

Lok Sabha Question Dy. No. 14998

Lok Sabha question regarding waterproofing material from fly ash, please see the responses below. I hope you will find the responses satisfactory.

a) **whether it is true that IIT-Hyderabad has developed cheap waterproofing material from fly-ash;**

Yes, we, at IIT- Hyderabad, have developed a method to create superhydrophobic (waterproof) fly-ash based powders using a cheap and scalable approach. The results were published in an international journal, ChemistrySelect (Mahanta, Urbashi, Mudrika Khandelwal, and Atul S. Deshpande. "Wetting Transition from Lotus Leaf to Rose Petal using Modified Fly Ash." *ChemistrySelect* 4.27 (2019): 7936-7942. <https://doi.org/10.1002/slct.201901535>)

(b) **if so, details of the research and to what extent this helps in cheaper waterproofing solutions; and**

We have successfully prepared superhydrophobic fly-ash powders using fly-ash from various sources using stearic acid as a surface modifying agent. We are currently working on viable, robust, and durable coatings for water harvesting and waterproofing applications.

based on our results, we assume that this process will be far cheaper than currently available commercial products, however, we will be able to provide cost analysis only after completing the research on the development of coatings.

(c) **the steps taken for commercially exploit this research?**

A number of small scale industries as well as multi-national companies including LafargeHolcim (Indian subsidiary, ACC cement) had shown interest, however, so far none of these enquiries have materialized into technology transfer