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Around the world, thousands of tons of polyurethane (PU) foam waste accumulate in municipal dumps from sources such as car disposal industries. Due to its low density and high volume, polyurethane foam waste is difficult to treat and dispose of in landfill. In this study, we developed a novel and environmentally friendly disposal method for PU waste by mixing it with coal to produce a new composite fuel called Eco-fuel. Eco-fuel is made by briquetting a mixture of PU with coal (10:90 by weight) under high pressure. The combustion characteristics and emission gases of Eco-fuel were compared with those of biobriquette (a 20:80, by weight, briquette of biomass and coal). The combustion characteristics of Eco-fuel briquette fuel were improved with the addition of PU foam. Although PU has a higher nitrogen content (6 wt %) compared to biomass (1.4 wt %) and coal (1 wt %), the emission of NO_x from the combustion of Eco-fuel did not increase. We discovered that the combustion of PU results in the conversion of nitrogen to NH₃, and then NH₃ reacts with NO_x to neutralize to N₂.

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