[288] P. Osorio-Vargas, N.A. Flores-González, R.M. Navarro, J.L. Fierro, C.H. Campos, P. Reyes, Improved stability of Ni/Al2O3 catalysts by effect of promoters (La2O3, CeO2) for ethanol steam-reforming reaction, Catalysis Today, 259 (2016) 27-38.

[289] F. Lónyi, J. Valyon, E. Someus, J. Hancsók, Steam reforming of bio-oil from pyrolysis of MBM over particulate and monolith supported Ni/γ-Al2O3 catalysts, Fuel, 112 (2013) 23-30.
[290] C. Melchor-Hernández, A. Gómez-Cortés, G. Díaz, Hydrogen production by steam reforming of ethanol over nickel supported on La-modified alumina catalysts prepared by sol–gel, Fuel, 107 (2013) 828-835.
[291] I.Z. Ismagilov, E.V. Matus, V.V. Kuznetsov, M.A. Kerzhentsev, S.A. Yashnik, I.P. Prosvirin, N. Mota, R.M. Navarro, J.L.G. Fierro, Z.R. Ismagilov, Hydrogen production by autothermal reforming of methane over NiPd catalysts: Effect of support composition and preparation mode, International Journal of Hydrogen Energy, 39 (2014) 20992-21006.
[292] R. Ranjan, A.S.K. Sinha, Optimizations of r GO supported CdS photo-electrocatalyst for dissociation of water, International Journal of Hydrogen Energy, 44 (2019) 5955-5969.
[293] K. Mašek, M. Václavů, P. Bábor, V. Matolín, Sn–CeO2 thin films prepared by rf magnetron sputtering: XPS and SIMS study, Applied Surface Science, 255 (2009) 6656-6660.
[294] L. Óvári, S. Krick Calderon, Y. Lykhach, J. Libuda, A. Erdőhelyi, C. Papp, J. Kiss, H.P. Steinrück, Near ambient pressure XPS investigation of the interaction of ethanol with Co/CeO2(111), Journal of Catalysis, 307 (2013) 132-139.
[295] J. Zhang, H. Wong, D. Yu, K. Kakushima, H. Iwai, X-ray photoelectron spectroscopy study of high-k CeO2/La2O3 stacked dielectrics, AIP Advances, 4 (2014) 117117.
[296] C. Anandan, P. Bera, XPS studies on the interaction of CeO2 with silicon in magnetron sputtered CeO2 thin films on Si and Si3N4 substrates, Applied Surface Science, 283 (2013) 297-303.
[297] D. Wang, D. Montané, E. Chornet, Catalytic steam reforming of biomass-derived oxygenates: acetic acid and hydroxyacetaldehyde, Applied Catalysis A: General, 143 (1996) 245-270.
[298] A. Iriondo, V.L. Barrio, J.F. Cambra, P.L. Arias, M.B. Guemez, M.C. Sanchez-Sanchez, R.M. Navarro, J.L.G. Fierro, Glycerol steam reforming over Ni catalysts supported on ceria and ceria-promoted alumina, International Journal of Hydrogen Energy, 35 (2010) 11622-11633.
[299] N. Miletić, U. Izquierdo, I. Obregón, K. Bizkarra, I. Agirrezabal-Telleria, L.V. Bario, P.L. Arias, Oxidative steam reforming of methane over nickel catalysts supported on Al2O3–CeO2–La2O3, Catalysis Science & Technology, 5 (2015) 1704-1715.
[300] C.H. Campos, P. Osorio-Vargas, N. Flores-González, J.L.G. Fierro, P. Reyes, Effect of Ni Loading on Lanthanide (La and Ce) Promoted γ-Al2O3 Catalysts Applied to Ethanol Steam Reforming, Catalysis Letters, 146 (2016) 433-441.
[301] P. Osorio-Vargas, N.A. Flores-González, R.M. Navarro, J.L.G. Fierro, C.H. Campos, P. Reyes, Improved stability of Ni/Al2O3 catalysts by effect of promoters (La2O3, CeO2) for ethanol steam-reforming reaction, Catalysis Today, 259 (2016) 27-38.
[302] F. Liu, L. Zhao, H. Wang, X. Bai, Y. Liu, Study on the preparation of Ni–La–Ce oxide catalyst for steam reforming of ethanol, International Journal of Hydrogen Energy, 39 (2014) 10454-10466.
[303] Y. Li, B. Zhang, X. Tang, Y. Xu, W. Shen, Hydrogen production from methane decomposition over Ni/CeO2 catalysts, Catalysis Communications, 7 (2006) 380-386.
[304] H. Jiang, H. Li, H. Xu, Y. Zhang, Preparation of Ni/MgxTi1−xO catalysts and investigation on their stability in tri-reforming of methane, Fuel Processing Technology, 88 (2007) 988-995.
[305] S. Sahebdelfar, Steam reforming of propionic acid: Thermodynamic analysis of a model compound for hydrogen production from bio-oil, International Journal of Hydrogen Energy, 42 (2017) 16386-16395.
[306] C.-H. Liao, R.-F. Horng, Investigation on the hydrogen production by methanol steam reforming with engine exhaust heat recovery strategy, International Journal of Hydrogen Energy, 41 (2016) 4957-4968.
[307] A.M. Robinson, J.E. Hensley, J.W. Medlin, Bifunctional catalysts for upgrading of biomass-derived oxygenates: a review, ACS catalysis, 6 (2016) 5026-5043.
[308] R. Yang, C. Xing, C. Lv, L. Shi, N. Tsubaki, Promotional effect of La2O3 and CeO2 on Ni/γ-Al2O3 catalysts for CO2 reforming of CH4, Applied Catalysis A: General, 385 (2010) 92-100.

