

---

## References

- [1] A Chow and M L Wyszynski, 'Thermodynamic Modeling of Complete Engine Systems-a Review', *Journal of Automobile Engineering*, **1999**, 4, 213- 403.
- [2] A. Majewski and M. K. Khair, Diesel emissions and their control, *SAE International*, **2006** ISBN of 978-0-7680-0674-2.
- [3] A. Majhi , V. S. Kukerti , Y. K. Sharma , R. Khanna & A. Datta. The Detection of Kerosene as an Adulterant in Gasoline, *Petroleum Science and Technology*, **2012**, 30:3, 271-277, DOI: 10.1080/10916466.2010.481653.
- [4] A. Majhi, Y. K. Sharma, D. V. Naik & R. Chauhan, The Production and Evaluation of Bio-oil Obtained from the Jatropha Curcas Cake, *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, **2015**, 37 (16) 1782-1789, DOI: 10.1080/15567036.2011.645120.
- [5] Abdi Nemera Eman & Shri Chand, Kinetic study of alkylation of benzene with ethanol over bimetallic modified HZSM-5 zeolite catalyst and effects of percentage metal loading, *Catalysis, Structure & Reactivity*, **2016**, 2:1-4, 13-24, DOI: 10.1080/2055074X.2016.1198545.
- [6] Abdi Nemera Eman, Shri Chand, Alkylation of benzene with ethanol over modified HZSM-5 zeolite catalysts. *Appl Petrochem Res*, **2015**, 5:121–134, DOI 10.1007/s13203-015-0100-7.
- [7] Abu-Jrai, A. Tsolakis, K. Theinnoi, R. Cracknell, A. Megaritis, M. L. Wyszynski and S. E. Golunski, Effect of Gas-to-Liquid Diesel Fuels on Combustion Characteristics, Engine Emissions, and Exhaust Gas Fuel Reforming. *Comparative Study, Energy Fuels*. **2006**, 20(6), 2377–2384.
- [8] Agustín Bueno-López, Dolores Lozano-Castelló<sup>a,b</sup>, Alan J. McCue<sup>b</sup>, James A. Anderson, 'NO<sub>x</sub> storage and reduction over copper-based catalysts. part 3: Simultaneous NO<sub>x</sub> and soot removal Agustín', *Applied Catalysis B: Environmental*, **2016**, 198, 266–275.
- [9] Ahmad M. Abu-Jrai, Ala'a H. Al-Muhtaseb, Ahmad O. Hasan, Combustion, performance, and selective catalytic reduction of NO<sub>x</sub> for a diesel engine operated with combined tri fuel (H<sub>2</sub>, CH<sub>4</sub>, and conventional diesel), *Energy*. **2017**, 119, 901-910.
- [10] Anders Westlund, 'Fast Physical Prediction of NO and Soot in Diesel Engines', *SAE International paper No. 2009-01-1121*, 2009.
- [11] Anjie Fu, Anxiang Guan, Dongyan Yu, Siyu Xia, Fangfang Gao, Xiaoshan Zhang, Liya Zhou, Yinghao Li, Rongguan Li, Synthesis, structure, and luminescence properties of a novel double-perovskite Sr<sub>2</sub>LaNbO<sub>6</sub>:Mn<sup>4+</sup> phosphor, *Materials Research Bulletin*. **2017**, 88, 258-265.

## REFERENCES

---

- [12] Anke Schön, Christophe Dujardin, Jean-Philippe Dacquin, Pascal Granger, Enhancing catalytic activity of perovskite-based catalysts in three-way catalysis by surface composition optimisation, *Catal. Today* **2015**, 258, 543-548.
- [13] Anupama Mishra & R. Prasad, Preparation and Application of Perovskite Catalysts for Diesel Soot Emissions Control: An Overview, *Catalysis Reviews: Science and Engineering*. **2014**, 56:1, 57-81, DOI: 10.1080/01614940.2014.866438.
- [14] Arakshita Majhi , Y.K. Sharma, D.V. Naik, Blending optimization of Hempel distilled bio-oil with commercial diesel, *Fuel*, **2012**, 96, 264–269.
- [15] Asad Naeem Shah, Yunshan Ge, Jianwei Tan, Zhihua Liu, Chao He, Tao Zeng, Characterization of polycyclic aromatic hydrocarbon emissions from diesel engine retrofitted with selective catalytic reduction and continuously regenerating trap, *Journal of Environmental Sciences*. **2012**, 24, 1449-1456.
- [16] Atribak, A. Bueno-López and A. García-García, Combined removal of diesel soot particulates and NOX over CeO<sub>2</sub>-ZrO<sub>2</sub> mixed oxides, *J. Catal.* **2008**, 259, 123–132.
- [17] Bergin MH, Tripathi SN, Jai Devi J, Gupta T, Mckenzie M, Rana KS, Shafer MM, Villalobos AM, Schauer JJ. The discoloration of the Taj Mahal due to particulate carbon and dust deposition. *Environ. Sci. Technol.*, **2015**, 49, 2, 808-812
- [18] B. J. Cooper and J. E. Thoss, SAE paper no. 890404, 1989. 10 B. A. A. L. Van Setten, M. Makkee and J. A. Moulijn, Science and technology of catalytic diesel particulate filters, *Catal. Rev.: Sci. Eng.* **2001**, 43, 489–564.
- [19] B. Kittelson, B. R. Graskow, I. S. Abdul-khalek, M. R. Ahmadi and J. E. Morris, Characterization of exhaust particulate emissions from a sparkignition engine, *SAE Paper*. **1998**, DOI: 10.4271/980528.
- [20] B. Mahr, Future and potential of diesel injection systems, in: THIESEL 2002 Conference on Thermo- and Fluid- Dynamic Processes in Diesel Engines, *Book of Proceedings*. **2002**, pp. 6–17.
- [21] B. R. Stanmore, J. F. Brillhac and P. Gilot, The oxidation of soot: a review of experiments, mechanisms and models, *Carbon*. **2001**, 39, 2247-2268.
- [22] B. Viswanathan, ‘CO Oxidation and NO Reduction on Perovskite Oxides’, *Catalysis Reviews*, 1992, 34: 4, 337- 354.
- [23] B.A.A.L. Van Setten, M. Makkee, J.A. Moulijn, ‘Science and technology of catalytic diesel particulate filters’, *Catalysis Reviews*, **2001**, 43, 489-564.
- [24] B.J. Cooper, J. E. Thoss, ‘SAE paper no. 890404’, **1989**.

## REFERENCES

---

- [25] Barry A. A. L. van Setten, Michiel Makkee & Jacob A. Moulijn, Science and technology of catalytic diesel particulate filters, *Catalysis Reviews*. **2001**, *43*, 489-564.
- [26] Behera, S.N., Sharma, M., 2011. Degradation of SO<sub>2</sub>, NO<sub>2</sub> and NH<sub>3</sub> leading to formation of secondary inorganic aerosols: An environmental chamber study. *Atmospheric Environment*, **2011**, *45*, 4015- 4024.
- [27] Behera, S.N., Sharma, M., Aneja V.P. and Balasubramanian, R. Ammonia in the Atmosphere: A Review on Emission Sources, Atmospheric Chemistry and Deposition on Terrestrial Bodies, **2013**, *Environmental Science and Pollution Research* (accepted).
- [28] Behera, S.N., Sharma, M., Nayak, P., Shukla, S.P., Gargava, P., An approach for evaluation of proposed air pollution control strategy to reduce levels of nitrogen oxides in an urban environment. *Journal of Environmental Planning and Management*, **2013**, <http://dx.doi.org/10.1080/09640568.2012.750600>.
- [29] Behera, S.N., Sharma, M., Transformation of Atmospheric Ammonia and Acid Gases into Components of PM<sub>2.5</sub>: An Environmental Chamber Study. *Environmental Science and Pollution Research* (Accepted), **2011**, DOI: 10.1007/s11356-011-0635-9.
- [30] Biamino, S., Badini C., ‘Combustion synthesis of lanthanum chromite starting from water solutions: Investigation of process mechanism by DTA-TGA-MS’, *Journal of the European Ceramic Society*, **2004**, *24*, 3021–3034.
- [31] Biamino, S.; Fino, P.; Fino, D.; Russo, N.; Badini C. Catalyzed traps for diesel soot abatement: In situ processing and deposition of perovskite catalyst. *Appl. Catal. B Environ.* **2005**, *61*, 297–305.
- [32] Bin Zhao *et al.*, Simultaneous catalytic removal of and diesel soot particulates over La<sub>1-x</sub>Ce<sub>x</sub>NiO<sub>3</sub> perovskite oxide catalysts. *Catalysis Communications*. **2009**, *10*, 1029–1033.
- [33] Bin, Z. Simultaneous removal of NO<sub>x</sub> and diesel soot particulates over nickelbased perovskite oxide catalysts, *Ph. D. thesis*, Tianjin University, **2010**.
- [34] Bueno-López, D. Lozano-Castelló, A. J. McCueb and J. A. Anderson, NO<sub>x</sub> storage and reduction over copper-based catalysts. part 3: Simultaneous NO<sub>x</sub> and soot removal Agustín, *Appl. Catal. B Environ.* **2016**, *198*, 266–275.
- [35] C. Guardiola, B. Pla, D. Blanco-Rodríguez, L. Eriksson, A computationally efficient Kalman filter based estimator for updating look-up tables applied to NO<sub>x</sub> estimation in diesel engines, *Control Engineering Practice*. **2013**, *21*, 1455-1468.
- [36] C.D. Rakopoulos, K. A. Antonopoulos, D.C. Rakopoulos and D.T. Hountalas, ‘Multi-zone Modeling of Combustion and Emissions Formation in DI Diesel

