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## EXPLORING THE USE OF MODERN FLY ASH MATERIALS FROM CHINESE POWER PLANTS IN ROAD AND AIRFIELD INFRASTRUCTURE

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### Abstract

Ash and slag waste present a significant environmental threat on a global scale, requiring an international solution. Extensive analysis has revealed the potential utilization of waste from fuel and energy complexes across various sectors. Notably, fly ash derived from ash and slag waste generated by thermal power plants in China has emerged as a widely employed material. This fly ash can be further processed to extract fibers, which find applications in numerous industries.

In China, fly ash from thermal power plants serves as the primary source for producing nano-tubes. These nano-tubes are utilized as additives in cement-concrete mixtures, as well as in the manufacturing of ceramic products and heat-insulating materials. Additionally, the fiber obtained from fly ash in Chinese thermal power plants has found extensive use in road and airfield construction. Its incorporation enhances the operational and economic performance of various road construction projects. The utilization of recycled fly ash in both cold and hot road paving techniques not only enhances operational properties but also improves strength indicators.

Overall, the analysis from this paper demonstrates the significant potential for utilizing waste materials from fuel and energy complexes, with particular focus on fly ash from thermal power plants in China. The subsequent extraction of fibers and the manufacturing of nano-tubes hold promise for various applications in cement-concrete mixtures, ceramic products, heat insulation, road construction, and airfield development. These advancements not only contribute to improved operational and economic efficiency but also enhance the strength characteristics of the materials employed.

*Key words:* additives, ash and slag waste, building materials, economic development, environment protection, road construction

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