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Abstract for an Invited Paper
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Charge Injection and Transport in Conjugated Polymers.

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We will overview the state-of-the-art in our understanding of charge injection and transport in conjugated polymers. We start by discussing the identifying characteristics of this class of materials, especially in relation with their structure and morphology. We follow by reviewing the advantages and limitations of experimental techniques that are used to probe charge transport. We then embark on a discussion of the fundamentals of charge transport in organics. We follow a didactic approach, where we start from transport in crystalline semiconductors and gradually introduce corrections for space charge effects, for the influence of disorder on mobility, for high charge densities, and for electric field-dependent charge densities. We compare with experimental data from polyfluorenes. We then shift our attention to charge injection. We review some of the recent theories and compared their predictions to experimental data, again from polyfluorenes. We close by proposing directions for future work.