## REFERENCES

---

- Operating on Ethanol-diesel Fuel Blends', *Energy Conversion and Management*, **2008**, 49, 625-643.
- [37] C.Y. Lee, K.Y. Choi and B.-H. Ha, Catalytic decomposition of nitric oxide on copper/zeolites, *Appl. Catal. B Environ.* **1994**, 5, 7–21.
- [38] Castoldi, R. Matarrese, L. Lietti and P. Forzatti, Simultaneous removal of NO<sub>x</sub> and Soot on Pt–BaAl<sub>2</sub>O<sub>3</sub> NSR catalysts, *Appl. Catal. B Environ.* **2006**, 64, 25–34.
- [39] Chakraborty, A., S.N. Tripathi, Realtime chemical characterization of post monsoon organic aerosols in a polluted urban city: sources, composition, and comparison with other seasons, *Environmental Pollution*, **2018**, 232, 310-321. 134.
- [40] Chang-Yong Lee, Ko-Yeol Choi, Baik-Hyon Ha, 'Catalytic decomposition of nitric oxide on copper/ zeolites', *Applied Catalysis B: Environmental: B*, 1994, 5, 7-21.
- [41] Cheol-Beom Lim *et al.*, Catalytic performance of supported precious metal catalysts for the combustion of diesel particulate matter. *Catalysis Today*, **2011**, 175 106– 111.
- [42] D. B. Kittelson, Engines and nanoparticles: a review, *J. Aerosol Sci.* **1998**, 29, 575–588.
- [43] D. Fino, N. Russo, C. Badini, G. Saracco, V. Specchia, 'Effect of active species mobility on soot-combustion over Cs-V catalysts', *AIChE Journal*, **2003**, 49, 2173-2180.
- [44] D. Fino, N. Russo, G. Saracco, V. Specchia, 'Catalytic removal of NO<sub>x</sub> and diesel soot over nano structured spinel-type oxides', *Journal of Catalysis*, **2006**, 42, 38–47.
- [45] D. Fino, N. Russo, G. Saracco, V. Specchia, 'The role of suprafacial oxygen in some perovskites for the catalytic combustion of soot', *Journal of Catalysis*, **2003**, 217, 367-375.
- [46] D. Fino, P. Fino, G. Saracco, V. Specchia, 'Innovative means for the catalytic regeneration of particulate traps for diesel exhaust cleaning', *Chemical Engineering Science*, **2003**, 58, 951-958.
- [47] D. Fino, P. Fino, G. Saracco, V. Specchia, 'Studies on kinetics and reactions mechanism of La<sub>2-x</sub>K<sub>x</sub>Cu<sub>1-y</sub>V<sub>y</sub>O<sub>4</sub> layered perovskites for the combined removal of diesel particulate and NO<sub>x</sub>', *Applied Catalysis B: Environmental*, **2003**, 43, 243-259.

## REFERENCES

---

- [48] D. Mescia, J.C. Caroca, N. Russo, N. Labhsetwar, D. Fino, G. Saracco, V. Specchia., 'Towards a single brick solution for the abatement of NO<sub>x</sub> and soot from diesel engine exhausts, *Catalysis Today*, **2008**, 137, 300–305.
- [49] D. R. Tree and K. I. Svensson, Soot processes in compression ignition engines, *Prog. Energy Combust. Sci.* **2007**, 33, 272–309.
- [50] D. Rakopoulos, K. A. Antonopoulos, D. C. Rakopoulos and D. T. Hountalas, Multi-zone Modeling of Combustion and Emissions Formation in DI Diesel Operating on Ethanol-diesel Fuel Blends, *Energy Convers. Manage.*, **2008**, 49, 625–643.
- [51] D.H. Qi, K. Yang, D. Zhang, B. Chen, Combustion and emission characteristics of diesel-tung oil-ethanol blended fuels used in a CRDI diesel engine with different injection strategies, *Applied Thermal Engineering*. **2017**, 111, 927-935.
- [52] Dae-Won Lee, Seung-Jin Song, Kwan-Young Lee, Reduction of lean NO<sub>2</sub> with diesel soot over metal-exchanged ZSM5, perovskite and  $\gamma$ -alumina catalysts, *Korean Journal of Chemical Engineering*, **2010**, 27, 452–458.
- [53] Damien Aubagnac-Karkar, Jean-Baptiste Michel, Olivier Colin, Pauline E. Vervisch-Kljakic, Nasser Darabiha, Sectional soot model coupled to tabulated chemistry for Diesel RANS simulations, *Combustion and Flame*. **2015**, 162, 3081-3099.
- [54] David B. Kittelson, 'Engines and nanoparticles: a review', *Journal of Aerosol Science*, **1998**, 29, 575–588.
- [55] David E. Smith, Henning Lohse-Busch and David K. Irick, 'A Preliminary Investigation into the Mitigation of Plug-in Hybrid Electric Vehicle Tailpipe Emissions Through Supervisory Control Methods Part 1: Analytical Development of Energy Management Strategies', *SAE International paper No. 2010-01-1266*, **2010**.
- [56] Debora Fino, Paolo Fino, Guido Saracco, Vito Specchia, Studies on kinetics and reactions mechanism of La<sub>2-x</sub>K<sub>x</sub>Cu<sub>1-y</sub>V<sub>y</sub>O<sub>4</sub> layered perovskites for the combined removal of diesel particulate and NO<sub>x</sub>, *Appl. Catal. B Environ.* **2003**, 43, 243-259.
- [57] Dey, S., Dhal, G.C., Mohan, D., Prasad, R. Effect of Preparation Conditions on the Catalytic Activity of CuMnO<sub>x</sub> Catalysts for CO Oxidation. *Bulletin of Chemical Reaction Engineering & Catalysis*, **2017**, 12 (3): 431-451 doi:10.9767/bcrec.12.3.900.437-451.
- [58] Dey, S., Dhal, G.C., Mohan, D., Prasad, R. Study of Hopcalite (CuMnO<sub>x</sub>) Catalysts Prepared through A Novel Route for the Oxidation of Carbon Monoxide at

## REFERENCES

---

- Low Temperature. *Bulletin of Chemical Reaction Engineering & Catalysis*, **2017**, 12 (3): 393-407, doi:10.9767/bcrec.12.3.882.393-407.
- [59] Dey, S., Dhal, G.C., Prasad, R., Mohan, D. Effects of Doping on the Performance of CuMnOx Catalyst for CO Oxidation. *Bulletin of Chemical Reaction Engineering & Catalysis*, **2017**, 12 (3): 370-383, doi:10.9767/bcrec.12.3.901.370-383.
- [60] E.D. Banús, V.G. Milt, E.E. Miró, M.A. Ulla, 'Catalytic coating synthesized onto cordierite monolith walls. Its application to diesel soot combustion', *Applied Catalysis B: Environmental*, **2013**, 132, 479-486.
- [61] Edgardo Coda Zabetta and Pia Kilpinen, 'Improved NOx Submodel for In-Cylinder CFD Simulation and Low-and Medium –Speed Compression Ignition Engines', *Energy & Fuels*, **2001**, 15, 1425-1433.
- [62] Ehrburger, J. F. Brilhac, Y. Drouillot, V. Logie and P. Gilot, Reactivity of Soot With Nitrogen Oxides in Exhaust Stream, *SAE Paper*.**2002**, DOI: 10.4271/2002-01-1683.
- [63] Emission Estimation Technique Manual for Combustion Engines Version 2.2, *National Pollutant Inventory*, **2002**.
- [64] Evans, D. J. & Pickett C. J., Chemistry and the hydrogenases. *Chem. Soc. Rev.* **2003**, 32, 268–275.
- [65] F. Payri. Author links open the author workspace.J. Benajes, A phenomenological combustion model for direct-injection, compression-ignition engines, *Applied Mathematical Modelling*. **1988**, 12, 293-304.
- [66] FANG Ping *et al.*, Catalytic combustion study of soot on Ce<sub>0.7</sub>Zr<sub>0.3</sub>O<sub>2</sub> solid solution. *Journal of Rare Earths*. **2008**, Vol. 26, No. 2, Apr., p. 250.
- [67] Faris A. J. Al-Doghachi and Yun Hin Taufiq-Yap, Syngas production from the CO<sub>2</sub> reforming of methane over Co/Mg<sub>1-x</sub>Ni<sub>x</sub>O catalysts. *J. Chem. Sci.* **2017**, 129 (11), pp. 1781–1786. <https://doi.org/10.1007/s12039-017-1396-x>.
- [68] Faris A. J. Al-Doghachi, Umer Rashidc and Yun Hin Taufiq-Yap., Investigation of Ce(III) promoter effects on the tri-metallic Pt, Pd, Ni/MgO catalyst in dry-reforming of methane. *RSC Adv.*, **2016**, 6, 10372-10384.
- [69] Fatemeh Rahmaninejada, Vasudeo S. Gavaskarb, Javad Abbasiana, 'Dry regenerable CuO-Al<sub>2</sub>O<sub>3</sub> catalyst for simultaneous removal of SO<sub>x</sub> and NO<sub>x</sub> from flue gas', *Applied Catalysis B: Environmental*, **2012**, 120, 297–303.

## REFERENCES

---

- [70] Feg-Wen Chang, Wen-Yao Kuo, Hsien-Chang Yang, Preparation of Cr<sub>2</sub>O<sub>3</sub>-promoted copper catalysts on rice husk ash by incipient wetness impregnation, *Applied Catalysis A: General*. **2005**, 288, 53-61.
- [71] Fei Zhao, Xiangfeng Wang, Zhiyong Wang, Ranran Peng, Changrong Xia, K<sub>2</sub>NiF<sub>4</sub> type La<sub>2-x</sub>Sr<sub>x</sub>Co<sub>0.8</sub>Ni<sub>0.2</sub>O<sub>4</sub> as the cathodes for solid oxide fuel cells, *Solid State Ionics*. **2008**, 179, 1450-1453.
- [72] Feng Bin, Chonglin Song, Gang Lv, Jinou Song, Cairong Gong, and Qifei Huang, La<sub>1-x</sub>K<sub>x</sub>CoO<sub>3</sub> and LaCo<sub>1-y</sub>Fe<sub>y</sub>O<sub>3</sub> Perovskite Oxides: Preparation, Characterization, and Catalytic Performance in the Simultaneous Removal of NO<sub>x</sub> and Diesel Soot, 2011, *Ind. Eng. Chem. Res.* **2011**, 50 (11), pp 6660–6667.
- [73] Feng Tao, Valeri I. Golovichev and Jerzy Chomalik, ‘A Phenomenological Model for the Prediction of Soot Formation in Diesel Spray Combustion, *Combustion and Flame*, **2004**, 136, 270-282.
- [74] Fino, D., Russo, N., Cauda, E., Saracco, G., Specchia V., ‘La-Li-Cr perovskite catalysts for diesel particulate combustion’, *Catalysis Today*, **2006**, 114, 31–39.
- [75] Fino, D.; Fino, P.; Saracco, G.; Specchia, V. Studies on kinetics and reactions mechanism of La<sub>2-x</sub>K<sub>x</sub>Cu<sub>1-y</sub>V<sub>y</sub>O<sub>4</sub> layered perovskites for the combined removal of diesel particulate and Nox. *Appl. Catal. B*, **2003**, 43, 243–259.
- [76] Fino, D.; Russo, N.; Saracco, G.; Specchia, V. Removal of NO<sub>x</sub> and diesel soot over catalytic traps based on spinel-type oxides. *Powder Technol.* **2008**, 180, 74–78.
- [77] Fino, D.; Russo, N.; Saracco, G.; Specchia, V. The role of suprafacial oxygen in some perovskites for the catalytic combustion of soot. *J. Catal.* **2003**, 217, 367–375.
- [78] G. H. Abd-Alla, Using exhaust gas recirculation in internal combustion engines: a review, *Energy Convers. Manage.* **2002**, 43, 1027–1042.
- [79] G. Perin, J. Fabro, M. Guiotto, Q. Xin, M.M. Natile, P. Cool, P. Canu, A. Glisenti, Cu@LaNiO<sub>3</sub> based nanocomposites in TWC applications, *Appl. Catal. B Environ.* **2017**, 209, 214-227.
- [80] G. Saracco, F. Geobaldo, G. Baldi, ‘Methane combustion on Mg-doped LaMnO<sub>3</sub> perovskite catalysts’, *Applied Catalysis B: Environmental*, **1999**, 20, 277–288.
- [81] G. Tejuca, J.L.G. Fierro, J.M.D. Tascón, ‘Structure and Reactivity of Perovskite-Type Oxides’, *Advances in Catalysis*, **1989**, 36, 237–328.

