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Charge-retraction time-of-flight technique for mobility measurements in organic materials JASON WALLACE, University of Rochester, RALPH YOUNG, University of Rochester and Eastman Kodak Company, CHING TANG, University of Rochester, SHAW CHEN, University of Rochester and Laboratory for Laser Energetics — This presentation will explore a recently reported, all-electrical technique, charge-retraction time-of-flight (CR-TOF), for the measurement of charge carrier mobility through an organic layer. Carriers are injected and accumulated at a blocking interface, then retracted. The retraction current transient is nearly indistinguishable from a traditional time-of-flight photocurrent. The CR-TOF technique is validated by measurement of the hole mobility of two well-known compounds using a common hole-blocking layer. An advantage of the technique is the applicability to sample layers less than 300 nm in thickness. This method also offers new opportunities such as catching charges in the middle of the sample layer and an alternate determination of the transition voltage of organic-organic interfaces.

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