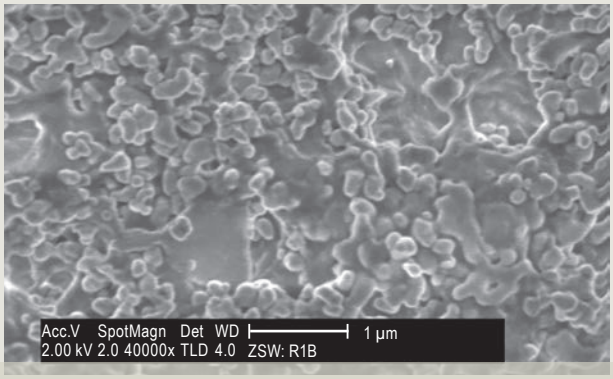
# // ZSW Photovoltaics Test Laboratory Solab: PV Module Backsheet Issues

// Chalking and cracking of a backsheet

## PV module backsheet issues might result in loss of performance and safety

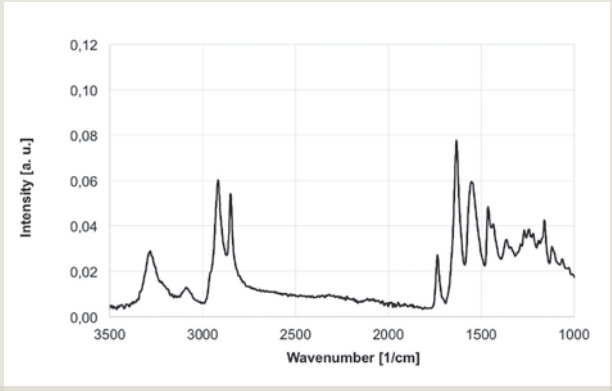
// Backsheet (BS) related abnormalities like chalking, delamination, or cracking can foster water ingression and corrosion, risking a loss of power output and safety
// It is necessary to distinguish between possible harmless chalking or discoloration and severe mechanical BS degradation




// SEM image of an eroded BS polymer surface with released $TiO_2$ pigments

## ZSW's backsheet performance analysis is based on a stepwise procedure

// On-site visual inspection of modules' BS (chalking, cracking, browning, corrosion, delamination)
// On-site non-destructive ATR-FITR spectroscopic inspection to identify higher risk BS polymers like polyamide
// Measurement of mechanical properties like elongation to break to quantify degree of BS embrittlement (lab)
// Measurement of peel strength to quantify remaining BS adhesion (lab)




// ATR-FTIR spectrum taken on-site from a BS polymer

## BS performance and risk evaluation

// Provides sound technical arguments for a successful warranty claim
// Allows qualification of proposed BS repair solutions

**Contact**
Claudia Brusdeylins
+49 711 7870-278
claudia.brusdeylins@zsw-bw.de

Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg
Certified according to DIN EN ISO 9001:2015
www.zsw-bw.de

2018-11