## REFERENCES

---

- [82] Ganesh Chandra Dhal, Devendra Mohan, R. Prasad, Subhashish Dey, Simultaneous abatement of diesel soot and NO<sub>x</sub> emissions by effective catalysts at low temperature: An overview, *Catalysis Reviews* (Accepted).
- [83] Ganesh Chandra Dhal, Devendra Mohana and R. Prasad, Preparation and application of effective different catalysts for simultaneous control of diesel soot and NO<sub>x</sub> emissions: An overview, *Catal. Sci. Technol.*, **2017**, 7, 1803-1825.
- [84] Ganesh Chandra Dhal, Subhashish Dey, Devendra Mohan, Ram Prasad, Simultaneous Control of NO<sub>x</sub>-Soot by Substitutions of Ag and K on Perovskite (LaMnO<sub>3</sub>) Catalyst, **2018**, <https://doi.org/10.9767/bcrec.13.1.1152.144-154>.
- [85] Ganesh Chandra Dhal, Subhashish Dey, Devendra Mohan, Ram Prasad, Solution Combustion Synthesis of Perovskite-type Catalysts for Diesel Engine Exhaust gas Purification. *Materials Today: Proceedings*, **2017**, 4, 10489–10493.
- [86] Gang Liu and Pu-Xian Gao, A review of NO<sub>x</sub> storage/reduction catalysts: mechanism, materials and degradation studies, *Catal. Sci. Technol.*, **2011**, 1, 552-568.
- [87] Gill S.S., Turner D., Tsolakis A., York A.P.E., ‘Controlling Soot Formation with Filtered EGR for Diesel and Biodiesel Fuelled Engines’, *Environmental Science & Technology*, **2012**, 46, 4215-4222.
- [88] Gill S.S., Turner D., Tsolakis A., York A.P.E., ‘Understanding the Role of Filtered EGR on PM Emissions’, *JSAE Technical Paper No. 20119248*.
- [89] Gill S.S.; Chatha G.S., Tsolakis A., Analysis of reformed EGR on the performance of a diesel particulate filter, *International Journal of Hydrogen Energy*, **2011**, 36, 10089- 10099.
- [90] Gokul Vishwanathan & Rolf D. Reitz ,Development of a Practical Soot Modeling Approach and Its Application to Low-Temperature Diesel Combustion, *Journal Combustion Science and Technology*. **2010**, 182, 2010.
- [91] Gurjar, B., Sharma, R., Ghuge, S., Wate, S., and Agrawal, R., Individual and Societal Risk Assessment for a Petroleum Oil Storage Terminal. *J. Hazard. Toxic Radioactive Waste*, **2015**, 10.1061/(ASCE) HZ.2153-5515.0000277, 04015003. 5.
- [92] H. Pakraves, I. Aksikas, M. Votsmeier, S. Dubljevic, R.E. Hayes, F. Forbes, Characteristics-based model predictive control of selective catalytic reduction in diesel-powered vehicles, *Journal of Process Control*. **2016**, 47, 98-110.
- [93] H. Richter and J. B. Howard, Formation of polycyclic aromatic hydrocarbons and their growth to soot - a review of chemical reaction pathways, *Prog. Energy Combust. Sci.* **2000**, 26, 565–608.

## REFERENCES

---

- [94] H. Zhao, J. Hu and N. Ladommatos, In-cylinder studies of the effects of CO<sub>2</sub> in exhaust gas recirculation on diesel combustion and emissions, *Proc. Inst. Mech. Eng., Part D*. **2000**, *214*, 405–419.
- [95] He Lin *et al.*, Soot oxidation and NO<sub>x</sub> reduction over BaAl<sub>2</sub>O<sub>4</sub> catalyst. *Combustion and Flame*. **2009**, *156*, 2063–2070.
- [96] Holben, B.N., S.N. Tripathi, An overview of meso-scale aerosol processes, comparison and validation studies from DRAGON networks, *Atmospheric Chemistry and Physics*, **2017**, doi:10.5194/acp-2016-1182. 131.
- [97] Hong Liang, Yanxia Hong, Changquan Zhu, Shuhua Li, Yao Chen, Zili Liu, Daiqi Ye, Influence of partial Mn-substitution on surface oxygen species of LaCoO<sub>3</sub> catalysts, *Catal Today*. **2013**, *201*, 98-102.
- [98] Hong Wang, Jian Liu, Zhen Zhao, Yuechang Wei, Chunming Xu, Comparative study of nanometric Co-, Mn- and Fe-based perovskite-type complex oxide catalysts for the simultaneous elimination of soot and NO<sub>x</sub> from diesel engine exhaust, *Catal. Today*. **2012**, *184*, 288–300.
- [99] Hong Wang, Zhen Zhao, Peng Liang, Jian Liu, ‘Highly active La<sub>1-x</sub>K<sub>x</sub>CoO<sub>3</sub> Perovskite-type complex oxide catalysts for the simultaneous removal of diesel soot and nitrogen oxides under loose contact conditions’, *Catalysis Letters*, **2008**, *124*, 91–99.
- [100] I. Atribak, A. Bueno-López, ‘A. García-García, Combined removal of diesel soot particulates and NO<sub>x</sub> over CeO<sub>2</sub>–ZrO<sub>2</sub> mixed oxides. *Journal of Catalysis*, **2008**, *259*, 123–132.
- [101] I.S. Pieta, M. García-Diéguez, Concepcion Herrera, L.J. Alemany, ‘In situ DRIFT–TRM study of simultaneous NO<sub>x</sub> and soot removal over Pt–Ba and Pt–K NSR catalysts’, *Journal of Catalysis*, **2010**, *270*, 256–267.
- [102] Ibrahim Aslan Resitoglu, Ali Keskin, Hydrogen applications in selective catalytic reduction of NO<sub>x</sub> emissions from diesel engines, *International Journal of Hydrogen Energy*. **2017**, <https://doi.org/10.1016/j.ijhydene.2017.02.011>.
- [103] J. B. Heywood, Internal combustion engine fundamentals, McGraw-Hill, **1988**.
- [104] J. P. A. Neeft, O. P. Van Pruissen, M. Makkee and J. A. Moulijn, Catalysts for the oxidation of soot from diesel exhaust gases II. Contact between soot and catalyst under practical conditions, *Appl. Catal. B Environ.* **1997**, *12*, 21–31.
- [105] J.J. Chong, A. Tsolakis, S.S. Gill, K. Theinnoi, S.E. Golunski, ‘Enhancing the NO<sub>2</sub>/NO<sub>x</sub> ratio in compression ignition engines by hydrogen and reformat combustion, for improved after-treatment performance’, *International Journal of Hydrogen Energy*, **2010**, *35*, 8723-8732.

## REFERENCES

---

- [106] Jeguirim, V. Tschamber, J. F. Brilhac and P. Ehrburger, Oxidation mechanism of carbon black by NO<sub>2</sub>: Effect of water vapour, *Fuel*. **2005**, 84, 1949–1956.
- [107] Jerry C. Summers, Stéphane Van Houtte, Dimitrios Psaras, ‘Simultaneous control of particulate and NO<sub>x</sub>, emissions from diesel engines’, *Applied Catalysis B: Environmental*, **1996**, 10, 139- 156.
- [108] Jian Liu, Jie Xu, Zhen Zhao, Chun-ming Xu, Ai-jun Duan, ‘Simultaneous removal of NO<sub>x</sub> and diesel soot over nanometer Ln-Na-Cu-O perovskite-like complex oxide catalysts’, *Applied Catalysis B: Environmental*, **2008**, 78, 61–72.
- [109] Jian Liu, Jie Xu, Zhen Zhao, Yanni Jing, ‘A novel four-way combining catalysts for simultaneous removal of exhaust pollutants from diesel engine’, *Journal of Environmental Sciences*, **2010**, 22, 1104–1109.
- [110] Jian Liu, Zhen Zhao, Chunming Xu, Aijun Duan and Guiyuan Jiang, ‘Simultaneous removal of soot and NO<sub>x</sub> over the (La<sub>1.7</sub>Rb<sub>0.3</sub>CuO<sub>4</sub>)<sub>x</sub>/nmCeO<sub>2</sub> nanocomposite catalysts’, *Ind. Eng. Chem. Res.*, **2010**, 49, 3112–3119.
- [111] Jian Liu, Zhen Zhao, Chun-ming Xu, Ai-jun Duan, Tao Meng, Xiao-jun Bao, ‘Simultaneous removal of NO<sub>x</sub> and diesel soot particulates over nano-metric La<sub>2-x</sub>K<sub>x</sub>CuO<sub>4</sub> complex oxide catalysts’, *Catalysis Today*, **2007**, 119 267–272.
- [112] Jianan Xu, Guanzhong Lu, Yun Guo, Yanglong Guo, Xue-Qing Gong, A highly effective catalyst of Co-CeO<sub>2</sub> for the oxidation of diesel soot: The excellent NO oxidation activity and NO<sub>x</sub> storage capacity, *Applied Catalysis A: General*. **2017**, 535, 1-8.
- [113] Jianqin Fu, Jun Shu, Zhichao Zhao, Jingping Liu, Feng Zhou, Comparative analysis of soot formation processes of diesel and ABE (Acetone-Butanol-Ethanol) based on CFD coupling with phenomenological soot model, *Fuel*. **2017**, 380-392.
- [114] Jie Ding, Qin Zhong, Shule Zhang, Catalytic efficiency of iron oxides in decomposition of H<sub>2</sub>O<sub>2</sub> for simultaneous NO<sub>x</sub> and SO<sub>2</sub> removal: Effect of calcination temperature, *Journal of Molecular Catalysis A: Chemical*. **2014**, 393, 222-231.
- [115] Jimenez R, Zamora R, Pecchi G, Garcia X, Gordon AL, Effect of Ca-substitution in La<sub>1-x</sub>Ca<sub>x</sub>FeO<sub>3</sub> perovskites on the catalytic activity for soot combustion, *Fuel Processing Techno*. **2010**, 91, 546-549.
- [116] John B. Heywood, Pollutant Formation and Control in Spark-Ignition Engines, *Energy and Combustion Science (Student Edition One)*, **1979**, 229–258.
- [117] Johnson, Diesel Engine Emissions and Their Control, **2008**, 53.