[309] A. Kumar, A. Sinha, Comparative study of hydrogen production from steam reforming of acetic acid over synthesized catalysts via MOF and wet impregnation methods, International Journal of Hydrogen Energy, (2020).
[310] K.J. Leary, Temperature programmed reduction for solid materials characterization (Chemical Industries Series, Volume 24). By Alan Jones and Brian D. McNicol, Marcel Dekker, Inc., 1986, 208 pp., $59.75, AIChE Journal, 33 (1987) 1407-1408.
[311] J. Pu, Y. Luo, N. Wang, H. Bao, X. Wang, E.W. Qian, Ceria-promoted Ni@Al2O3 core-shell catalyst for steam reforming of acetic acid with enhanced activity and coke resistance, International Journal of Hydrogen Energy, 43 (2018) 3142-3153.
[312] N. Phongprueksathat, V. Meeyoo, T. Rirksomboon, Steam reforming of acetic acid for hydrogenproduction: Catalytic performances of Ni and Co supported on Ce0· 75Zr0· 25O2 catalysts, International Journal of Hydrogen Energy, 44 (2019) 9359-9367.
[313] D. Wang, S. Czernik, D. Montané, M. Mann, E. Chornet, Biomass to Hydrogen via Fast Pyrolysis and Catalytic Steam Reforming of the Pyrolysis Oil or Its Fractions, Industrial & Engineering Chemistry Research, 36 (1997) 1507-1518.
[314] M.C. Sánchez-Sánchez, R.M. Navarro, J.L.G. Fierro, Ethanol steam reforming over Ni/La–Al2O3 catalysts: Influence of lanthanum loading, Catalysis Today, 129 (2007) 336-345.
[315] P. Lu, Q. Huang, Y. Chi, J. Yan, Coking and Regeneration of Nickel Catalyst for the Cracking of Toluene As a Tar Model Compound, Energy & Fuels, 31 (2017) 8283-8290.
[316] Y. Wang, G. Luo, X. Xu, J. Xia, Deactivation of supported skeletal Ni catalyst and effect of regeneration temperature on its catalytic performance, Catalysis Communications, 57 (2014) 83-88.

