Abstract

A novel cementation technology whereby moist soil and added thermoplastic polymer particles are mixed, heated, and allowed to cool, enables healable, polymeric bonding of the soil grains. Experimental results show that the strength of the resulting material is dependent on polymer content, soil gradation and mineralogy, surface roughness, and relative particle sizes. The relatively low temperatures needed for bonding translate to the possibility of utilizing nonstandard techniques to impose heating.

Biography

Julio Valdes is a Distinguished Professor of Civil, Construction, and Environmental Engineering at San Diego State University. In 2002 he earned a PhD degree in Civil and Environmental Engineering from the Georgia Institute of Technology, and was hired that year as a faculty member at SDSU. Dr. Valdes’ scholarship focuses on understanding the mechanisms that govern the behavior of particulate materials, with emphasis on soils and aggregates. His group uses experimental techniques to identify emergent phenomena
and processes, knowledge of which are utilized to develop innovative techniques for the evaluation and control of particulate media systems.

https://structures.ucsd.edu/seminars

Sponsored by Professor John McCartney
For more information on this seminar, contact Amber Samaniego, at 858-534-4282 or a2samaniego@ucsd.edu