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Professor Chungsik Yoo is a Professor of Civil and Environmental Engineering at Sungkyunkwan University in Korea. He obtained his Ph.D. in Civil Engineering from the Pennsylvania State University in 1993. He worked as a Geotechnical Engineer at Mueser Rutledge Consulting Engineers in USA and subsequently became a faculty member at Sungkyunkwan University in 1994. Prof. Yoo is a recipient of 2010 IGS Award from the International Geosynthetic Society (IGS) and has co-authored over 400 technical papers in geotechnical engineering based on laboratory testing, numerical modeling, and field testing. He is serving as President of the International Geosynthetics Society for 2018-2022. Prof. Yoo is active in international tunneling community and has served as an Executive Council member of International Tunnelling and Underground Space Association. He is also serving as an Editorial Board Member for numerous international journals, such as Geotextiles and Geomembranes, Geosynthetics International, Computers and Geotechnics, Tunnelling and Underground Space Technology, and Soils and Foundations.

Geosynthetics : Fundamental Materials to Sustainable Construction

Abstracts

Geosynthetics engineering has made phenomenal advances during the last decade in areas of manufacturing as well as practical applications. As a result, geosynthetics are now being recognized as essential construction materials that can be used to facilitate construction, ensure better performance of the structures and reduce the long-term maintenance in routine civil engineering works. Geosynthetics have also become fundamental to sustainable development as they reduce carbon foot print generated by infrastructure development by reducing the use of natural resources. The creative use of geosynthetics in geo-engineering practice is expected to continuously expand as innovative materials and products are becoming available.

In this paper, fundamentals of geosynthetics are introduced within the frame work of routine civil engineering works. A variety of geosynthetic products available to civil engineers to solve a wide range of engineering problems are briefly presented along with their functions and possible applications. Examples of how geosynthetics can be used in routine civil engineering and mining projects to enhance the structural performance and to reduce carbon foot print. Practical applications of geosynthetics relevant for many civil engineering structures are also highlighted with emphasis on the issues associated with global warming.