How the Elements of Nature Influence the Failures of Plastics

It is clear to see the visible changes in a plastic component that sits outside in the sunlight. The color fades and the surface may begin to crack. Additives can be incorporated into the manufacturing process to hinder the effects of the UV light. However, additives do not guarantee a failure will not occur. In addition to sunlight, the other elements of nature, such as water, can also degrade plastic until it fails. The flow of water can not only degrade the plastic itself but also introduce contamination that can also affect the polymeric backbone. This presentation will address multiple failures of plastic components due to environmental exposure including sunlight and water.

About the Presenter

Amy Meyers Wells, Ph.D., is a senior polymer scientist for Applied Technical Services (ATS) in Marietta, GA. She received her BS in Chemistry from the University of West Florida and earned a PhD in Chemistry from Georgia Institute of Technology. Prior to entering the field of failure analysis in 2008 with McSwain Engineering, Dr. Wells worked for the Intel Corporation in Hillsboro, Oregon as a Senior Process Engineer and taught general and organic chemistry at the collegiate level. Dr. Wells has extensive experience using a variety of analytical techniques in the failure analysis of coating systems, batteries, plastics, oils/greases/lubricants, along with a variety of other consumer products. In addition, she has authored several peer-reviewed articles, was awarded one patent, and has presented her work at multiple national conferences.