## REFERENCES

---

- [118] Jun Kagawa, 'Health effects of diesel exhaust emissions-a mixture of air pollutants of worldwide concern', *Toxicology*, **2002**, 181, 349–353.
- [119] K. Gallucci, P.L. Villa, G. Groppi, N. Usberti, G. Marra, 'Catalytic combustion of methane on BaZr<sub>(1-x)</sub>Me<sub>x</sub>O<sub>3</sub> perovskites synthesised by a modified citrate method', *Catalysis Today*, **2012**, 151, 236–242.
- [120] K. Hamamoto, Y. Fujishiro and M. Awano, Simultaneous removal of nitrogen oxides and diesel soot particulate in nano-structured electrochemical reactor, *Solid State Ionics*. **2006**, 177, 2297–2300.
- [121] K. Li, J. Peng, G.W. Irwin, L. Piroddi, W. Spinelli, Estimation Of Nox Emissions In Thermal Power Plants Using Eng-Genes Neural Networks Ifac, *Proceedings Volumes*, **2005**, 38, 115-120.
- [122] K. S. Martirosyan, K. Chen and D. Luss, Behavior features of soot combustion in diesel particulate filter, *Chem. Eng. Sci.* **2010**, 65, 42–46.
- [123] K. Theinnoi, S. Sitshebo, V. Houel, R. R. Rajaram and A. Tsolakis, Hydrogen Promotion of Low-Temperature Passive Hydrocarbon-Selective Catalytic Reduction (SCR) over a Silver Catalyst, *Energy Fuels*. **2008**, 22(6), 4109–4114.
- [124] K. Wang, L. Qian, L. Zhang, H. Liu and Z. Yan, Simultaneous removal of NO<sub>x</sub> and soot particulates over La<sub>0.7</sub>Ag<sub>0.3</sub>MnO<sub>3</sub> perovskite oxide catalysts, *Catal. Today*. **2010**, 158, 423–426.
- [125] K. Yoshida, S. Makino, S. Sumiya, G. Muramatsu, R. Helferich, 'Simultaneous Reduction of NO<sub>x</sub> and Particulate Emissions from Diesel Engine Exhaust', *SAE paper no.* 892046, **1989**.
- [126] Kar Mun Pang, Nikolas Karvounis, Jens Honore Walther, Jesper Schramm, Numerical investigation of soot formation and oxidation processes under large two-stroke marine diesel engine-like conditions using integrated CFD-chemical kinetics, *Applied Energy*. **2016**, 169, 874-887.
- [127] Karthik Nithyanandan, Yilu Lin, Robert Donahue, Xiangyu Meng, Jiayang Zhang, Chia-fon F. Lee, Characterization of soot from diesel-CNG dual-fuel combustion in a CI engine, *Fuel*. **2016**, 145-152.
- [128] Kass, J. Thomas, S. Lewis, J. Storey, N. Domingo, R. Graves and A. Panov, Selective catalytic reduction of diesel engine NO<sub>x</sub> emissions using ethanol as a reductant, *Oak Ridge National Laboratory and Caterpillar, Inc.*, **2003**.
- [129] Kazuhiro Yamamoto, Tatsuya Sakai, Simulation of continuously regenerating trap with catalyzed DPF, *Catalysis Today*. **2015**, 242, 357-362.

## REFERENCES

---

- [130] Ke Wang, Ling Qian, Lei Zhang, Huanrong Liu, Zifeng Yan, 'Simultaneous removal of NO<sub>x</sub> and soot particulates over La<sub>0.7</sub>Ag<sub>0.3</sub>MnO<sub>3</sub> perovskite oxide catalysts', *Catalysis Today*, **2010**, 158, 423–426.
- [131] Kitano, I. Dakata and R. Clark, Effects of GTL fuel properties on DI diesel combustion, *SAE paper*, **2005**, DOI: 10.4271/2005-01-3763.
- [132] Koichi Hamamoto, Yoshinobu Fujishiro, Masanobu Awano, 'Simultaneous removal of nitrogen oxides and diesel soot particulate in nano-structured electrochemical reactor', *Solid State Ionics*, **2006**, 177, 2297–2300.
- [133] Konwar R. J. and De M., Development of templated carbon by carbonisation of sucrose–zeolite composite for hydrogen storage, *Int. J. Energy Res.*, **2015**, 39, 223–233, doi: 10.1002/er.3232.
- [134] L. Farias, M. G. Carvalho and U. O. Koylu, Radiative heat transfer in soot containing combustion systems with aggregation, *Int. J. Heat Mass Transfer*. **1998**, 41, 2581–2587.
- [135] Ladommatos, S. Abdelhalim, H. Zhao and Z. Hu, The Dilution, Chemical, and Thermal Effects of Exhaust Gas Recirculation on Diesel Engine Emissions - Part 2: Effects of Carbon Dioxide, *SAE Technical Paper*, **1996**, DOI: 10.4271/961167.
- [136] Lapuerta, O. Armas and J. Rodríguez-Fernández, Effect of biodiesel fuels on diesel engine emissions, *Prog. Energy Combust. Sci.* **2008**, 34, 198–223.
- [137] Lavoie G. A., Heywood J. B., Keck J. C. 'Experimental and theoretical study of nitric oxide formation in internal combustion engines', *Combustion Sci. Technol.* **1970**, 1, 313.
- [138] Lei Liu, Zhijun Li, Shiyu Liu, Boxi Shen, Effect of exhaust gases of Exhaust Gas Recirculation (EGR) coupling lean-burn gasoline engine on NO<sub>x</sub> purification of Lean NO<sub>x</sub> trap (LNT). *Mechanical Systems and Signal Processing*. **2017**, 87, 195-213.
- [139] LI Qian *et al.*, Promotional effects of cerium doping and NO<sub>x</sub> on the catalytic soot combustion over MnMgAlO hydrotalcite-based mixed oxides. *Journal Of Rare Earths*, Vol. 32, No. 2, Feb. **2014**, P. 176.
- [140] Li, Z.; Meng, M.; Dai, F.; Hu, T.; Xie, Y.; Zhang, J. Performance of K and Ni substituted La<sub>1-x</sub>K<sub>x</sub>Co<sub>1-y</sub>Ni<sub>y</sub>O<sub>3-δ</sub> perovskite catalysts used for soot combustion, NO<sub>x</sub> storage and simultaneous NO<sub>x</sub>-soot removal. *Fuel*, **2012**, 93, 606–610.
- [141] Li, Z.; Meng, M.; Li, Q.; Xie, Y.; Hu, T.; Zhang, J. Fe-substituted nanometric La<sub>0.9</sub>K<sub>0.1</sub>Co<sub>1-x</sub>Fe<sub>x</sub>O<sub>3</sub> perovskite catalysts used for soot combustion, NO<sub>x</sub> storage and simultaneous catalytic removal of soot and NO<sub>x</sub>. *Chem. Eng. J.*, **2010**, 164, 98–105.

## REFERENCES

---

- [142] Li, Z.; Meng, M.; Zha, Y.; Dai, F.; Hu, T.; Xie, Y.; Zhang, J. Highly efficient multifunctional dually-substituted perovskite catalysts  $\text{La}_{1-x}\text{K}_x\text{Co}_{1-y}\text{Cu}_y\text{O}_3$  used for soot combustion,  $\text{NO}_x$  storage and simultaneous  $\text{NO}_x$ -soot removal. *Appl Catal B Environ*, **2012**, (121–122), 65–74.
- [143] Lidia Castoldi, Eleonora Aneggib, Roberto Matarrese, Rossella Bonzia, Jordi Llorcac, Alessandro Trovarellib, Luca Liattia, Silver-based catalytic materials for the simultaneous removal of soot and  $\text{NO}_x$ , *Catal Today*. **2015**, 258, 405–415.
- [144] Lidia Castoldi, Nancy Artioli, Roberto Matarrese, Luca Lietti, Pio Forzatti, Study of DPNR catalysts for combined soot oxidation and  $\text{NO}_x$  reduction, *Catal. Today*. **2010**, 157, 384–389.
- [145] Lidia Castoldi, Roberto Matarrese, Luca Lietti, Pio Forzatti, Simultaneous removal of  $\text{NO}_x$  and Soot on  $\text{Pt-BaAl}_2\text{O}_3$  NSR catalysts. *Applied Catalysis B: Environmental*, **2006**, 64, 25–34.
- [146] Ling Zhu, Junjie Yu, Xuezhong Wang, ‘Oxidation treatment of diesel soot particulate on  $\text{Ce}_x\text{Zr}_{1-x}\text{O}_2$ ’, *Journal of Hazardous Materials*, **2007**, 140, 205–210.
- [147] Liu, J.; Xu, J.; Zhao, Z.; Duan, A.; Jiang, G.; Jing, Y. A novel four-way combining catalysts for simultaneous removal of exhaust pollutants from diesel engine. *J. Environ. Sci.* **2010**, 22 (7), 1104–1109.
- [148] Liu, J.; Zhao, Z.; Xu, C.; Duan, A., Jiang, G. Simultaneous removal of soot and  $\text{NO}_x$  over the  $(\text{La}_{1.7}\text{Rb}_{0.3}\text{CuO}_4)_x/\text{nmCeO}_2$  nanocomposite catalysts. *Ind. Eng. Chem. Res.*, **2010**, 49, 3112–3119.
- [149] Liu, Zhi-ming, Hao Zheng-ping, Guo, Yun, Zhuang, Ya-hui, Simultaneous catalytic removal of  $\text{NO}_x$  and diesel soot particulate over perovskite-type oxides and supported Ag catalysts, *Journal of Environmental Sciences*. **2002**, 14, 289–295.
- [150] M. Ambrogio, G. Saracco, V. Specchia, C. van Gulijk, M. Makkee, J.A. Moulijn, ‘On the generation of aerosol for diesel particulate filtration studies’, *Separation and Purification Technology*, **2002**, 27, 195–209.
- [151] M. Balaraju, V. Rekha, P.S. Sai Prasad, B.L.A. Prabhavathi Devi, R.B.N. Prasad, N. Lingaiah, Influence of solid acids as co-catalysts on glycerol hydrogenolysis to propylene glycol over Ru/C catalysts. *Applied Catalysis A: General*, **2009**, 354, 82–87.
- [152] M. E. Gálvez, S. Ascaso, I. Tobías, R. Moliner and M. J. Lázaro, Catalytic filters for the simultaneous removal of soot and  $\text{NO}_x$  Influence of the alumina precursor on monolith wash coating and catalytic activity, *Catal. Today*. **2012**, 191, 96–105.

