Analyzing additive degradation caused by UV light: Wet transfer that utilizes Poropare absorbency

Measurement challenges

Trying to assess additive degradation in films via the image by directly measuring the film can be nearly impossible due to electrostatic charging or an uneven matrix coating on the film surface. Also, trying to extract the additives by crushing the film will destroy positional information on where the additives are localized.

Approach

A solvent capable of dissolving the additives was poured onto Poropare and an image of the sample (film), which had been partly irradiated with UV light, was then transferred to Poropare before the solvent dried. After transferring, measurements were made with no further processing.

Benefits from using Poropare

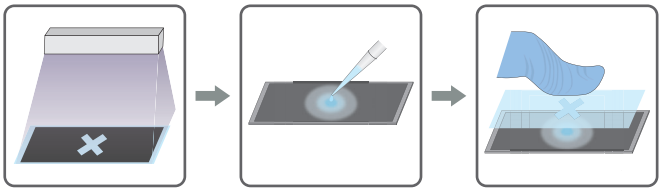
•Visualizes changes in film condition

The decrease in additive content in the film and the increase in degraded additives in the UV irradiated area (X shape) were clearly visualized.

•Wet transfer

Target substances were extracted by wet transfer utilizing Poropare absorbency, while maintaining the positional information on where these substances are localized.

Measurement procedure

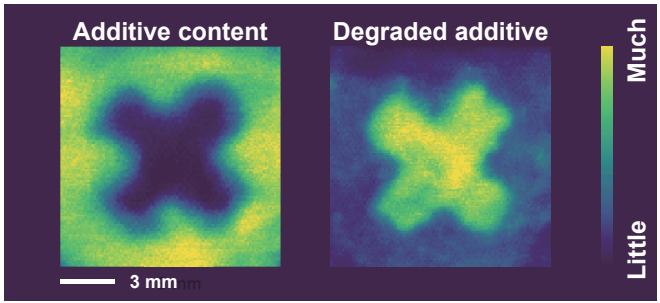


A commercially available film was irradiated with UV light, while partly masked.

Pour THF onto Poropare.

Press and transfer the X area of the film onto Poropare.

Insert into the instrument !



HAMAMATSU PHOTONICS K.K. www.hamamatsu.com

Electron Tube/Laser Applied Sales
314-5, Shimokanzo, Iwata City, Shizuoka Pref., 438-0193, Japan, Telephone: (81)539-62-5245, Fax: (81)539-62-2205
E-mail: msi-t001@hpk.co.jp