

## Reference

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- [1] H. Fu, Z. Li, Y. Zhang, H. Zhang, H. Chen, Preparation, characterization and properties study of a superhydrophobic ceramic membrane based on fly ash, *Ceram. Int.* (2022). <https://doi.org/10.1016/J.CERAMINT.2022.01.014>.
- [2] K.P. Goswami, K. Pakshirajan, G. Pugazhenthii, Process intensification through waste fly ash conversion and application as ceramic membranes: A review, *Sci. Total Environ.* 808 (2022) 151968. <https://doi.org/10.1016/J.SCITOTENV.2021.151968>.
- [3] T.D. Gunawan, Mariana, E. Munawar, S. Muchtar, Preparation and characterization of chemically activated adsorbent from the combination of coconut shell and fly ash, *Mater. Today Proc.* (2022). <https://doi.org/10.1016/J.MATPR.2022.01.023>.
- [4] Z. Liu, K. Takasu, H. Koyamada, H. Suyama, A study on engineering properties and environmental impact of sustainable concrete with fly ash or GGBS, *Constr. Build. Mater.* 316 (2022) 125776. <https://doi.org/10.1016/J.CONBUILDMAT.2021.125776>.
- [5] Y. Teng, S. Liu, Z. Zhang, J. Xue, X. Guan, Effect of triethanolamine on the chloride binding capacity of cement paste with a high volume of fly ash, *Constr. Build. Mater.* 315 (2022) 125612. <https://doi.org/10.1016/J.CONBUILDMAT.2021.125612>.
- [6] G. Wang, J.N.F. Poulsen, S.N.F. Poulsen, P.A. Jensen, F.J. Frandsen, Influence of kaolin and coal fly ash addition on biomass ash deposition in an entrained flow reactor, *Fuel.* 313 (2022) 123041.

- <https://doi.org/10.1016/J.FUEL.2021.123041>.
- [7] R. Chen, Y. Li, R. Xiang, S. Li, Effect of particle size of fly ash on the properties of lightweight insulation materials, *Constr. Build. Mater.* 123 (2016) 120–126. <https://doi.org/10.1016/J.CONBUILDMAT.2016.06.140>.
- [8] L. Zhu, Y. Dong, L. Li, J. Liu, S.J. You, Coal fly ash industrial waste recycling for fabrication of mullite-whisker-structured porous ceramic membrane supports, *RSC Adv.* 5 (2015) 11163–11174. <https://doi.org/10.1039/c4ra10912k>.
- [9] S. Bhawan, R.K. Puram, CEA ANNUAL REPORT 2018-19 CENTRAL ELECTRICITY AUTHORITY CENTRAL ELECTRICITY AUTHORITY CENTRAL ELECTRICITY AUTHORITY MINISTRY OF POWER GOVERNMENT OF INDIA, n.d.
- [10] Government of India, Ministry of Power REPORT ON FLY ASH GENERATION AT COAL / LIGNITE BASED THERMAL POWER STATIONS AND ITS UTILIZATION IN THE COUNTRY FOR THE YEAR 2019-20 CENTRAL ELECTRICITY AUTHORITY THERMAL CIVIL DESIGN DIVISION NEW DELHI, 2020.
- [11] Z.T. Yao, X.S. Ji, P.K. Sarker, J.H. Tang, L.Q. Ge, M.S. Xia, Y.Q. Xi, A comprehensive review on the applications of coal fly ash, *Earth-Science Rev.* 141 (2015) 105–121. <https://doi.org/10.1016/j.earscirev.2014.11.016>.
- [12] C.L. Carlson, D.C. Adriano, Environmental Impacts of Coal Combustion Residues, *J. Environ. Qual.* 22 (1993) 227–247. <https://doi.org/10.2134/JEQ1993.00472425002200020002X>.

- [13] M. Ahmaruzzaman, A review on the utilization of fly ash, *Prog. Energy Combust. Sci.* 36 (2010) 327–363. <https://doi.org/10.1016/J.PECS.2009.11.003>.
- [14] D.C. Adriano, A.L. Page, A.A. Elseewi, A.C. Chang, I. Straughan, Utilization and Disposal of Fly Ash and Other Coal Residues in Terrestrial Ecosystems: A Review, *J. Environ. Qual.* 9 (1980) 333–344. <https://doi.org/10.2134/JEQ1980.00472425000900030001X>.
- [15] C.L. Yu, Q. Deng, S. Jian, J. Li, E.K. Dzantor, D. Hui, Effects of fly ash application on plant biomass and element accumulations: a meta-analysis, *Environ. Pollut.* 250 (2019) 137–142. <https://doi.org/10.1016/J.ENVPOL.2019.04.013>.
- [16] H. He, Z. Dong, Q. Peng, X. Wang, C. Fan, X. Zhang, Impacts of coal fly ash on plant growth and accumulation of essential nutrients and trace elements by alfalfa (*Medicago sativa*) grown in a loessial soil, *J. Environ. Manage.* 197 (2017) 428–439. <https://doi.org/10.1016/J.JENVMAN.2017.04.028>.
- [17] R.S. Iyer, J.A. Scott, Power station fly ash — a review of value-added utilization outside of the construction industry, *Resour. Conserv. Recycl.* 31 (2001) 217–228. [https://doi.org/10.1016/S0921-3449\(00\)00084-7](https://doi.org/10.1016/S0921-3449(00)00084-7).
- [18] R. Sokolar, L. Vodova, The effect of fluidized fly ash on the properties of dry pressed ceramic tiles based on fly ash–clay body, *Ceram. Int.* 37 (2011) 2879–2885. <https://doi.org/10.1016/J.CERAMINT.2011.05.005>.
- [19] N. Suriyanarayanan, K. V Kannan Nithin, E. Bernardo, MULLITE GLASS CERAMICS PRODUCTION FROM COAL ASH AND ALUMINA BY HIGH

TEMPERATURE PLASMA, 2009.