## REFERENCES

---

- [153] M. Kennedy, Models of soot formation and oxidation, *Prog. Energy Combust. Sci.* **1997**, 23, 95–132.
- [154] M. L. Pisarello, V. Milt, M. A. Peralta, C. A. Querini and E. E. Miró, Simultaneous removal of soot and nitrogen oxides from diesel engine exhausts, *Catal. Today.* **2002**, 75, 465–470.
- [155] M. Malyaadri, K. Jagadeeswaraiyah, P.S. Sai Prasad, N. Lingaiah, Synthesis of glycerol carbonate by transesterification of glycerol with dimethyl carbonate over Mg/Al/Zr catalysts. *Applied Catalysis A: General*, **2011**, 401, 153–157.
- [156] M. S. Brogan, A. D. Clark and R. J. Brisley, Recent Progress in NO<sub>x</sub> Trap Technology, *SAE Paper.* **1998**, DOI: 10.4271/980933.
- [157] M. V. Twigg, Catalytic control of emissions from cars, *Catal. Today.* **2011**, 163, 33–41.
- [158] M. V. Twigg, Progress and future challenges in controlling automotive exhaust gas emissions, *Appl. Catal. B Environ.* **2007**, 70, 2–15.
- [159] M. Zheng, G. T. Reader and J. G. Hawley, Diesel engine exhaust gas recirculation -A review on advanced and novel concepts, *Energy Convers. Manage.* **2004**, 45, 883–900.
- [160] M.A. Mokhri, N.R. Abdullah, S.A. Abdullah, S. Kasalong, R. Mamat, Soot Filtration Recent Simulation Analysis in Diesel Particulate Filter (DPF), *Procedia Engineering.* **2012**, 41, 1750-1755.
- [161] M.E. Gálvez, S. Ascaso, I. Tobías, R. Moliner, M.J. Lázaro, ‘Catalytic filters for the simultaneous removal of soot and NO<sub>x</sub> Influence of the alumina precursor on monolith wash coating and catalytic activity’, *Catalysis Today*, **2012**, 191, 96–105.
- [162] M.L. Pisarello, V. Milt, M.A. Peralta, C.A. Querini, E.E. Miró, ‘Simultaneous removal of soot and nitrogen oxides from diesel engine exhausts’, *Catalysis Today*, **2002**, 75, 465–470.
- [163] Mahuya De, Deepak Kunzru, Oxidative Dehydrogenation of Propane on V<sub>2</sub>O<sub>5</sub>/ZrO<sub>2</sub> Catalyst, *Catalysis Letters*, **2004**, 96, Issue 1–2, pp 33–42.
- [164] María Elena Gálvez, Sonia Ascaso, Rafael Moliner, María Jesús Lázaro, ‘(Cu,Co,V)-KAl<sub>2</sub>O<sub>3</sub> supported catalysts for the simultaneous removal of soot and nitrogen oxides from diesel exhausts’, *Chemical Engineering Science*, **2013**, 87, 75–90.
- [165] Maricq, M.M. Chemical characterization of particulate emissions from diesel engines: a review. *Journal of Aerosol Science*, **2007**, 38, 1079–1118.

- [166] Markus Sander, Abhijeet Raj, Oliver Inderwildi, Markus Kraft, Sven Kureti, Henning Bockhorn, 'The simultaneous reduction of nitric oxide and soot in emissions from diesel engines', *CARBON*, **2009**, 47, 866–875.
- [167] Martyn V. Twigg, 'Catalytic control of emissions from cars', *Catalysis Today*, **2011**, 163, 33–41.
- [168] Masaaki Haneda, Yasutaka Tomida, Teruo Takahashi, Yousuke Azuma, Tomonari Fujimoto, Three-way catalytic performance and change in the valence state of Rh in Y- and Pr-doped Rh/ZrO<sub>2</sub> under lean/rich perturbation conditions, *Catalysis Communications*. **2017**, 90, 1-4.
- [169] McCarty, J.G., Chang, Y.-F., Wong, V.L., and Johansson, E.M., Kinetics of high temperature methane combustion by metal oxide catalysts, in "Symposium on Catalytic Combustion, San-Francisco, *American Chemical Society*, **1997**, 42, 158-162.
- [170] McCarty J.G., Wise H., Hydrogenation of surface carbon on alumina-supported nickel, *Journal of Catalysis*, **1997**, 57 (3), 406-416.
- [171] McGeehan, S. Yeh, M. Couch and A. Hinz, et al., On The Road to 2010 Emissions: Field Test Results and Analysis with DPF-SCR System and Ultra Low Sulfur Diesel Fuel, *SAE Technical Paper*. **2005**, DOI: 10.4271/2005-01-3716.
- [172] Mengmeng Li, Vencon G. Easterling, Michael P. Harold, Towards optimal operation of sequential NO<sub>x</sub> storage and reduction and selective catalytic reduction, *Appl. Catal. B Environ*. **2016**, 184, 364-380.
- [173] Michael Bowker, Abdullahi Nuhu, Jorge Soares, High activity supported gold catalysts by incipient wetness impregnation, *Catalysis Today*. **2007**, 122, 245-247.
- [174] Mishra, A. & Prasad, R. Catalysis and kinetics of diesel soot oxidation over nano-size perovskite catalyst, *Clean Techn Environ Policy*. **2017**, 19: 2405. <https://doi.org/10.1007/s10098-017-1428-8>.
- [175] Mishra, A. & Prasad, R. Development of highly efficient double-substituted perovskite catalysts for abatement of diesel soot emissions, *Clean Techn Environ Policy*, **2015**, 17: 2337. <https://doi.org/10.1007/s10098-015-0976-z>.
- [176] N. Nejar *et al.*, Bimetallic catalysts for the simultaneous removal of NO<sub>x</sub> and soot from diesel engine exhaust A preliminary study using intrinsic catalysts. *Catalysis Communications*, **2005**, 6, 263–267.
- [177] N. Russo, D. Fino, G. Saracco and V. Specchia, Studies on the redox properties of chromite perovskite catalysts for soot combustion, *J. Catal.* **2005**, 229, 459–469.

## REFERENCES

---

- [178] N. Russo, D. Fino, G. Saracco, V. Specchia, 'Promotion effect of Au on perovskite catalysts for the regeneration of diesel particulate filters', *Catalysis Today*, **2008**, 137, 306–311.
- [179] N.O. Guldal, H.E. Figen, S.Z. Baykara, Production of hydrogen from hydrogen sulfide with perovskite type catalysts: LaMO<sub>3</sub>, *Chemical Engineering Journal*. **2017**, 313, 1354-1363.
- [180] Nitin Labhsetwar, R. B. Biniwale, Rakesh Kumar, S. Rayalu, and Sukumar Devotta, Application of supported perovskite-type catalysts for vehicular emission control. *Catalysis Surveys from Asia*, **2006**, 55, DOI: 10.1007/s10563-006-9005-x.
- [181] Nunzio Russo, Debora Fino, Guido Saracco, Vito Specchia, 'Studies on the redox properties of chromite perovskite catalysts for soot combustion, *Journal of Catalysis*, **2005**, 229, 459–469.
- [182] Oliver Grondin, Laurent Thibault, Philippe Moulin, Alexander Chasse and Antonio Sciattetta, "Energy Management Strategy for Diesel Hybrid Electric Vehicle", *Vehicle Power and Propulsion Conference (VPPC)*, Chicago, IL, **2011** IEEE.
- [183] P. Balle, Henning Bockhorn, B. Geiger, T. Schröder, 'A novel laboratory bench for practical evaluation of catalysts useful for simultaneous conversion of NO<sub>x</sub> and soot in diesel exhaust', *Chemical Engineering and Processing*, **2006**, 45, 1065–1073.
- [184] P. Ciambelli, V. Palma, P. Russo, S. Vaccaro, The effect of NO on Cu/V/K/Cl catalysed soot combustion, *Appl. Catal. B Environ.* **1999**, 22, 1.
- [185] P. E. York, A. Tsolakis, K. H. L. Buschow, W. C. Robert, C. F. Merton, I. Bernard, J. K. Edward, M. Subhash and V. Patrick, *Cleaner Vehicle Emissions, Encyclopedia of Materials: Science and Technology*, **2010**.
- [186] P. Forzatti, L. Castoldi, I. Nova, L. Lietti, E. Tronconi, NO<sub>x</sub> removal catalysis under lean conditions, *Catal. Today*. **2006**, 117, 316-320.
- [187] P. Ganesan, S. Huang and B. N. Popov, Preparation and Characterization of Pt/NbTiO<sub>2</sub> Cathode Catalysts for Unitized Regenerative Fuel Cells (URFCs), *ECS Trans.* **2008**, 16, 1143–1150.
- [188] P. Marecot, A. Fackhe, L. Pirault, C. Geron, G. Mabilon, M. Prigent, J. Barbies, 'Effect of the preparation procedure on the properties of three-way automotive platinum-rhodium/ alumina-ceria catalysts', *Applied Catalysis B: Environmental*, **1994**, 5, 43-55.

## REFERENCES

---

- [189] Pabhu Ganesan, Shenyang Huang, Branko N Popov, 'Preparation and Characterization of Pt/NbTiO<sub>2</sub> Cathode Catalysts for Unitized Regenerative Fuel Cells (URFCs)', *ECS Transactions*, **2016**, 1143-1150.
- [190] Pan Wanga *et al.*, Effect of temperature on reduction of NO<sub>x</sub> and soot in diesel exhaust with perovskite-type catalysts. *Procedia Engineering*, **2011**, 16, 259 – 263.
- [191] Peng Geng, Chunde Yao, Lijiang Wei, Junheng Liu, Quangang Wang, Wang Pan, Jianyun Wang, Reduction of PM emissions from a heavy-duty diesel engine with diesel/methanol dual fuel, *Fuel*. **2014**, 123, 1-11.
- [192] Peng X., Lin H., Shangguan W., Huang Z. 'A highly efficient and porous catalyst for simultaneous removal of NO<sub>x</sub> and diesel soot', *Catalysis Communications*, **2007**, 8, 157–161.
- [193] Phillip S. Sharer, Aymeric Rousseau, Dominik Karbowski and Sylvain Pagerit, 'Plug-in Hybrid Electric Vehicle Control Strategy: Comparison between EV and Charge-Depleting Options', *SAE International paper No.* **2008-01-0460**, 2008.
- [194] Pia Kilpinen; 'Optimization of a Simplified Sub-model for NO Emission Prediction by CFD in Large 4-stroke Marine Diesel Engines', *Fuel Processing Technology*, **2010**, 91,218-228.
- [195] Ping FANG, Jiqing LU, Xiaoyan XIAO, Mengfei LUO, 'Catalytic combustion study of soot on Ce<sub>0.7</sub>Zr<sub>0.3</sub>O<sub>2</sub> solid solution', *Journal Of Rare Earths*, **2008**, 26, 250-253.
- [196] Pisarello, M.L.; Milt, V.; Peralta, M.A.; Querini, C.A.; Miro, E.E. Simultaneous removal of soot and nitrogen oxides from diesel engine exhausts. *Catal. Today*, **2002**, 75, 465–470.
- [197] P. Goyal, Sumer Budhiraja, Anikender Kumar, Impact of Air Pollutants on Atmospheric Visibility in Delhi. *International Journal of Geology, Agriculture and Environmental Sciences*, **2014**, 2, ISSN: 2348-0254.
- [198] Pradeep Doggali, S. Kusaba, Y. Teraoka, P. Chankapure, S. Rayalu, Nitin Labhsetwar, La<sub>0.9</sub>Ba<sub>0.1</sub>CoO<sub>3</sub> perovskite type catalysts for the control of CO and PM emissions. *Catalysis Communications*, **2010**, 11, 665–669.
- [199] Pradeep Doggali, Y. Teraokab, P. Mungse, Irfan K. Shah, S. Rayalua, Nitin Labhsetwar, Combustion of volatile organic compounds over Cu–Mn based mixed oxide type catalysts supported on mesoporous Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub> and ZrO<sub>2</sub>, *Journal of Molecular Catalysis A: Chemical*, **2012**, 358, 23– 30.