Appendix

Appendix

GC Calibration and calculation

Calibration factors were used to calculate the mole ratios of different compounds in the product's gaseous mixture. It was defined as

Calibration factor of X with respect to Y,

$$K_{XY} = \frac{\dfrac{\text{Mole fraction of X in the standard mixture}}{\text{Mole fraction of Y in the standard mixture}}}{\dfrac{\text{Area of X}}{\text{Area of Y}}}$$

Calculation for samples

Mol fraction of unknown compounds (i)*,

$$\frac{K_{XY}\text{ (corresponding gases i)} \times \text{Area of gas (i)}}{\text{Molar fraction of } N_2 \times \text{Area of } N_2}$$

*(i):= (H_2, CO, CH_4, and CO_2).

Gas calibration curve and calculation

For the calculation of Gases, calibration factor of gases (CO, CH_4, CO_2, H_2) with respect to nitrogen were calculated using a standard mixture (Chemtron Science Laboratory, Navi Mumbai) of the following composition of gases in mole %

CH_4: 11 %   CO: 11 % CO_2: 15.67 % C_2H_6: 5.26 % H_2: 33.23 % N_2: 23.81 %

Detector: TCD

Carrier Gas: (Argon) flow 30 cc/min

Column: Carbosieve SII

Temperatures:

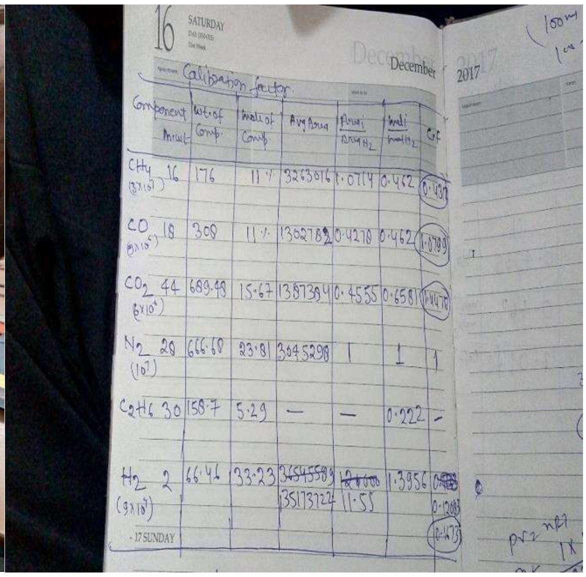
Oven: 80 °C; Injector: 100 °C; Detector: 100 °C

Calibration factor of H_2 with respect to N_2 = 0.1673

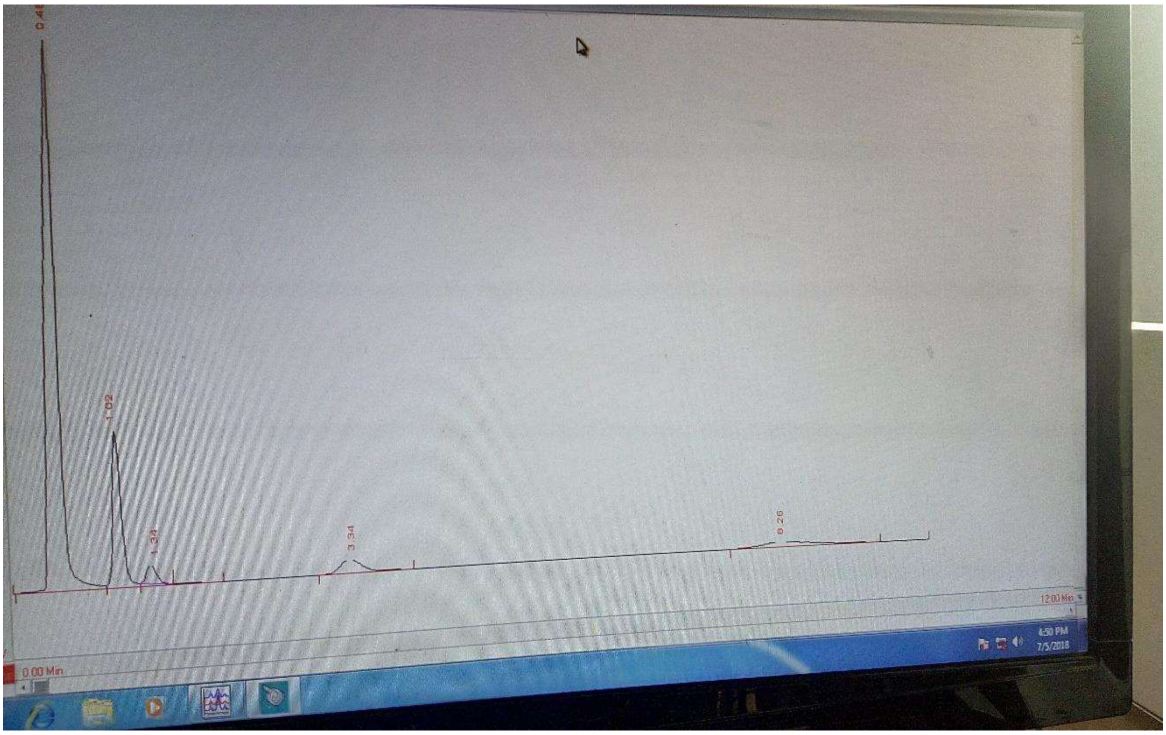
Calibration factor of CO with respect to N_2 = 1.0799