- [20] Y. He, W. Cheng, H. Cai, Characterization of  $\alpha$ -cordierite glass-ceramics from fly ash, *J. Hazard. Mater.* 120 (2005) 265–269. <https://doi.org/10.1016/J.JHAZMAT.2004.10.028>.
- [21] R.S. Blissett, N.A. Rowson, A review of the multi-component utilisation of coal fly ash, *Fuel*. 97 (2012) 1–23. <https://doi.org/10.1016/J.FUEL.2012.03.024>.
- [22] M. Ilic, C. Cheeseman, C. Sollars, J. Knight, Mineralogy and microstructure of sintered lignite coal fly ash☆, *Fuel*. 82 (2003) 331–336. [https://doi.org/10.1016/S0016-2361\(02\)00272-7](https://doi.org/10.1016/S0016-2361(02)00272-7).
- [23] S.T. Akar, R. Uysal, Untreated clay with high adsorption capacity for effective removal of C.I. Acid Red 88 from aqueous solutions: Batch and dynamic flow mode studies, *Chem. Eng. J.* 162 (2010) 591–598. <https://doi.org/10.1016/j.cej.2010.06.001>.
- [24] L.C. Ram, R.E. Masto, Fly ash for soil amelioration: A review on the influence of ash blending with inorganic and organic amendments, *Earth-Science Rev.* 128 (2014) 52–74. <https://doi.org/10.1016/j.earscirev.2013.10.003>.
- [25] A. González, R. Navia, N. Moreno, Fly ashes from coal and petroleum coke combustion: Current and innovative potential applications, *Waste Manag. Res.* 27 (2009) 976–987. <https://doi.org/10.1177/0734242X09103190>.
- [26] O. Kayali, High Performance Bricks from Fly Ash, (2005) 1–13.
- [27] Z. Yao, M. Xia, Y. Ye, Dilithium dialuminium trisilicate crystalline phase prepared from coal fly ash, *J. Mater. Eng. Perform.* 21 (2012) 877–881. <https://doi.org/10.1007/s11665-011-9959-3>.

- [28] Refractory Material Market Trends | Industry Analysis 2030, (n.d.).  
<https://www.alliedmarketresearch.com/refractory-material-market-A14896>  
(accessed February 11, 2022).
- [29] J.J. BROWN, The Use of Phase Diagrams to Predict Alkali Oxide Corrosion of Ceramics, ACADEMIC PRESS, INC., 1995. <https://doi.org/10.1016/b978-012341834-0/50003-9>.
- [30] K. Dana, S. Sinhamahapatra, H.S. Tripathi, A. Ghosh, Refractories of Alumina-Silica System, Trans. Indian Ceram. Soc. 73 (2014) 1–13.  
<https://doi.org/10.1080/0371750X.2014.905265>.
- [31] J.P. Ildefonse, V. Gabis, F. Cesbron, Mullitization of andalusite in refractory bricks, Key Eng. Mater. 136 (1997) 1798–1801.  
<https://doi.org/10.4028/www.scientific.net/kem.132-136.1798>.
- [32] Y.M. Park, T.Y. Yang, S.Y. Yoon, R. Stevens, H.C. Park, Mullite ceramics derived from coal fly ash, Mater. Sci. Eng. A. 454–455 (2007) 518–522.  
<https://doi.org/10.1016/j.msea.2006.11.114>.
- [33] Y. Dong, X. Feng, X. Feng, Y. Ding, X. Liu, G. Meng, Preparation of low-cost mullite ceramics from natural bauxite and industrial waste fly ash, J. Alloys Compd. 460 (2008) 599–606. <https://doi.org/10.1016/j.jallcom.2007.06.023>.
- [34] Y.M. Park, T.Y. Yang, S.Y. Yoon, R. Stevens, H.C. Park, Mullite whiskers derived from coal fly ash, Mater. Sci. Eng. A. 454–455 (2007) 518–522.  
<https://doi.org/10.1016/J.MSEA.2006.11.114>.
- [35] Y. Dong, S. Hampshire, J. er Zhou, Z. Ji, J. Wang, G. Meng, Sintering and characterization of flyash-based mullite with MgO addition, J. Eur. Ceram. Soc.

- 31 (2011) 687–695. <https://doi.org/10.1016/J.JEURCERAMSOC.2010.12.012>.
- [36] S. Kumar, S.K. Das, S.K. Das, P.K. Das, Synthesis of mullite aggregates from fly ash: Effect on thermomechanical behaviour of low cement castables, *Br. Ceram. Trans.* 103 (2004) 176–180. <https://doi.org/10.1179/096797804225018651>.
- [37] S. Kumar, K.K. Singh, P. Ramachandrarao, Synthesis of cordierite from fly ash and its refractory properties, n.d.
- [38] M. Nguyen, R. Sokolář, Impact of fly ash as a raw material on the properties of refractory forsterite–spinel ceramics, *Minerals*. 10 (2020) 1–12. <https://doi.org/10.3390/min10090835>.
- [39] J. López-Cuevas, E. Interrial-Orejón, C.A. Gutiérrez-Chavarría, J.C. Rendón-Ángeles, Synthesis and Characterization of Cordierite, Mullite and Cordierite-Mullite Ceramic Materials using Coal Fly Ash as Raw Material, (2018). <https://doi.org/10.1557/adv.2018.3>.
- [40] I. Gusti, N. Ardha, M. Aziz, Study on Utilizing Fly Ash for Castable Refractory, *Indones. Min. J.* 10 (2007) 7.
- [41] ASTM-C71 | Standard Terminology Relating to Refractories | Document Center, Inc., (n.d.). <https://www.document-center.com/standards/show/ASTM-C71> (accessed February 27, 2022).
- [42] C. Sadik, I.E. El Amrani, A. Albizane, Recent advances in silica-alumina refractory: A review, *J. Asian Ceram. Soc.* 2 (2014) 83–96. <https://doi.org/10.1016/J.JASCER.2014.03.001>.
- [43] A.G.M. Othman, N.M. Khalil, Sintering of magnesia refractories through the

- formation of periclase–forsterite–spinel phases, *Ceram. Int.* 31 (2005) 1117–1121. <https://doi.org/10.1016/J.CERAMINT.2004.11.011>.
- [44] G. National, H. Pillars, *Refractories Handbook*, (n.d.).
- [45] C. Sadik, I.E. El Amrani, A. Albizane, Effect of andalusite rich schist grain size and the addition of metallic aluminum powder on the properties of silica-alumina refractory, *J. Asian Ceram. Soc.* 1 (2013) 351–355. <https://doi.org/10.1016/j.jascer.2013.10.002>.
- [46] Standard Classification of Fireclay and High-Alumina Refractory Brick, (n.d.). <https://www.astm.org/c0027-98r18.html> (accessed December 10, 2021).
- [47] Harbison-Walker, *Harbison-Walker Handbook of Refractory Practice*, (2005). [www.hwr.com](http://www.hwr.com).
- [48] S. Biswas, D. Sarkar, Subir Biswas Debasish Sarkar Introduction to Refractories for Iron-and Steelmaking Introduction to Refractories for Iron-and Steelmaking Introduction to Refractories for Iron-and Steelmaking, n.d.
- [49] P. Sengupta, *Refractories for the Chemical Industries*, 2020. <https://doi.org/10.1007/978-3-030-61240-5>.
- [50] J.H. (John H. Chesters, *Refractories: production and properties* [by] J. H. Chesters, Iron and Steel Institute, London, 1973.
- [51] D.O. Folorunso, F.O. Aramide, P. Olubambi, J.O. Borode, The Effects of Firing Temperatures on the Performance of Insulating Firebricks Containing Different Proportions of Alumina and Sawdust, *J. Miner. Mater. Charact. Eng.* 03 (2015) 309–317. <https://doi.org/10.4236/jmmce.2015.34033>.
- [52] J.E.F.M. Ibrahim, M. Tihtih, L.A. Gömze, Environmentally-friendly ceramic