## REFERENCES

---

- [200] Qian Li, Qian Li, Ming Meng, Fangfang Dai, Yuqing Zha, Yanning Xie, Tiandou Hu, Jing Zhang, 'catalysts used for soot combustion, NO<sub>x</sub> storage and simultaneous soot– NO<sub>x</sub> removal', *Chemical Engineering Journal*, **2012**, 184, 106– 112.
- [201] Qian Li, Ming Meng, Noritatsu Tsubaki, Xingang Li, Zhaoqiang Li, Yanning Xie, Tiandou Hu, Jing Zhang, 'Performance of K-promoted hydrotalcite-derived CoMgAlO catalysts used for soot combustion, NO<sub>x</sub> storage and simultaneous soot– NO<sub>x</sub> removal', *Applied Catalysis B: Environmental*, **2009**, 91, 406–415.
- [202] Qian Li, Xiao Wang, Wei Chang, Hui Chen, Zhaoliang Zhang, Promotional effects of cerium doping and NO<sub>x</sub> on the catalytic soot combustion over MnMgAlO hydrotalcite-based mixed oxides. *Journal of Rare Earths*, **2014**, 32, 176-183.
- [203] Qiang Wang et al., Simultaneous Removal of Soot and NO<sub>x</sub> from Lean-Burn Engine Emissions Over Potassium Ditungstate-Based Catalysts. *Science of Advanced Materials*, Vol. 3, 989–993, 2011.
- [204] R. Dula, R. Janik, T. Machej, J. Stoch, R. Grabowski, E.M. Serwicka, 'Mn-containing catalytic materials for the total combustion of toluene: The role of Mn localisation in the structure of LDH precursor', *Catalysis Today*, **2007**, 119, 327-331.
- [205] R. J. Farrauto and K. E. Voss, Monolithic Diesel Oxidation Catalyst, *Appl. Catal. B Environ.* **1996**, 10, 29–51.
- [206] R. Matarrese, S. Morandi, L. Castoldi, P. Villa and L. Lietti, Removal of NO<sub>x</sub> and soot over Ce/Zr/K/Me (Me = Fe, Pt, Ru, Au) oxide catalysts, *Appl. Catal. B Environ.* **2017**, 201, 318–330.
- [207] R. Miller, G. Davis, G. Lavoie and C. Newman, 'A Super-Extended Zeldovich Mechanism for NO<sub>x</sub> Modeling and Engine Calibration', *SAE international*, **1988**, 980781.
- [208] R. Prasad and Pratchi Singh, A novel route of single step reactive calcination of copper salts far below their decomposition temperatures for synthesis of highly active catalysts, *Catal. Sci. Technol.*, **2013**, 3, 3326.
- [209] R. Prasad, Sony and Pratchi Singh, Low temperature complete combustion of a lean mixture of LPG emissions over cobaltite catalysts, *Catal. Sci. Technol.*, **2013**, 3, 3223.

## REFERENCES

---

- [210] R. Prasad, Venkateswara R. Bell, 'A Review on Diesel Soot Emission, its Effect and Control', *Bulletin of Chemical Reaction Engineering and Catalysis*, **2010**, 5, 69-86.
- [211] Rahman A., Jonnalagadda S. B., Swift and Selective Reduction of Nitroaromatics to Aromatic Amines with Ni-Boride-Silica Catalysts System at Low Temperature. *Catal Lett.*, **2008**, 123:264–268, DOI 10.1007/s10562-008-9417-5.
- [212] Reza M. MalekAbbaslou, JafarSoltan, Ajay K.Dalai. Effects of nanotubes pore size on the catalytic performances of iron catalysts supported on carbon nanotubes for Fischer-Tropsch synthesis, *Applied Catalysis A: General*, **2010**, 379 129–134.
- [213] Robert J. Farrauto, Kenneth E. Voss, 'Monolithic Diesel Oxidation Catalyst', *Applied Catalysis B: Environmental*, **1996**, 10, 29–51.
- [214] Robert Joumard, 'Methods of Estimation of Atmospheric Emissions from Transport: European Scientist Network and Scientific State-of-the art action COST 319 final report', **1999**, <http://www.alpnap.org/C319finalreport>.
- [215] Roberto Matarrese, Eleonora Aneggi, Lidia Castoldi, Jordi Llorca, Alessandro Trovarelli, Luca Lietti, Simultaneous removal of soot and NO<sub>x</sub> over K- and Ba-doped ruthenium supported catalysts, *Catalysis Today*. **2016**, 267, 119–129.
- [216] Roberto Matarrese, Sara Morandi, Lidia Castoldi, Pierluigi Villa, Luca Lietti, Removal of NO<sub>x</sub> and soot over Ce/Zr/K/Me (Me = Fe, Pt, Ru, Au) oxide catalysts', *Applied Catalysis B: Environmental*, **2017**, 201, 318–330.
- [217] Rongshu Zhu *et al.*, An exploratory study on simultaneous removal of soot and NO<sub>x</sub> over Ir-Al<sub>2</sub>O<sub>3</sub> catalyst in the presence of O<sub>2</sub>. *Catalysis Communications*, **2008**, 9, 1184–1188.
- [218] Rongshu Zhu, Mingxin Guo, Feng Ouyang, 'Simultaneous removal of soot and NO<sub>x</sub> over Ir-based catalysts in the presence of oxygen', *Catalysis Today*, **2008**, 139, 146–151.
- [219] Ruoyan Yang, Yanshan Gao, Junya Wang and Qiang Wang, 'Layered double hydroxide (LDH) derived catalysts for simultaneous catalytic removal of soot and NO<sub>x</sub>', *Dalton Trans.*, **2014**, 43, 10317.
- [220] Russo, N.; Fino, D.; Saracco, G.; Specchi, V. Studies on the redox properties of chromite perovskite catalysts for soot combustion, *J. Catal.*, **2005**, 229, 459–469.
- [221] Russo, N.; Fino, D.; Saracco, G.; Specchia, V. Promotion effect of Au on perovskite catalysts for the regeneration of diesel particulate filters. *Catal. Today*, **2008**, 137, 306–311.

## REFERENCES

---

- [222] S. Bensaid, D. L. Marchisio, N. Russo and D. Fino, Experimental investigation of soot deposition in diesel particulate filters, *Catalysis Today*. **2009**, *147*, 295–300.
- [223] S. Biamino, P. Fino, D. Fino, N. Russo, C. Badini, ‘Catalyzed traps for diesel soot abatement: In situ processing and deposition of perovskite catalyst’, *Applied Catalysis B: Environmental*, **2005**, *61*, 297–305.
- [224] S. Epling, L. E. Campbell, A. Yezerets, N. W. Currier and J. E. Parks, Overview of the Fundamental Reactions and Degradation Mechanisms of NO<sub>x</sub> Storage/Reduction Catalysts, *Catal. Rev.* **2004**, *46*, 163–245.
- [225] S. J. Schmieg, R. J. Blint and L. Deng, Control Strategy for the Removal of NO<sub>x</sub> from Diesel Engine Exhaust using Hydrocarbon Selective Catalytic Reduction, *SAE Paper*. **2009**, DOI: 10.4271/2008-01-2486.
- [226] S. S. Gill, D. Turner, and A. Tsolakis, A. P. E. York, Controlling Soot Formation with Filtered EGR for Diesel and Biodiesel Fuelled Engines, *Environ. Sci. Technol.* **2012**, *46* (7), 4215–4222.
- [227] S. Sumathi, S. Bhatia, K.T. Lee, A.R. Mohamed, ‘Selection of best impregnated palm shell activated carbon (PSAC) for simultaneous removal of SO<sub>2</sub> and NO<sub>x</sub>’, *Journal of Hazardous Materials*, **2010**, *176*, 1093–1096.
- [228] S.L. Andersson, P.L.T. Gabrielson, C.U.I. Odenbrand, Reducing NO<sub>x</sub> in diesel exhaust by SCR technique: experiments and simulation, *AIChE J.* **1994**, *40*, 1911.
- [229] Sangil Kwon, Yonghee Park, Junhong Park, Jeongsoo Kim, Kwang-Ho Choi, Jun-Seok Cha, Characteristics of on-road NO<sub>x</sub> emissions from Euro 6 light-duty diesel vehicles using a portable emissions measurement system, *Science of The Total Environment*. **2017**, *576*, 70-77.
- [230] Schenk, J. McDonald and B. Olson, High-Efficiency NO<sub>x</sub> and PM Exhaust Emission Control for Heavy-Duty On-Highway Diesel Engines, *SAE Paper*. **2001**, DOI: 10.4271/2001-01-1351.
- [231] Sekar, C., Gurjar, B., Ojha, C., and Goyal, M., Potential Assessment of Neural Network and Decision Tree Algorithms for Forecasting Ambient PM<sub>2.5</sub> and CO Concentrations: Case Study. *J. Hazard. Toxic Radioactive Waste*, **2015**, 10.1061/(ASCE)HZ.2153-5515.0000276, A5015001.
- [232] Sekar, C., Ojha C., Gurjar BR., and Goyal, M., Modeling and Prediction of Hourly Ambient Ozone (O<sub>3</sub>) and Oxides of Nitrogen (NO<sub>x</sub>) Concentrations Using Artificial Neural Network and Decision Tree Algorithms for an Urban Intersection in India. *J. Hazard. Toxic Radioactive Waste*, **2015**, 10.1061/(ASCE)HZ.2153-5515.0000270, A4015001. 4.