Calibration factor of CH_4 with respect to N_2 = 0.4313

Calibration factor of CO_2 with respect to N_2 = 1.4478



Sample Graph of Experiment



GC calibration for Liquid

Acetic acid calibration curve

Detector: FID

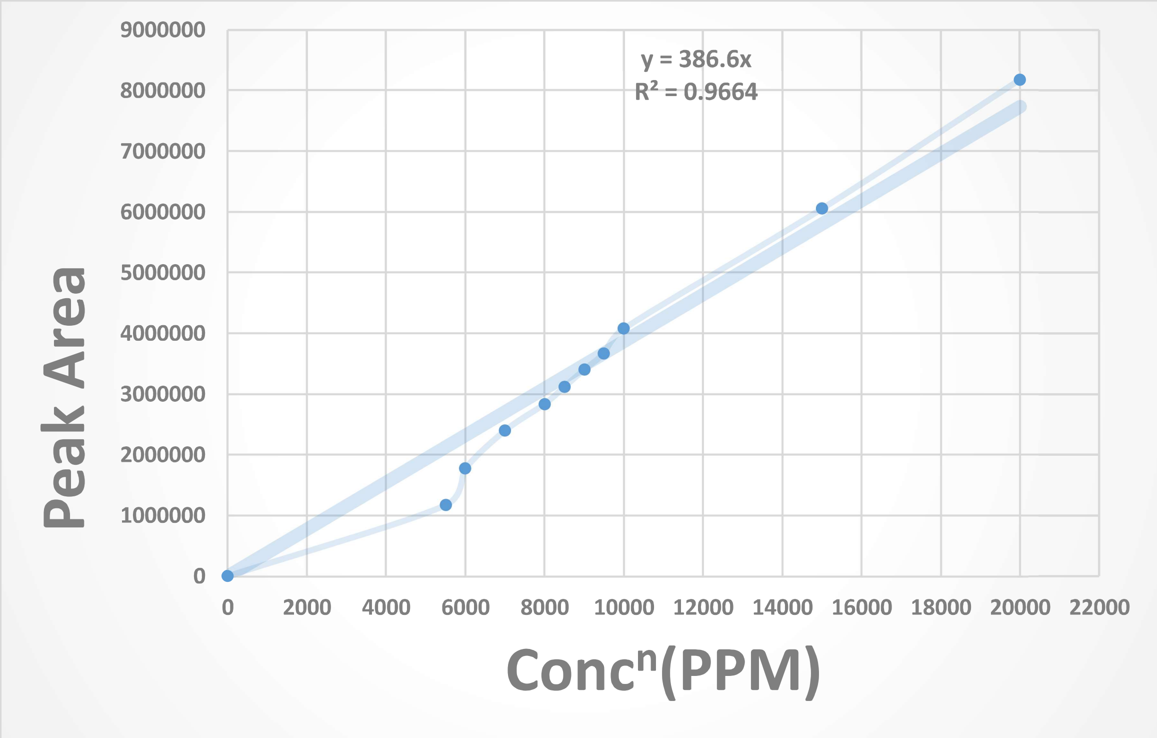
Carrier Gas: (Nitrogen) flow 30 cc/min

Column: Porapak Q

Temperatures:

Oven: 120 °C; Injector: 150 °C; Detector: 150 °C

Concentration (ppm)	Peak Area
0	0
5500	1171096
6000	1774065
7000	2398356
8000	2837590
8500	3119836
9000	3401812
9500	3672278
10000	4077037
15000	6051232
20000	8178986



Acetone calibration curve

Detector: FID

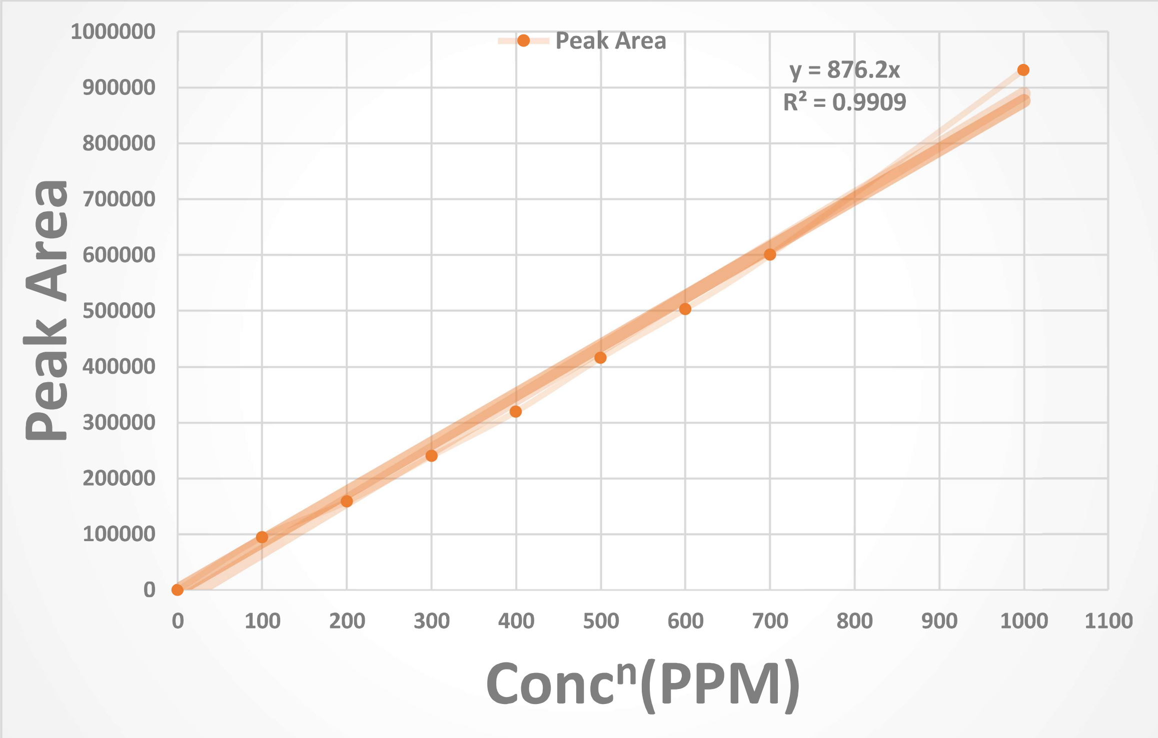
Carrier Gas: (Nitrogen) flow 30 cc/min

Column: Porapak Q

Temperatures:

