One-pot synthesis of D–p–D–p–D type holetransporting materials for perovskite solar cells by sequential C–H (hetero)arylations

Chang-Chieh Ting[1], Kuan-Ming Lu[1], Kun-Mu Lee[2,3]* Ching-Yuan Liu[1]*

1.Department of Chemical and Materials Engineering, National Central University, Taiwan

2. Department of Chemical and Materials Engineering, Chang Gung University, Taiwan

3. Division of Neonatology, Department of Pediatrics, Chang Gung Memorial Hospital, Taiwan

***Corresponding author email:** kmlee@mail.cgu.edu.tw

Abstract

We report a step-saving new access to D–p–D–p–D type oligoaryls through one-pot sequential C–H (hetero)arylations. Conventionally, these oligomers were prepared by Stille or Suzuki coupling reactions that required prefunctionalization steps. The facilely synthesized linear oligomers were fabricated in perovskite-based solar devices as efficient hole transporters, exhibiting a power conversion efficiency of up to 15.4%.