## REFERENCES

---

- [233] Shamjad, P.M., S.N. Tripathi, Absorbing refractive index and direct radiative forcing of atmospheric brown carbon over Gangetic Plain, *ACS Earth and Space Chemistry*, **2017**, DOI: 10.1021/acsearthspacechem.7b00074.
- [234] Shangguan, W.F. Teraoka, Y. Kagawa, 'Promotion effect of potassium on the catalytic property of  $\text{CuFe}_2\text{O}_4$  for the simultaneous removal of  $\text{NO}_x$  and diesel soot particulate', *Applied Catalysis B: Environmental*, **1998**, 16, 149–154.
- [235] Sherry Boschert, "Well-to-wheels Emissions Data for Plug-in Hybrids and Electric Vehicles: A Review", New Society Publishers, **2006**.
- [236] Shimizu, K., Satsuma, A. & Hattori, T., Metal Oxide Catalysts for Selective Reduction of  $\text{NO}_x$  by Hydrocarbons: Toward Molecular Basis for Catalyst Design, *Catalysis Surveys from Asia*, **2001**, 4: 115. doi:10.1023/A:1011455304372.
- [237] Sigurdson S., Sundaramurthya V., Dalai A.K., Adjayeb J., Phosphorus promoted trimetallic NiMoW/ $\text{Al}_2\text{O}_3$  sulfide catalysts in gas oil hydrotreating., *Journal of Molecular Catalysis A: Chemical*, **2008**, 291, 30–37.
- [238] Song, M. Alam, A. L. Boehman and U. Kim, Examination of the oxidation behavior of biodiesel soot, *Combust. Flame*. **2006**, 146, 589–604.
- [239] Sonia Ascaso *et al.*, Cesium as Alkali Promoter in Me Cs (Me = Cu, Co, Fe)  $\text{Al}_2\text{O}_3$  Structured Catalysts for the Simultaneous Removal of Soot and  $\text{NO}_x$ . *Modern Research in Catalysis*, **2013**, 2, 57-62.
- [240] Stefania Furfori, Samir Bensaïd, Nunzio Russo, Debora Fino, Towards practical application of lanthanum ferrite catalysts for NO reduction with  $\text{H}_2$ , *Chemical Engineering Journal*. **2009**,154, 348–354.
- [241] Sunil Gulia, Akarsh Shrivastava, A.K. Nema and Mukesh Khare, Assessment of urban air quality around a heritage site using AERMOD: A case study of Amritsar city, India. *Environmental Modelling and Assessment*, **2015**, DOI: 10.1007/s10666-015-9446-6.
- [242] Sunil Gulia, S.M. Shiva Nagendra, Mukesh Khare, Khanna, I. "Urban air quality management-A review", *Atmospheric Pollution Research*, **2015**, doi: 10.5094/APR.2015.033.
- [243] Suresh Kumar, A. Vinub, J. Subrt, Snejana Bakardjiev, S. Rayalua, Y. Teraoka, Nitin Labhsetwar, Catalytic  $\text{N}_2\text{O}$  decomposition on  $\text{Pr}_{0.8}\text{Ba}_{0.2}\text{MnO}_3$  type perovskite catalyst for industrial emission control. *Catalysis Today*, **2012**, 198, 125– 132.
- [244] T. Johnson, 15 – Overview of diesel emissions and control for heavy-duty diesel engines, *Advanced Direct Injection Combustion Engine Technologies and Development, Diesel Engines*. **2010**, 595–616.

## REFERENCES

---

- [245] T.V. Johnson, Diesel Emission Control: 2001 in Review, *SAE paper*. **2002**, no.2002-01-0285, 2002.
- [246] Tahir S.F. and Koh C.A., Catalytic oxidation of ethane over supported metal oxide catalysts, *Chemosph.*, **1997**, 34(8), 1787-1793.
- [247] Tarak Mondal, Kamal K. Pant, Ajay K. Dalai, Catalytic oxidative steam reforming of bio-ethanol for hydrogen production over Rh promoted Ni/CeO<sub>2</sub>eZrO<sub>2</sub> catalyst, *International journal of hydrogen energy*, **2015**, 40, 2529-2544.
- [248] Tarak Mondal, Kamal K. Pant, and Ajay K. Dalai, "Oxidative and non-oxidative steam reforming of crude bio-ethanol for hydrogen production over Rh promoted Ni/CeO<sub>2</sub>-ZrO<sub>2</sub> catalyst", *Applied Catalysis A: General*, **2015**, 49919-31.
- [249] Teraoka Y., Kanada K., Kagawa S., 'Synthesis of La-K-Mn-O perovskite type oxides and their catalytic property for simultaneous removal of NO<sub>x</sub> and diesel soot particulates', *Applied Catalysis B: Environmental*, **2001**, 34, 73–78.
- [250] Thamban, N., S.N. Tripathi, Internally mixed black carbon in the Indo-Gangetic Plain and its effect on absorption enhancement, *Atmospheric Research*, **2017**, 197, 211-223. 130.
- [251] Theinnoi K, Gill S.S., Tsolakis A., York A .P. E., Megaritis A., Harrison R. M., 'Diesel Particulate Filter Regeneration Strategies: Study of Hydrogen Addition on Biodiesel Fuelled Engines', *Energy & Fuels*, **2012**, 26, 1192-1201.
- [252] Theinnoi K., Gill S.S.; Tsolakis A., Wyszynsk M.L., Megaritis A., Yang C., Harrison R., 'Fuel Efficient, Continuously Regenerating Diesel Particulate Filter with Onboard Hydrogen Production: Towards a Fuel Reformer–Diesel Engine Aftertreatment System', FISITA, **2010**, *World Automotive Congress*, Paper F2010-A-125.
- [253] Todd J. Toops, B.G. Bunting, K. Nguyen, A. Gopinath, 'Effect of engine-based thermal aging on surface morphology and performance of Lean NO<sub>x</sub> Traps', *Catalysis Today*, **2007**, 123, 285-292.
- [254] Tsolakis and S. E. Golunski, Sensitivity of process efficiency to reaction routes in exhaust-gas reforming of diesel fuel, *Chem. Eng. J.* **2006**, 117, 131–136.
- [255] Ulrich Hoffmann and Thomas Rieckmann, 'Reduction of Diesel Particulate Emissions by Catalytic Filtration', *Chemical Engineering & Technology*, **1994**, 17, 149–160.
- [256] Unai De-La-Torre, Beñat Pereda-Ayo, Manuel Moliner, Juan R. González-Velasco, Avelino Corma, Cu-zeolite catalysts for NO<sub>x</sub> removal by selective

- catalytic reduction with  $\text{NH}_3$  and coupled to NO storage/reduction monolith in diesel engine exhaust aftertreatment systems, *Appl. Catal. B Environ.* **2016**, *187*, 419-427.
- [257] Unai De-La-Torre, Beñat Pereda-Ayo, Miguel A. Gutiérrez-Ortiz, José A. González-Marcos, Juan R. González-Velasco, Steady-state  $\text{NH}_3$ -SCR global model and kinetic parameter estimation for  $\text{NO}_x$  removal in diesel engine exhaust aftertreatment with Cu/chabazite, *Catal Today.* **2017**, <https://doi.org/10.1016/j.cattod.2017.04.011>.
- [258] V. Houel, P. Millington, R. Rajaram and A. Tsolakis, Fuel effects on the activity of silver hydrocarbon-SCR catalysts, *Appl. Catal. B Environ.* **2007**, *73*, 203–207.
- [259] V. J. Hall-roberts, A. N. Hayhurst, D. E. Knight and S. G. Taylor, The origin of soot in flames: is the nucleus an ion?, *Combust. Flame.* **2000**, *120*, 578–584.
- [260] V. Serra, G. Saracco, C. Badini, V. Specchia, ‘Combustion of carbonaceous materials by Cusingle bondKsingle bondV based catalysts: II. Reaction mechanism’, *Applied Catalysis B: Environmental*, **1997**, *11*, 329–346.
- [261] V.S.R. Rajasekhar Pullabhotla, Rahman A, Jonnalagadda S.B., Selective catalytic Knoevenagel condensation by Ni– $\text{SiO}_2$  supported heterogeneous catalysts: An environmentally benign approach. *Catalysis Communications*, **2009**, *10*, 365–369.
- [262] Vaaraslahti, J. Ristimäki, A. Virtanen, J. Keskinen, B. Giechaskiel and A. Solla, Effect of Oxidation Catalysts on Diesel Soot Particles, *Environ. Sci. Technol.* **2006**, *40(15)*, 4776–4781.
- [263] Valeria Di Sarli, Almerinda Di Benedetto, Modeling and simulation of soot combustion dynamics in a catalytic diesel particulate filter, *Chemical Engineering Science.* **2015**, *137*, 69-78.
- [264] Vertika Shukla, D. K. Upreti<sup>1</sup> and Manoj Semwal, Lichen biomonitoring, a valuable proxy for interpreting climate change phenomenon in Himalayas: exploring causes for glacier lake outburst flood in Kedarnath region. *Cryptogam Biodiversity and Assessment*, **2016**, *1*, 2456-0251.
- [265] W.F. Shangguan *et al.*, Promotion effect of potassium on the catalytic property of  $\text{CuFe}_2\text{O}_4$  for the simultaneous removal of  $\text{NO}_x$  and diesel soot particulate. *Applied Catalysis B: Environmental*, **1998**, *16*, 149-154.
- [266] W.F. Shangguan, Y. Teraoka, S. Kagawa, ‘Kinetics of soot- $\text{O}_2$ , soot-NO and soot- $\text{O}_2$ -NO reactions over spinel-type  $\text{CuFe}_2\text{O}_4$  catalyst’, *Applied Catalysis B: Environmental*, **1997**, *12*, 237-247.