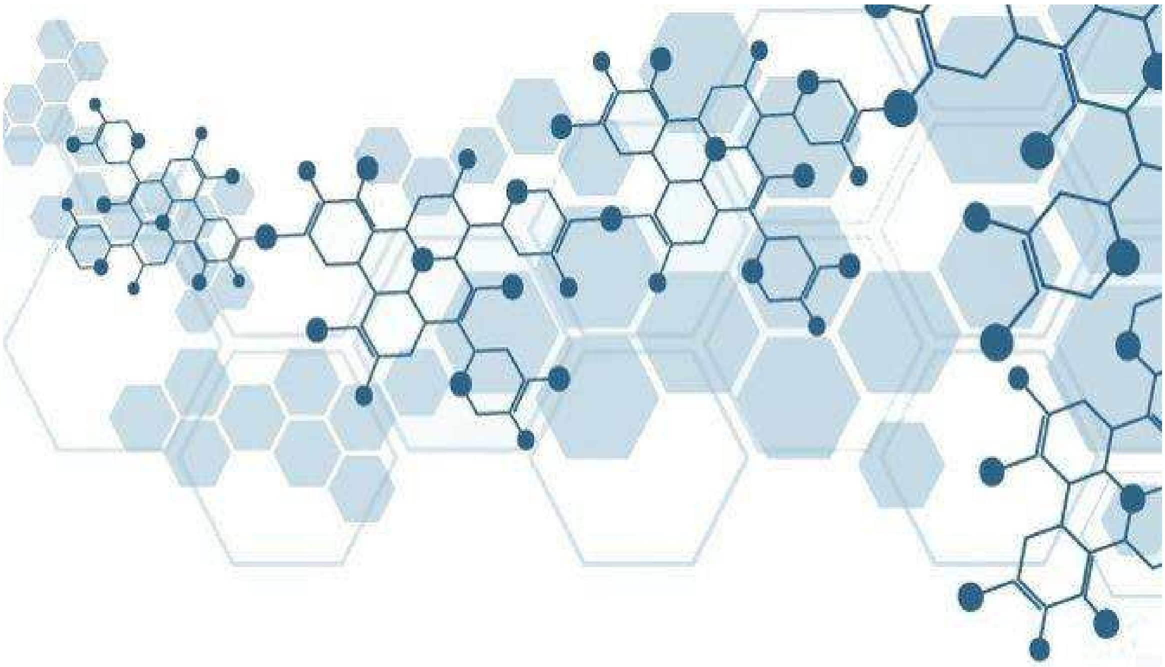
Oven: 120 °C; Injector: 150 °C; Detector: 150 °C

Concentration (PPM)	Peak Area
0	0
100	94772
200	158549
300	240095
400	319838
500	415942
600	503283
700	600224
1000	931641



Peak Area
y = 876.2x
R² = 0.9909
1000000
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
0
100
200
300
400
500
600
700
800
900
1000
1100
Concⁿ(PPM)

List of Publications



List of Publications

1. Ankit Kumar, J.P. Chakraborty & Rupesh Singh (2016): Bio-oil: the future of hydrogen generation, Biofuels, ISSN: 1759-7277. ***I.F. 1.497***

2. Ankit Kumar, Rupesh Singh, & A. S. K. Sinha, 2019: Catalyst modification strategies to enhance the catalyst activity and stability during steam reforming of acetic acid for Hydrogen production. Int J Hydrogen Energy 44 (2019) 12983 - 13010. ***I.F. 4.939***

3. Ankit Kumar, A. S. K. Sinha, 2020: Comparative study of hydrogen production from steam reforming of acetic acid over synthesized catalysts via MOF and wet impregnation methods. Int J Hydrogen Energy. 45 (2020) 11512 -11526. ***I.F. 4.939***

4. Ankit Kumar, A. S. K. Sinha, 2020: Hydrogen production from acetic acid steam reforming over nickel based catalyst synthesized via MOF. **Accepted in Int J Hydrogen Energy.** ***I.F. 4.939***

5. Ankit Kumar, A. S. K. Sinha, Hydrogen production from Acetic acid steam reforming over MOFs derived Ni-based catalysts: Effect of Ni loading on catalytic activity. ***(Manuscript under preparation)***