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The Study Of Charge Carrier Transport On The Calamitic Liquid Crystals " 5, 5'-Di-(Alkyl-Pyridin-Yl) - 2' Bithiophenes" NARESH SHAKYA, CHANDRA POKHREL, BRETT ELLMAN, Physics Department, Kent State University, YULIA GETMANENKO , ROBERT TWIEG, Chemistry Department, Kent State University — The hole and electron mobilities in both types of calamitic liquid crystals C9 [5,5'-Di-(5-n-nonyl-pyridin-2-yl)-2,2'-bithiophenes] and C10 [5,5'-Di-(5-n-decyl-pyridin-2-yl)-2,2'-bithiophenes] were studied. The charge carrier mobilities were strongly electric field dependent. The mobilities decreased continuously with increase in the electric field up to a certain value, after which it became constant. Both types of charge carrier mobilities are independent of the temperature over our temperature range. The qualitative feature of our results could be tentatively explained by the Monte–Carlo modeling proposed by H Bassler. However, the results require further study for better understanding.

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