- bricks made from zeolite-poor rock and sawdust, *Constr. Build. Mater.* 297 (2021). <https://doi.org/10.1016/j.conbuildmat.2021.123715>.
- [53] M. Sutcu, S. Akkurt, A. Bayram, U. Uluca, Production of anorthite refractory insulating firebrick from mixtures of clay and recycled paper waste with sawdust addition, *Ceram. Int.* 38 (2012) 1033–1041. <https://doi.org/10.1016/j.ceramint.2011.08.027>.
- [54] M. Sutcu, S. Akkurt, A. Bayram, U. Uluca, Production of anorthite refractory insulating firebrick from mixtures of clay and recycled paper waste with sawdust addition, *Ceram. Int.* 38 (2012) 1033–1041. <https://doi.org/10.1016/j.ceramint.2011.08.027>.
- [55] F.O. Aramide, Production and Characterization of Porous Insulating Fired Bricks from Ifon Clay with Varied Sawdust Admixture, 2012. <http://www.scirp.org/journal/jmmce>.
- [56] M. Sato, Construction Technology of Monolithic Refractories, (n.d.).
- [57] S. Kamara, W. Wang, C. Ai, Fabrication of refractory materials from coal fly ash, commercially purified kaolin, and alumina powders, *Materials (Basel)*. 13 (2020) 1–15. <https://doi.org/10.3390/ma13153406>.
- [58] W.E. Lee, University of Sheffield, Department of Engineering Materials. Over 80 years of refractories research, *Refract. Appl. News.* 7 (2002) 15–16.
- [59] Surabhi, Fly ash in India: Generation vis-à-vis Utilization and Global perspective, 2017. <http://www.ripublication.com>.
- [60] A.C. Chang, L.J. Lund, A.L. Page, J.E. Warneke, Physical Properties of Fly Ash-Amended Soils, *J. Environ. Qual.* 6 (1977) 267–270.

<https://doi.org/10.2134/JEQ1977.00472425000600030007X>.

- [61] W.R. Roy Richard G Thiery Rudolph M Schuller John J Subway, J.A. Simon, Coal fly ash: a review of the literature and proposed classification system with emphasis on environmental impacts STATE GEOLOGICAL SURVEY DIVISION ENVIRONMENTAL GEOLOGY NOTES 96, 1981.
- [62] R. Sikka, B.D. Kansal, Characterization of thermal power-plant fly ash for agronomic purposes and to identify pollution hazards, *Bioresour. Technol.* 50 (1994) 269–273. [https://doi.org/10.1016/0960-8524\(94\)90101-5](https://doi.org/10.1016/0960-8524(94)90101-5).
- [63] T. Matsi, V.Z. Keramidas, Fly ash application on two acid soils and its effect on soil salinity, pH, B, P and on ryegrass growth and composition, *Environ. Pollut.* 104 (1999) 107–112. [https://doi.org/10.1016/S0269-7491\(98\)00145-6](https://doi.org/10.1016/S0269-7491(98)00145-6).
- [64] M. Basu, M. Pande, P.B.S. Bhadoria, S.C. Mahapatra, Potential fly-ash utilization in agriculture: A global review, *Prog. Nat. Sci.* 19 (2009) 1173–1186. <https://doi.org/10.1016/J.PNSC.2008.12.006>.
- [65] N. Phonphuak, S. Kanyakam, P. Chindaprasirt, Utilization of waste glass to enhance physical-mechanical properties of fired clay brick, *J. Clean. Prod.* 112 (2016) 3057–3062. <https://doi.org/10.1016/j.jclepro.2015.10.084>.
- [66] S.K.S. Hossain, P.K. Roy, Fabrication of sustainable insulation refractory: Utilization of different wastes, *Boletín La Soc. Española Cerámica y Vidr.* 58 (2019) 115–125. <https://doi.org/10.1016/J.BSECV.2018.09.002>.
- [67] J.G. Otero, F. Blanco, M.P. Garcia, J. Ayala, Manufacture of refractory insulating bricks using fly ash and clay, *Br. Ceram. Trans.* 103 (2004) 181–186. <https://doi.org/10.1179/096797804225018714>.

- [68] S.R. Bragança, A. Zimmer, C.P. Bergmann, ENVIRONMENTAL CONTROL USE OF MINERAL COAL ASHES IN INSULATING REFRACTORY BRICK, 2008.
- [69] R. Zhang, J. Feng, X. Cheng, L. Gong, Y. Li, H. Zhang, Porous thermal insulation materials derived from fly ash using a foaming and slip casting method, *Energy Build.* 81 (2014) 262–267. <https://doi.org/10.1016/J.ENBUILD.2014.06.028>.
- [70] A.K. Mandal, H.R. Verma, O.P. Sinha, Utilization of aluminum plant's waste for production of insulation bricks, *J. Clean. Prod.* 162 (2017) 949–957. <https://doi.org/10.1016/J.JCLEPRO.2017.06.080>.
- [71] B.L. Krasnyi, K.I. Ikonnikov, D.O. Lemeshev, A.S. Sizova, Fly Ash as Technogenic Raw Material for Producing Refractory and Insulating Ceramic Materials (Review), *Glas. Ceram. (English Transl. Steklo i Keramika)*. 78 (2021) 48–56. <https://doi.org/10.1007/s10717-021-00347-3>.
- [72] J.C. Swanepoel, C.A. Strydom, Utilisation of fly ash in a geopolymeric material, *Appl. Geochemistry*. 17 (2002) 1143–1148. [https://doi.org/10.1016/S0883-2927\(02\)00005-7](https://doi.org/10.1016/S0883-2927(02)00005-7).
- [73] S.S. Alterary, N.H. Marei, Fly ash properties, characterization, and applications: A review, *J. King Saud Univ. - Sci.* 33 (2021) 101536. <https://doi.org/10.1016/J.JKSUS.2021.101536>.
- [74] N. Chandra, N. Agnihotri, S. Bhasin, A.F. Khan, Effect of addition of talc on the sintering characteristics of fly ash based ceramic tiles, *J. Eur. Ceram. Soc.* 25 (2005) 81–88. <https://doi.org/10.1016/J.JEURCERAMSOC.2004.01.004>.

