

# Charge Transport in Liquid Crystalline Semiconductors

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## **Abstract**

We have investigated charge transport in a family of novel liquid crystals containing five member ring heterocycles (oxadiazoles, thiadiazoles, etc.). Efficient electron transport was observed in the smectic phase. The electric field and temperature dependence of the electron mobility

was studied. Apart from being able to simultaneously function as liquid crystals and charge transport agents, these materials are highly fluorescent, allowing the fabrication of organic light emitting diodes. Their electroluminescent properties in devices with various electrode materials were studied.