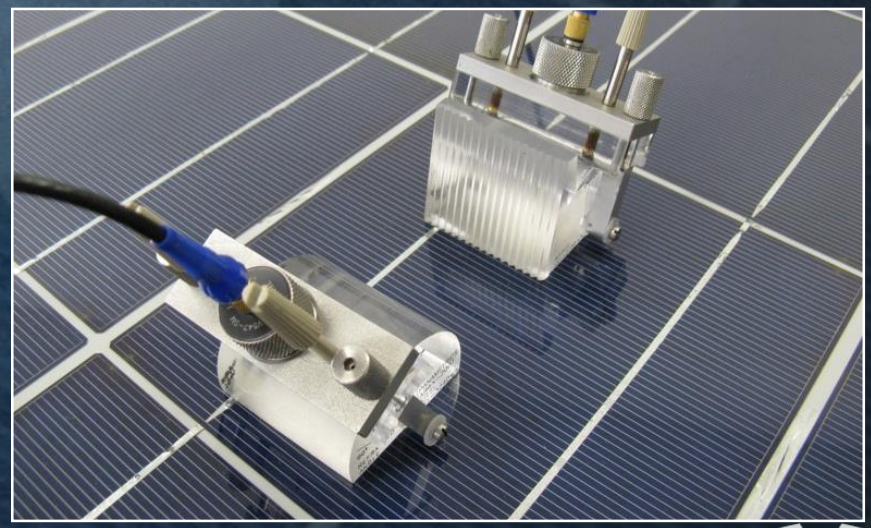
ULTRASONIC DELAMINATION PREDICTION DEVICE

Studies have shown that >80%* of solar modules show delamination after 15 years in the field. Delamination reduces light absorption and thus module efficiency. It also enhances the moisture ingress into the module, which leads to a faster corrosion of cells and metallization. Delamination can fully destroy a module! So delamination is a major concern for module manufacturers and solar investors. Nevertheless, there is currently no non-destructive method which can predict delamination.



We work on the development of such a method based on guided ultrasonic waves. In this project we want to transform that method to a portable device, which can be used in module production line as well as in a solar field. Module manufacturers and investors can then check module quality and use that information for optimization and risk management. The goal is to enable cheaper, more reliable solar energy.

AMERICAN MADE SOLAR PRIZE

*Source: M. Koentges et al., IEA PVPS Task 13, External final report, IEA-PVPS March 2014

Image Sources: Haque, A., et al., *Fault diagnosis of photovoltaic modules. Energy Sci Eng*. 2019; 7: 622- 644
https://www.uea.ac.uk/about/sustainability/blog/-/asset_publisher/ySKO7wbGdMr2/content/pv-delamination-new-project [12/05/2019]