- [75] Y. Luo, Y. Wu, S. Ma, S. Zheng, Y. Zhang, P.K. Chu, Utilization of coal fly ash in China: a mini-review on challenges and future directions, *Environ. Sci. Pollut. Res.* 28 (2021) 18727–18740. <https://doi.org/10.1007/s11356-020-08864-4>.
- [76] T. Bakharev, Geopolymeric materials prepared using Class F fly ash and elevated temperature curing, *Cem. Concr. Res.* 35 (2005) 1224–1232. <https://doi.org/10.1016/J.CEMCONRES.2004.06.031>.
- [77] C. Bories, M.E. Borredon, E. Vedrenne, G. Vilarem, Development of eco-friendly porous fired clay bricks using pore-forming agents: A review, *J. Environ. Manage.* 143 (2014) 186–196. <https://doi.org/10.1016/j.jenvman.2014.05.006>.
- [78] K.L. Lin, Feasibility study of using brick made from municipal solid waste incinerator fly ash slag, *J. Hazard. Mater.* 137 (2006) 1810–1816. <https://doi.org/10.1016/J.JHAZMAT.2006.05.027>.
- [79] A. Akgerman, M. Zardkoohi, Adsorption of Phenolic Compounds on Fly Ash, *J. Chem. Eng. Data.* 41 (1996) 185–187. <https://doi.org/10.1021/JE9502253>.
- [80] A.E.H. Daifullah, H. Gad, Sorption of Semi-Volatile Organic Compounds by Bottom and Fly Ashes Using HPLC:, <Http://Dx.Doi.Org/10.1177/026361749801600404>. 16 (2016) 273–283. <https://doi.org/10.1177/026361749801600404>.
- [81] P. Davini, Flue gas treatment by activated carbon obtained from oil-fired fly ash, *Carbon N. Y.* 40 (2002) 1973–1979. [https://doi.org/10.1016/S0008-6223\(02\)00049-0](https://doi.org/10.1016/S0008-6223(02)00049-0).

- [82] S.S. Banerjee, R. V. Jayaram, M. V. Joshi, Removal of Nickel(II) and Zinc(II) from Wastewater Using Fly Ash and Impregnated Fly Ash, [Http://Dx.Doi.Org/10.1081/SS-120018121](http://dx.doi.org/10.1081/SS-120018121). 38 (2006) 1015–1032. <https://doi.org/10.1081/SS-120018121>.
- [83] B.P. Kelleher, M.N. O’Callaghan, M.J. Leahy, T.F. O’Dwyer, J.J. Leahy, The use of fly ash from the combustion of poultry litter for the adsorption of chromium(III) from aqueous solution, *J. Chem. Technol. Biotechnol.* 77 (2002) 1212–1218. <https://doi.org/10.1002/jctb.689>.
- [84] S.S. Banerjee, M. V. Joshi, R. V. Jayaram, Removal of Cr(VI) and Hg(II) from Aqueous Solutions Using Fly Ash and Impregnated Fly Ash, [Http://Dx.Doi.Org/10.1081/SS-120030778](http://dx.doi.org/10.1081/SS-120030778). 39 (2010) 1611–1629. <https://doi.org/10.1081/SS-120030778>.
- [85] J. Pattanayak, K. Mondal, S. Mathew, S.B. Lalvani, A parametric evaluation of the removal of As(V) and As(III) by carbon-based adsorbents, 2000.
- [86] P.K. Sahoo, K. Kim, M.A. Powell, S.M. Equeenuddin, Recovery of metals and other beneficial products from coal fly ash: a sustainable approach for fly ash management, *Int. J. Coal Sci. Technol.* 3 (2016) 267–283. <https://doi.org/10.1007/S40789-016-0141-2/TABLES/4>.
- [87] O. Font, X. Querol, R. Juan, R. Casado, C.R. Ruiz, Á. López-Soler, P. Coca, F.G. Peña, Recovery of gallium and vanadium from gasification fly ash, *J. Hazard. Mater.* 139 (2007) 413–423. <https://doi.org/10.1016/J.JHAZMAT.2006.02.041>.
- [88] A. Hernández-Expósito, J.M. Chimenos, A.I. Fernández, O. Font, X. Querol, P.

- Coca, F. García Peña, Ion flotation of germanium from fly ash aqueous leachates, *Chem. Eng. J.* 118 (2006) 69–75. <https://doi.org/10.1016/J.CEJ.2006.01.012>.
- [89] H. Kamran Haghghi, M. Irannajad, A. Fortuny, A.M. Sastre, Recovery of germanium from leach solutions of fly ash using solvent extraction with various extractants, *Hydrometallurgy.* 175 (2018) 164–169. <https://doi.org/10.1016/J.HYDROMET.2017.11.006>.
- [90] Y. Luo, S. Ma, C. Liu, Z. Zhao, S. Zheng, X. Wang, Effect of particle size and alkali activation on coal fly ash and their role in sintered ceramic tiles, *J. Eur. Ceram. Soc.* 37 (2017) 1847–1856. <https://doi.org/10.1016/j.jeurceramsoc.2016.11.032>.
- [91] Y. Luo, S. Zheng, S. Ma, C. Liu, X. Wang, Ceramic tiles derived from coal fly ash: Preparation and mechanical characterization, *Ceram. Int.* 43 (2017) 11953–11966. <https://doi.org/10.1016/J.CERAMINT.2017.06.045>.
- [92] K. Namkane, W. Naksata, S. Thiansem, P. Sooksamiti, O. anong Arqueropanyo, Utilization of coal bottom ash as raw material for production of ceramic floor tiles, *Environ. Earth Sci.* 75 (2016) 1–11. <https://doi.org/10.1007/S12665-016-5279-0/TABLES/6>.
- [93] R. Ji, Z. Zhang, C. Yan, M. Zhu, Z. Li, Preparation of novel ceramic tiles with high Al<sub>2</sub>O<sub>3</sub> content derived from coal fly ash, *Constr. Build. Mater. C* (2016) 888–895. <https://doi.org/10.1016/J.CONBUILDMAT.2016.04.014>.
- [94] X. Querol, N. Moreno, J.C. Umaa, A. Alastuey, E. Hernández, A. López-Soler, F. Plana, Synthesis of zeolites from coal fly ash: an overview, *Int. J. Coal Geol.*

