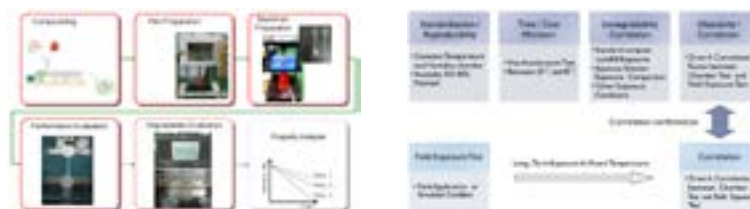


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## Application and Sustainability of PLA Based Geosynthetiics to Environmental Fields by Considering of Evaluation Adaptability through Biodegradability Test

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Eco-friendly environmental concept in geosynthetics application fields, green revolution is rapidly increasing in every construction sites e.g., green structure, green installation, green industry etc. especially on the eco-environmental point of view. Biodegradable geosynthetics as a green material could be made from eco-environmental polymeric resins and they must maintain their needed performance during service period in the real field application. The basic technology trend and concept of biodegradable geosynthetics is reflected to eco-environmental growth in civil engineering fields. The important concept of biodegradable geosynthetics is focused on their degradable behaviors of used resins and needed performance for engineering qualification with evaluated technical data. Therefore, it is very important to select what kind of raw resin, additives and plasticizer to control the biodegradability. In this study, to consider this, environmental availability of biodegradable geosynthetics by PLA (poly lactic acid) was introduced and reviewed to be related to the quantitative analysis of degradability as long as biodegradable geosynthetics are installed in soil structure. And technical availability of biodegradable geosynthetics was introduced as green geosynthetics and reviewed to be related to analysis of degradability by conceptual consideration. The important concept of biodegradable geosynthetics is focused on their degradable behaviors of used resins and needed performance for engineering qualification with technical data of designing. Through the overall review of degradability of biodegradable geosynthetics, it is seen that biodegradable mechanism could be controlled theoretically and more restricted design technology must be adopted in the quality control and assurance of manufacturing procedure in the installation field. Finally, to evaluate the degradable performance of biodegradable geosynthetics, new test concept and the needed evaluation items should be selected by considering influence parameters on the long-term performance under real field installation conditions. PLA based geosynthetics will be used in the special and alternative application fields if biodegradable mechanism could be controlled.



## Biography

Han-Yong Jeon is a professor of geosynthetics/technical organic materials of Inha University, Incheon, Korea(South). He was the 32nd President of Korean Fiber Society (2014–2015) and 6th President of Korean Geosynthetics Society and a Council Member of International Geosynthetics Society, 2008–2012. Also, he is an Executive Editorial Board of "Fibers and Polymers". He has published more than 895 Proceedings in domestic and international conferences. He wrote 21 text books including 'GEOSYNTHETICS' and also published 150 papers in domestic & international journals. He has awards of Marquis Who'sWho-Science and Engineering(USA) in 2003–2018 and Top 100 Scientists in the World( 2005/2011/2013) of IBC(International Biographical Centre, UK). Also, he got the 33rd Academy Award of Korean Fiber Society in 2006 and "Excellent Paper Award of 2012" by The Korean Federation of Science and Technology Societies.

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