



## 경북지역 풍력에너지 클러스터 인재양성사업

위 연구사업에서 다음과 같이 특강을 개최하오니 많은 참석 부탁드립니다.

강의명	<p><b>Introduction to Modern Electronics Packaging and to the Reliability Challenges When Using Lead Free Solders</b>          무납결합을 이용한 최근의 전자패키징 신뢰 성향상에 관하여</p>
강연자	<p>Prof. Jeffrey C. Suhling          (Auburn University)</p>
일정	<p>일시 : 2023.03.08(수) 15:00 - 16:00          장소 : 영남대학교 자동차관 112호</p>
내용	<p><u>Abstract</u>          Modern electronic products such as cell phones, laptops, computer servers, and engine control modules typically contain a large number of electronic components that are attached to a printed circuit board using thousands of tiny solder joints. These solder joints provide both mechanical and electrical connections, and the failure (fracture) of just one of them can cause a product to fail irreparably. Microelectronic solders have historically been composed of tin-lead alloys. However, environmental concerns and legislation adopted in Europe and Asia has led to a nearly universal world-wide transition to lead free solders (so-called SAC alloys) over the past 15 years. Several engineering challenges have accompanied the transition to lead free electronics. One of the most severe has been that lead free solders are highly susceptible to aging effects, where their mechanical behavior and failure properties degrade with time when exposed to isothermal or variable temperature environments. Such degradations are caused by the unstable microstructures present at very low temperatures, and they can lead to a significant reduction in the reliability of electronic products with time. In this talk, an overview of modern electronics packaging will first be presented. This will be followed by a discussion of the reliability challenges occurring when using lead free electronics, along with highlights of our research on the effects of aging on the mechanical behavior of lead free solders. This work has involved a combination of experimental material characterization and measurements of microstructural evolution, as well as constitutive model development and finite element predictions of reliability. Methods to mitigate aging effects will also be discussed.</p> <p>지원: 산업통상자원부, 에너지기술평가원, 경북TP, 풍력인재양성지원사업</p>

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