- 50 (2002) 413–423. [https://doi.org/10.1016/S0166-5162\(02\)00124-6](https://doi.org/10.1016/S0166-5162(02)00124-6).
- [95] Synthesis of nano-crystalline zeolite-A and zeolite-X from Indian coal fly ash, (n.d.).
- [96] C. Belviso, E. Agostinelli, S. Belviso, F. Cavalcante, S. Pascucci, D. Peddis, G. Varvaro, S. Fiore, Synthesis of magnetic zeolite at low temperature using a waste material mixture: Fly ash and red mud, *Microporous Mesoporous Mater.* 202 (2015) 208–216. <https://doi.org/10.1016/J.MICROMESO.2014.09.059>.
- [97] R.M. Barrer, Zeolites and their synthesis, *Zeolites.* 1 (1981) 130–140. [https://doi.org/10.1016/S0144-2449\(81\)80001-2](https://doi.org/10.1016/S0144-2449(81)80001-2).
- [98] H. Shao, K. Liang, F. Zhou, G. Wang, F. Peng, Characterization of cordierite-based glass-ceramics produced from fly ash, *J. Non. Cryst. Solids.* 337 (2004) 157–160. <https://doi.org/10.1016/J.JNONCRY SOL.2004.04.003>.
- [99] M. Zhu, R. Ji, Z. Li, H. Wang, L.L. Liu, Z. Zhang, Preparation of glass ceramic foams for thermal insulation applications from coal fly ash and waste glass, *Constr. Build. Mater.* 112 (2016) 398–405. <https://doi.org/10.1016/J.CONBUILDMAT.2016.02.183>.
- [100] Q. Ma, Q. Wang, L. Luo, C. Fan, Preparation of high strength and low-cost glass ceramic foams with extremely high coal fly ash content, *IOP Conf. Ser. Mater. Sci. Eng.* 397 (2018) 012071. <https://doi.org/10.1088/1757-899X/397/1/012071>.
- [101] M. Kim, H. Ko, T. Kwon, H.C. Bae, C.H. Jang, B.U. Heo, S.M. Park, Development of novel refractory ceramic continuous fibers of fly ash and comparison of mechanical properties with those of E-glass fibers using the

- Weibull distribution, *Ceram. Int.* 46 (2020) 13255–13262.  
<https://doi.org/10.1016/j.ceramint.2020.02.102>.
- [102] R. Sukkae, S. Suebthawilkul, B. Cherdhirunkorn, Utilization of coal fly ash as a raw material for refractory production, *J. Met. Mater. Miner.* 28 (2018) 116–123. <https://doi.org/10.14456/jmmm.2018.16>.
- [103] A. Terzić, L. Andrić, V. Mitić, Mechanically activated coal ash as refractory bauxite shotcrete microfiller: Thermal interactions mechanism investigation, *Ceram. Int.* 40 (2014) 12055–12065.  
<https://doi.org/10.1016/j.ceramint.2014.04.045>.
- [104] S. Kumar, K. Kumar Singh, Synthesis of cordierite from fly ash and its refractory properties Utilization of Iron & Steel Plant Wastes View project Geopolymer View project, *Artic. J. Mater. Sci. Lett.* (2000).  
<https://doi.org/10.1023/A:1006737932563>.
- [105] L.F. Vilches, C. Fernández-Pereira, J. Olivares del Valle, J. Vale, Recycling potential of coal fly ash and titanium waste as new fireproof products, *Chem. Eng. J.* 95 (2003) 155–161. [https://doi.org/10.1016/S1385-8947\(03\)00099-8](https://doi.org/10.1016/S1385-8947(03)00099-8).
- [106] M. Senthil Kumar, M. Vanmathi, G. Senguttuvan, R. V. Mangalaraja, G. Sakthivel, Fly Ash Constituent-Silica and Alumina Role in the Synthesis and Characterization of Cordierite Based Ceramics, *Silicon.* 11 (2019) 2599–2611.  
<https://doi.org/10.1007/s12633-018-0049-0>.
- [107] S. Wang, H. Wang, Z. Chen, R. Ji, L. Liu, X. Wang, Fabrication and characterization of porous cordierite ceramics prepared from fly ash and natural minerals, *Ceram. Int.* 45 (2019) 18306–18314.

- <https://doi.org/10.1016/J.CERAMINT.2019.06.043>.
- [108] K. Tabit, H. Hajjou, M. Waqif, L. Saâdi, Cordierite-Based Ceramics from Coal Fly Ash for Thermal and Electrical Insulations, *Silicon*. 13 (2021) 327–334. <https://doi.org/10.1007/s12633-020-00428-y>.
- [109] R. Chen, Y. Li, R. Xiang, S. Li, Effect of particle size of fly ash on the properties of lightweight insulation materials, *Constr. Build. Mater.* 123 (2016) 120–126. <https://doi.org/10.1016/j.conbuildmat.2016.06.140>.
- [110] Y. Dai, X. Gu, W. Dong, T. Luo, Preparation and properties of lightweight, high-strength insulation materials using fly ash floating beads, in: *Key Eng. Mater.*, Trans Tech Publications Ltd, 2016: pp. 599–603. <https://doi.org/10.4028/www.scientific.net/KEM.697.599>.
- [111] Standard Test Method for Linear Shrinkage of Preformed High-Temperature Thermal Insulation Subjected to Soaking Heat, (n.d.). <https://www.astm.org/c0356-17.html> (accessed December 10, 2021).
- [112] Standard Test Methods for Apparent Porosity, Water Absorption, Apparent Specific Gravity, and Bulk Density of Burned Refractory Brick and Shapes by Boiling Water 1, (n.d.). <https://doi.org/10.1520/C0020-00R10>.
- [113] Standard Test Methods for Cold Crushing Strength and Modulus of Rupture of Refractories 1, (n.d.). <https://doi.org/10.1520/C0133-97R08E01>.
- [114] Designation: C201 – 93 (Reapproved 2013) Standard Test Method for Thermal Conductivity of Refractories 1, (n.d.). <https://doi.org/10.1520/C0201-93R13>.
- [115] Power Sector at a Glance ALL INDIA | Government of India | Ministry of Power, (n.d.). <https://powermin.gov.in/en/content/power-sector-glance-all>

india (accessed March 19, 2022).

- [116] A.B. Mukherjee, R. Zevenhoven, P. Bhattacharya, K.S. Sajwan, R. Kikuchi, Mercury flow via coal and coal utilization by-products: A global perspective, *Resour. Conserv. Recycl.* 52 (2008) 571–591. <https://doi.org/10.1016/J.RESCONREC.2007.09.002>.
- [117] U. Bhattacharjee, T.C. Kandpal, Potential of fly ash utilisation in India, (n.d.).
- [118] R. Wasserman, A. Bentur, Effect of lightweight fly ash aggregate microstructure on the strength of concretes, *Cem. Concr. Res.* 27 (1997) 525–537. [https://doi.org/10.1016/S0008-8846\(97\)00019-7](https://doi.org/10.1016/S0008-8846(97)00019-7).
- [119] E. Mulder, A mixture of fly ashes as road base construction material, *Waste Manag.* 16 (1996) 15–20. [https://doi.org/10.1016/S0956-053X\(96\)00026-8](https://doi.org/10.1016/S0956-053X(96)00026-8).
- [120] C.T. Nhan, J.W. Graydon, D.W. Kirk, Utilizing coal fly ash as a landfill barrier material, *Waste Manag.* 16 (1996) 587–595. [https://doi.org/10.1016/S0956-053X\(96\)00108-0](https://doi.org/10.1016/S0956-053X(96)00108-0).
- [121] K.S. Rebeiz, A.S. Banko, A.P. Craft, Thermal Properties of Polymer Mortar Using Recycled PET and Fly Ash, *J. Mater. Civ. Eng.* 7 (1995) 129–133. [https://doi.org/10.1061/\(ASCE\)0899-1561\(1995\)7:2\(129\)](https://doi.org/10.1061/(ASCE)0899-1561(1995)7:2(129)).
- [122] H. Liu, X. Xiong, M. Li, Z. Wang, X. Wang, Y. Ma, L. Yuan, Fabrication and properties of mullite thermal insulation materials with in-situ synthesized mullite hollow whiskers, *Ceram. Int.* 46 (2020) 14474–14480. <https://doi.org/10.1016/J.CERAMINT.2020.02.245>.
- [123] A. Andrews, E. Nsiah-Baafi, S.K.Y. Gawu, P.A. Olubambi, Synthesis of high alumina refractories from lithomargic clay, *Ceram. Int.* 40 (2014) 6071–6075.