## REFERENCES

---

- [267] W.F. Shangguan, Y. Teraoka, S. Kagawa, 'Simultaneous Catalytic Removal of NO<sub>x</sub> and Diesel Soot Over ternary AB<sub>2</sub>O<sub>4</sub> spinel-type Oxides', *Applied Catalysis B: Environmental*, **1996**, 8, 217-227.
- [268] Wang, H.; Liu, J.; Zhao, Z.; Wei, Y.; Xu, C. Comparative study of nanometric Co-, Mn- and Fe-based perovskite-type complex oxide catalysts for the simultaneous elimination of soot and NO<sub>x</sub> from diesel engine exhaust. *Catal. Today*, **2012**, 184, 288–300.
- [269] Wang, H.; Zhao, Z.; Liang, P.; Xu, C.; Duan, A.; Jiang, G.; Xu, J.; Liu, J. Highly active La<sub>1-x</sub>K<sub>x</sub>CoO<sub>3</sub> Perovskite-type complex oxide catalysts for the simultaneous removal of diesel soot and nitrogen oxides under loose contact conditions. *Catal. Lett.*, **2008**, 124, 91–99.
- [270] Wang, P.; Cai, Y.; Lei, L.; Li, L. Effect of temperature on reduction of NO<sub>x</sub> and soot in diesel exhaust with perovskite-type catalysts. *Procedia Eng.*, **2011**, 16, 259–263.
- [271] Wang, Q.; Chung, J. S.; Guo, Z. Promoted soot oxidation by doped K<sub>2</sub>Ti<sub>2</sub>O<sub>5</sub> catalysts and NO oxidation catalysts. *Ind. Eng. Chem. Res.*, **2011**, 50, 8384–8388.
- [272] Wang, Qiang, Xing, Zipeng; Zhang, Weiwei, Guo, Zhanhu, Chung, Jong Shik, 'Simultaneous Removal of Soot and NO<sub>x</sub> from Lean-Burn Engine Emissions Over Potassium Ditanate-Based Catalysts', *Science of Advanced Materials*, **2011**, 3, 989-993.
- [273] Wang, W.; Du, C.; Xiang, X.; Reggie, Z. Removal of NO<sub>x</sub> and diesel soot particulates catalyzed by perovskite-type oxide La<sub>0.9</sub>K<sub>0.1</sub>CoO<sub>3</sub>. *J Wuhan Univ. Technol. Mater. Sci.*, Ed. **2006**, 21 (1), 57–59.
- [274] Weng Duan, NO<sub>x</sub> assisted soot oxidation over KCuCe catalyst. *Journal of Rare Earths*, Vol. 28, No. 4, Aug. **2010**, p. 542.
- [275] West, S. Huff, J. Parks, S. Lewis, J. S. Choi, W. Partridge and J. Storey, Assessing Reductant Chemistry During In-Cylinder Regeneration of Diesel Lean NO<sub>x</sub> Traps, *SAE Paper*. **2004**, DOI: 10.4271/2004-01-3023.
- [276] X.L. Wang, D. Li, C.X. Shi, B. Li, T.Y. Cui, Z.D. Zhang, Effect of the calcination temperature on the magnetic and transport properties of rhombohedral LaMnO<sub>3+δ</sub> compounds, *Physica B: Condensed Matter*. **2010**, 405, 1362-1368.
- [277] Xiaosheng Peng *et al.*, A highly efficient and porous catalyst for simultaneous removal of NO<sub>x</sub> and diesel soot. *Catalysis Communications*, **2007**, 8 157–161.
- [278] Xiaosheng Peng, He Lin, Wenfeng Shangguan, and Zhen Huang, Physicochemical and Catalytic Properties of La<sub>0.8</sub>K<sub>0.2</sub>Cu<sub>x</sub>Mn<sub>1-x</sub>O<sub>3</sub> for

- Simultaneous Removal of NO<sub>x</sub> and Soot: Effect of Cu Substitution Amount and Calcination Temperature, *Ind. Eng. Chem. Res.* **2006**, 45 (26), pp 8822–8828.
- [279] Xin Guo, Ming Meng, Fangfang Dai, Qian Li, Zhaoliang Zhang, Zheng Jiang, Shuo Zhang, Yuying Huang, NO<sub>x</sub>-assisted soot combustion over dually substituted perovskite catalysts La<sub>1-x</sub>K<sub>x</sub>Co<sub>1-y</sub>Pd<sub>y</sub>O<sub>3-δ</sub>. *Appl. Catal. B Environ.* **2013**, 142–143, 278-289.
- [280] Y. Teraoka *et al.*, Simultaneous Removal of Nitrogen Oxides and diesel soot particulates catalyzed by perovskite-type oxides. *Applied Catalysis B: Environmental*, **1995**, 5, L181-L185.
- [281] Y.K. Sharma, Arakshita Majhi, V.S. Kukreti, M.O. Garg, Stock loss studies on breathing loss of gasoline. *Fuel*, **2010**, 89, 1695–1699.
- [282] Yamamoto, S. Oohori, H. Yamashita and S. Daido, Simulation on soot deposition and combustion in diesel particulate filter, *Proc. Combust. Inst.* **2009**, 32, 1965–1972.
- [283] Yang, J.S.; Lee, G.D.; Ahn, B.H.; Hong, S. S. Simultaneous catalytic removal of NO and carbon particulates over perovskite-type oxides. *J. Ind. Eng. Chem.*, **1998**, 4, 263–269.
- [284] Yasutake Teraoka, Koji Nakano, Wenfeng Shangguan, Shuichi Kagawa, Simultaneous catalytic removal of nitrogen oxides and diesel soot particulate over perovskite-related oxides, *Catalysis Today*. **1996**, 27, 107-113.
- [285] Ying Cheng, Jian Liu, Zhen Zhao, Weiyu Song, Yuechang Wei, Highly efficient and simultaneously catalytic removal of PM and NO<sub>x</sub> from diesel engines with 3DOM Ce<sub>0.8</sub>M<sub>0.1</sub>Zr<sub>0.1</sub>O<sub>2</sub> (M = Mn, Co, Ni) catalysts, *Chemical Engineering Science*. **2017**, 167, 219-228.
- [286] Yoshida, S. Makino, S. Sumiya, G. Muramatsu and R. Helferich, Simultaneous Reduction of NO<sub>x</sub> and Particulate Emissions from Diesel Engine Exhaust, *SAE paper*, **1989**. no.892046.
- [287] Z. D. Ristovski, L. Morawska, J. Hitchins, S. Thomas, C. Greenaway and D. Gilbert, Particle emissions from compressed natural gas engines, *J. Aerosol Sci.* **2000**, 31, 403–413.
- [288] Z. Wang, Q. Li, L. Wang and W. Shangguan, Simultaneous catalytic removal of NO<sub>x</sub> and soot particulates over CuMgAl hydrotalcites derived mixed metal oxides, *Appl. Clay Sci.* **2012**, 55, 125–130.
- [289] Zafer Say, Merve Tohumeken, Emrah Ozensoy, NO<sub>x</sub> storage and reduction pathways on zirconia and titania functionalized binary and ternary oxides as NO<sub>x</sub> storage and reduction (NSR) systems, *Catal. Today*. **2014**, 135-144.

- [290] Zawadzki, M.; Walerczyk, W.; López-Suárez, F.E.; Illán-Gómez, M.J.; Bueno-López, A. CoAl<sub>2</sub>O<sub>4</sub> spinel catalyst for soot combustion with NO<sub>x</sub>/O<sub>2</sub>. *Catal. Commun.*, **2011**, 12, 1238–1241.
- [291] Zhang J., Wang H., Dalai A. K., Effects of metal content on activity and stability of Ni-Co bimetallic catalysts for CO<sub>2</sub> reforming of CH<sub>4</sub>. *Applied Catalysis A: General*, **2008**, 339, 121–129.
- [292] Zhao, B.; Wang, R.; Yang, X. Simultaneous catalytic removal of NO<sub>x</sub> and diesel soot particulates over La<sub>1-x</sub>Ce<sub>x</sub>NiO<sub>3</sub> perovskite oxide catalysts. *Catal. Commun.*, **2009**, 10, 1029–1033.
- [293] Zhaoqiang Li, Ming Meng, QianLi, Yaning Xie, Tiandou Hu, Jing Zhang, Fe-substituted nanometric La<sub>0.9</sub>K<sub>0.1</sub>Co<sub>1-x</sub>Fe<sub>x</sub>O<sub>3-δ</sub> perovskite catalysts used for soot combustion, NO<sub>x</sub> storage and simultaneous catalytic removal of soot and NO<sub>x</sub>, *Chemical Engineering Journal*, **2010**, 164 (1), 98-105.
- [294] Zhaoqiang Li, Highly efficient multifunctional dually-substituted perovskite catalysts La<sub>1-x</sub>K<sub>x</sub>Co<sub>1-y</sub>Cu<sub>y</sub>O<sub>3-δ</sub> used for soot combustion, NO<sub>x</sub> storage and simultaneous NO<sub>x</sub>-soot removal. *Applied Catalysis B: Environmental.*, **2012**, 121– 122, 65– 74.
- [295] Zhaoqiang Li, Ming Meng, Fangfang Dai, Tiandou Hub, Yaning Xie, Jing Zhang, ‘Performance of K and Ni substituted La<sub>1-x</sub>K<sub>x</sub>Co<sub>1-y</sub>Ni<sub>y</sub>O<sub>3-δ</sub> perovskite catalysts used for soot combustion, NO<sub>x</sub> storage and simultaneous NO<sub>x</sub>-soot removal’, *Fuel*, **2012**, 93, 606–610.
- [296] Zheng, G. T. Reader and J. G. Hawley, Diesel engine exhaust gas recirculation - a review on advanced and novel concepts, *Energy Convers. Manage.* **2004**, 45, 883–900.
- [297] Zhen Li, Mengjin Yang, Ji-Sang Park, Su-Huai Wei, Joseph J. Berry, and Kai Zhu. Stabilizing Perovskite Structures by Tuning Tolerance Factor: Formation of Formamidinium and Cesium Lead Iodide Solid-State Alloys, *Chem. Mater.* **2016**, 28, 1, 284-292.
- [298] Zhi Ma, Xiang Gao, Xiulan Yuan, Lu Zhang, Yunfeng Zhu, Zhijun Li, Simultaneous catalytic removal of NO<sub>x</sub> and diesel soot particulates over La<sub>2-x</sub>A<sub>x</sub>Ni<sub>1-y</sub>B<sub>y</sub>O<sub>4</sub> perovskite-type oxides, *Catalysis Communication*, **2011**, 12, 817-821.
- [299] Zhihao Ma, Lei Li, Ying Chao, Ning Kang, Bin Xu, and Jian Wu, Effects of Diesel Oxidation Catalyst on Nanostructure and Reactivity of Diesel Soot, *Energy Fuels*. **2014**, 28 (7), pp 4376–4382.
- [300] Zhong, Z.; Chen, K.; Ji, Y.; Yan, Q. Methane combustion over B-site partially substituted perovskite type LaFeO<sub>3</sub> prepared by sol-gel method. *Appl. Catal. A Gen.* **1997**, 156 (1), 29–41.

## REFERENCES

---

- [301] Zhongpeng Wang, Lanthanum-promoted copper-based hydrotalcites derived mixed oxides for NO<sub>x</sub> adsorption, soot combustion and simultaneous NO<sub>x</sub> -soot removal. *Materials Research Bulletin*, **2014**, 51, 119–127.
- [302] Zhongpeng Wang, Qian Li, Liguang Wang, Wenfeng Shangguan, ‘Simultaneous catalytic removal of NO<sub>x</sub> and soot particulates over CuMgAl hydrotalcites derived mixed metal oxides’, *Applied Clay Science*, **2012**, 55, 125–130.
- [303] Zhu Ling *et al.*, Catalytic combustion of diesel soot over K<sub>2</sub>NiF<sub>4</sub>-type oxides La<sub>2-x</sub>K<sub>x</sub>CuO<sub>4</sub>. *Journal of Rare Earths*, Apr. **2008**, 26(2), p. 254.