- <https://doi.org/10.1016/j.ceramint.2013.11.057>.
- [124] A. Andrews, J. Adam, S.K.Y. Gawu, Development of fireclay aluminosilicate refractory from lithomargic clay deposits, *Ceram. Int.* 39 (2013) 779–783. <https://doi.org/10.1016/j.ceramint.2012.06.091>.
- [125] *Materials Handbook*, Springer London, 2008. <https://doi.org/10.1007/978-1-84628-669-8>.
- [126] C. Leiva, C. Arenas, B. Alonso-Fariñas, L.F. Vilches, B. Peceño, M. Rodríguez-Galán, F. Baena, Characteristics of fired bricks with co-combustion fly ashes, *J. Build. Eng.* 5 (2016) 114–118. <https://doi.org/10.1016/j.job.2015.12.001>.
- [127] M. Sutcu, H. Alptekin, E. Erdogmus, Y. Er, O. Gencel, Characteristics of fired clay bricks with waste marble powder addition as building materials, *Constr. Build. Mater.* 82 (2015) 1–8. <https://doi.org/10.1016/j.conbuildmat.2015.02.055>.
- [128] R. Sarkar, N. Singh, S.K. Das, Effect of addition of pond ash and fly ash on properties of ash-clay burnt bricks, *Waste Manag. Res.* 25 (2007) 566–571. <https://doi.org/10.1177/0734242X07080114>.
- [129] X. Lingling, G. Wei, W. Tao, Y. Nanru, Study on fired bricks with replacing clay by fly ash in high volume ratio, *Constr. Build. Mater.* 19 (2005) 243–247. <https://doi.org/10.1016/j.conbuildmat.2004.05.017>.
- [130] R. Rajamma, R.J. Ball, L.A.C. Tarelho, G.C. Allen, J.A. Labrincha, V.M. Ferreira, Characterisation and use of biomass fly ash in cement-based materials, *J. Hazard. Mater.* 172 (2009) 1049–1060. <https://doi.org/10.1016/j.jhazmat.2009.07.109>.

- [131] R. Kurda, J.D. Silvestre, J. de Brito, Toxicity and environmental and economic performance of fly ash and recycled concrete aggregates use in concrete: A review, *Heliyon*. 4 (2018) e00611. <https://doi.org/10.1016/J.HELIYON.2018.E00611>.
- [132] W.D.A. Rickard, A. Van Riessen, P. Walls, Thermal Character of Geopolymers Synthesized from Class F Fly Ash Containing High Concentrations of Iron and  $\alpha$ -Quartz, *Int. J. Appl. Ceram. Technol.* 7 (2010) 81–88. <https://doi.org/10.1111/J.1744-7402.2008.02328.X>.
- [133] F. Goga, R. Dudric, C. Cormos, F. Imre, L. Bizo, R. Misca, Fly ash from thermal power plant, raw material for glass-ceramic, *Environ. Eng. Manag. J.* 12 (2013) 337–342. <https://doi.org/10.30638/eemj.2013.041>.
- [134] D. Eliche-Quesada, J. Leite-Costa, Use of bottom ash from olive pomace combustion in the production of eco-friendly fired clay bricks, *Waste Manag.* 48 (2016) 323–333. <https://doi.org/10.1016/j.wasman.2015.11.042>.
- [135] K. Muthusamy, A.M.A. Budiea, N.W. Azhar, M.S. Jaafar, S.M.S. Mohsin, N.F. Arifin, F. Mat Yahaya, Durability properties of oil palm shell lightweight aggregate concrete containing fly ash as partial cement replacement, *Mater. Today Proc.* 41 (2021) 56–60. <https://doi.org/10.1016/J.MATPR.2020.10.1003>.
- [136] S.B. Hassan, V.S. Aigbodion, Effect coal ash on some refractory properties of alumino-silicate (Kankara) clay for furnace lining, *Egypt. J. Basic Appl. Sci.* 1 (2014) 107–114. <https://doi.org/10.1016/j.ejbas.2014.04.001>.
- [137] F.A.C. Milheiro, M.N. Freire, A.G.P. Silva, J.N.F. Holanda, Densification behaviour of a red firing Brazilian kaolinitic clay, *Ceram. Int.* 31 (2005) 757–

763. <https://doi.org/10.1016/J.CERAMINT.2004.08.010>.
- [138] P. Ptáček, D. Kubátová, J. Havlica, J. Brandštetr, F. Šoukal, T. Opravil, The non-isothermal kinetic analysis of the thermal decomposition of kaolinite by thermogravimetric analysis, *Powder Technol.* 204 (2010) 222–227. <https://doi.org/10.1016/j.powtec.2010.08.004>.
- [139] E. Laita, B. Bauluz, M.J. Mayayo, A. Yuste, Mineral and textural transformations in mixtures of Al-rich and Al–K-rich clays with firing: Refractory potential of the fired products, *Ceram. Int.* 47 (2021) 14527–14539. <https://doi.org/10.1016/J.CERAMINT.2021.02.032>.
- [140] I. Hager, M. Sitarz, K. Mróz, Fly-ash based geopolymer mortar for high-temperature application – Effect of slag addition, *J. Clean. Prod.* 316 (2021) 128168. <https://doi.org/10.1016/J.JCLEPRO.2021.128168>.
- [141] A.K. CHAKRABORTY, D.K. GHOSH, Reexamination of the Kaolinite-to-Mullite Reaction Series, *J. Am. Ceram. Soc.* 61 (1978) 170–173. <https://doi.org/10.1111/j.1151-2916.1978.tb09264.x>.
- [142] M.S. Conconi, M. Morosi, J. Maggi, P.E. Zalba, F. Cravero, N.M. Rendtorff, Thermal behavior (TG-DTA-TMA), sintering and properties of a kaolinitic clay from Buenos Aires Province, Argentina, *Ceramica.* 65 (2019) 227–235. <https://doi.org/10.1590/0366-69132019653742621>.
- [143] M.A.G. Elngar, F.M. Mohamed, G. Asrar, C.M. Sharaby, M.E.H. Shalabi, Effect of additives on the performance of the fire-clay refractory bricks, *Eurasian Chem. J.* 12 (2010) 171–179. <https://doi.org/10.18321/ectj210>.
- [144] E.M. Hadi, S.I. Hussein, A sustainable method for Porous refractory ceramic

- Manufacturing from kaolin by adding of burned and raw wheat straw, in: Energy Procedia, Elsevier Ltd, 2019: pp. 241–253. <https://doi.org/10.1016/j.egypro.2018.11.187>.
- [145] E. Ruh, J.S. Mcdowell, Standard Method of Test for Thermal Conductivity of Re-fractories, American Society for Testing Materials, 1957.
- [146] Fireclay Brick, Firebricks, Super Duty Fire Bricks, High Duty Fire Brick, Refractory Hard Bricks, refractory bricks for high demands, high quality refractory products | [www.KTRefractories.com](http://www.KTRefractories.com), (n.d.). <http://www.ktrefractories.com/Fireclay-Bricks.cfm> (accessed January 8, 2022).
- [147] Fire Clay Bricks for Sale In RS Refractory Bricks Manufacturer, (n.d.). <https://rsrefractoryfirebrick.com/fire-clay-bricks-for-sale/> (accessed December 8, 2021).
- [148] C.Y. Chen, G.S. Lan, W.H. Tuan, Preparation of mullite by the reaction sintering of kaolinite and alumina, J. Eur. Ceram. Soc. 20 (2000) 2519–2525. [https://doi.org/10.1016/S0955-2219\(00\)00125-4](https://doi.org/10.1016/S0955-2219(00)00125-4).
- [149] R.M. German AE Pavan Suri AE Seong Jin Park, R.M. German, P. Suri, S.J. Park, Review: liquid phase sintering, J Mater Sci. 44 (2009) 1–39. <https://doi.org/10.1007/s10853-008-3008-0>.
- [150] K. Akpomie, Effect of cassava peel on the insulating properties of ogugu clay deposit Mark Abuh Projects Development institute(PRODA), federal ministry of science and Technology,..., 2016. <https://www.researchgate.net/publication/312611250>.
- [151] L. Aouba, C. Bories, M. Coutand, B. Perrin, H. Lemerrier, Properties of fired

- clay bricks with incorporated biomasses: Cases of Olive Stone Flour and Wheat Straw residues, *Constr. Build. Mater.* 102 (2016) 7–13. <https://doi.org/10.1016/J.CONBUILDMAT.2015.10.040>.
- [152] M. Dondi, F. Mazzanti, P. Principi, M. Raimondo, G. Zanarini, Errata for “Thermal Conductivity of Clay Bricks,” *J. Mater. Civ. Eng.* 16 (2004) 287–287. [https://doi.org/10.1061/\(asce\)0899-1561\(2004\)16:3\(287\)](https://doi.org/10.1061/(asce)0899-1561(2004)16:3(287)).
- [153] J. García-Ten, M.J. Orts, A. Saburit, G. Silva, Thermal conductivity of traditional ceramics: Part II: Influence of mineralogical composition, *Ceram. Int.* 36 (2010) 2017–2024. <https://doi.org/10.1016/J.CERAMINT.2010.05.013>.
- [154] A. Khalfaoui, S. Kacim, M. Hajjaji, Sintering mechanism and ceramic phases of an illitic–chloritic raw clay, *J. Eur. Ceram. Soc.* 26 (2006) 161–167. <https://doi.org/10.1016/J.JEURCERAMSOC.2004.10.030>.
- [155] K. Wang, H. Wang, Y. Zhou, G. Li, Y. Wu, J. Hao, Y. Tian, Preparation and characterization of low-cost high-performance mullite-quartz ceramic proppants for coal bed methane wells, *IEEE J. Sel. Top. Quantum Electron.* 25 (2018) 957–961. <https://doi.org/10.1515/secm-2017-0142>.
- [156] J.R.K. Murthy, Semi-silica—its properties and uses, *Trans. Indian Ceram. Soc.* 26 (1967) 153–154. <https://doi.org/10.1080/0371750X.1967.10855601>.
- [157] Standard Classification of Insulating Firebrick, (n.d.). <https://www.astm.org/c0155-97r18.html> (accessed February 4, 2022).
- [158] Refractories for the Cement Industry, (2020). <https://doi.org/10.1007/978-3-030-21340-4>.
- [159] A.L. Yurkov, L.M. Aksel’rod, PROPERTIES OF HEAT-INSULATING

MATERIALS (A REVIEW) 1, (2005) 18–22.

- [160] M. Temimi, J.P. Camps, M. Laquerbe, Valorization of fly ash in the cold stabilization of clay materials, *Resour. Conserv. Recycl.* 15 (1995) 219–234. [https://doi.org/10.1016/0921-3449\(95\)00038-0](https://doi.org/10.1016/0921-3449(95)00038-0).
- [161] A. Durán-Herrera, C.A. Juárez, P. Valdez, D.P. Bentz, Evaluation of sustainable high-volume fly ash concretes, *Cem. Concr. Compos.* 33 (2011) 39–45. <https://doi.org/10.1016/J.CEMCONCOMP.2010.09.020>.
- [162] I. Jedidi, S. Khemakhem, S. Saïdi, A. Larbot, N. Elloumi-Ammar, A. Fourati, A. Charfi, A. Ben Salah, R. Ben Amar, Preparation of a new ceramic microfiltration membrane from mineral coal fly ash: Application to the treatment of the textile dyeing effluents, *Powder Technol.* 208 (2011) 427–432. <https://doi.org/10.1016/J.POWTEC.2010.08.039>.
- [163] S. Wang, G.Q. Lu, Effect of chemical treatment on ni/fly-ash catalysts in methane reforming with carbon dioxide, *Stud. Surf. Sci. Catal.* 167 (2007) 275–280. [https://doi.org/10.1016/S0167-2991\(07\)80144-3](https://doi.org/10.1016/S0167-2991(07)80144-3).
- [164] V.C. Pandey, N. Singh, Impact of fly ash incorporation in soil systems, *Agric. Ecosyst. Environ.* 136 (2010) 16–27. <https://doi.org/10.1016/J.AGEE.2009.11.013>.
- [165] D. Eliche-Quesada, J.A. Sandalio-Pérez, S. Martínez-Martínez, L. Pérez-Villarejo, P.J. Sánchez-Soto, Investigation of use of coal fly ash in eco-friendly construction materials: fired clay bricks and silica-calcareous non fired bricks, *Ceram. Int.* 44 (2018) 4400–4412. <https://doi.org/10.1016/j.ceramint.2017.12.039>.

- [166] J. Li, W. Cao, G. Chen, The heat transfer coefficient of new construction – Brick masonry with fly ash blocks, *Energy*. 86 (2015) 240–246. <https://doi.org/10.1016/J.ENERGY.2015.04.028>.
- [167] N.K. Debnath, V. Acharya, S. Jangu, P. Singh, M.R. Majhi, V.K. Singh, Characterization of fly ash solid-waste for low-cost insulation refractory bricks, *Mater. Today Proc.* 47 (2021) 1598–1600. <https://doi.org/10.1016/J.MATPR.2021.04.265>.
- [168] N.K. Debnath, S. Boga, A. Singh, M.R. Majhi, V.K. Singh, Fabrication of low to high duty fireclay refractory bricks from lignite fly ash, *Ceram. Int.* (2022). <https://doi.org/10.1016/J.CERAMINT.2022.01.076>.
- [169] G. Görhan, O. Şimşek, Porous clay bricks manufactured with rice husks, *Constr. Build. Mater.* 40 (2013) 390–396. <https://doi.org/10.1016/j.conbuildmat.2012.09.110>.
- [170] A. Terzić, L. Pavlović, Z. Radojević, V. Pavlović, V. Mitić, Novel utilization of fly ash for high-temperature mortars: Phase composition, microstructure and performances correlation, *Int. J. Appl. Ceram. Technol.* 12 (2015) 133–146. <https://doi.org/10.1111/ijac.12135>.
- [171] M. Dondi, G. Ercolani, G. Guarini, M. Raimondo, Orimulsion fly ash in clay bricks—part 1: composition and thermal behaviour of ash, *J. Eur. Ceram. Soc.* 22 (2002) 1729–1735. [https://doi.org/10.1016/S0955-2219\(01\)00493-9](https://doi.org/10.1016/S0955-2219(01)00493-9).
- [172] A. Terzić, L. Pavlović, L. Miličić, Evaluation of lignite fly ash for utilization as component in construction materials, *Int. J. Coal Prep. Util.* 33 (2013) 159–180. <https://doi.org/10.1080/19392699.2013.776960>.

- [173] A.M. Rashad, Alkali-activated metakaolin: A short guide for civil Engineer – An overview, *Constr. Build. Mater.* 41 (2013) 751–765. <https://doi.org/10.1016/J.CONBUILDMAT.2012.12.030>.
- [174] G.W. BRINDLEY, M. NAKAHIRA, Kinetics of Dehydroxylation of Kaolinite and Halloysite, *J. Am. Ceram. Soc.* 40 (1957) 346–350. <https://doi.org/10.1111/J.1151-2916.1957.TB12549.X>.
- [175] F.A.C. Milheiro, M.N. Freire, A.G.P. Silva, J.N.F. Holanda, Densification behaviour of a red firing Brazilian kaolinitic clay, *Ceram. Int.* 31 (2005) 757–763. <https://doi.org/10.1016/j.ceramint.2004.08.010>.
- [176] Y.F. Chen, M.C. Wang, M.H. Hon, Phase transformation and growth of mullite in kaolin ceramics, *J. Eur. Ceram. Soc.* 24 (2004) 2389–2397. [https://doi.org/10.1016/S0955-2219\(03\)00631-9](https://doi.org/10.1016/S0955-2219(03)00631-9).
- [177] G.W. BRINDLEY, M. NAKAHIRA, The Kaolinite-Mullite Reaction Series: I, A Survey of Outstanding Problems, *J. Am. Ceram. Soc.* 42 (1959) 311–314. <https://doi.org/10.1111/j.1151-2916.1959.tb14314.x>.
- [178] V. Nastro, D. Vuono, M. Guzzo, G. Niceforo, I. Bruno, P. De Luca, Characterisation of raw materials for production of ceramics, *J. Therm. Anal. Calorim.* 84 (2006) 181–184. <https://doi.org/10.1007/s10973-005-7206-6>.
- [179] Z. Zhang, Y.C. Wong, A. Arulrajah, S. Horpibulsuk, A review of studies on bricks using alternative materials and approaches, *Constr. Build. Mater.* 188 (2018) 1101–1118. <https://doi.org/10.1016/J.CONBUILDMAT.2018.08.152>.
- [180] A. Tiwari, M.R. Alenezi, S.C. Jun, *Advanced composite materials*, wiley, 2016. <https://doi.org/10.1002/9781119242666>.

- [181] fire clay insulation brick, fire clay insulating brick, fire clay light weight insulation brick-Zhengzhou Sunrise Refractory Co., Ltd., (n.d.). <https://www.sunriserefractory.com/insulation-series-brick/fire-clay-insulation-brick.html#technical> (accessed December 13, 2021).
- [182] J.-E.F.M. Ibrahim, D.A. Shushkov, M. Tihtih, O.B. Kotova, építôanyag építôanyag □ Journal of Silicate Based and Composite Materials Effect of composition and sintering temperature on thermal properties of zeolite-alumina composite materials, (n.d.). <https://doi.org/10.14382/epitoanyag-jsbcm.2020.21>.
- [183] A.R. Pal, S. Bharati, N.V.S. Krishna, G.C. Das, P.G. Pal, The effect of sintering behaviour and phase transformations on strength and thermal conductivity of disposable tundish linings with varying compositions, *Ceram. Int.* 38 (2012) 3383–3389. <https://doi.org/10.1016/J.CERAMINT.2011.12.049>.
- [184] Insulating Fire Brick for Sale - RS Refractory Bricks Manufacturer, (n.d.). <https://rsrefractoryfirebrick.com/insulating-fire-brick-for-sale/> (accessed December 13, 2021).

## List of Publications

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1. **N.K. Debnath**, V. Acharya, S. Jangu, P. Singh, M.R. Majhi, V.K. Singh, *Characterization of fly ash solid-waste for low-cost insulation refractory bricks*, Mater. Today Proc. 47 (2021) 1598–1600. <https://doi.org/10.1016/J.MATPR.2021.04.265>
2. **N.K. Debnath**, S. Boga, A. Singh, M.R. Majhi, V.K. Singh, *Fabrication of low to high duty fireclay refractory bricks from lignite fly ash*, Ceram. Int. (2022). <https://doi.org/10.1016/J.CERAMINT.2022.01.076>.
3. **N.K. Debnath**, V. K. Pabbisetty, K. Sarkar, A. Singh, M.R. Majhi, V.K. Singh, *Preparation and characterization of semi-silica insulation refractory by utilizing lignite fly ash waste materials*, Journal of Construction and Building Materials (Under review).