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(54) Title: ORGANIC SEMICONDUCTOR MATERIAL AND LIGHT-EMITTING ELEMENT, LIGHT-EMITTING DEVICE, LIGHTING SYSTEM, AND ELECTRONIC DEVICE USING THE SAME

(57) Abstract: Disclosed is a novel organic semiconductor material which has a twisted quaterphenylene skeleton as a central unit and simultaneously possesses a skeleton having an electron-transporting property and a skeleton having a hole-transporting property at the terminals of the quaterphenylene skeleton. Specifically, the organic semiconductor material has a [1,1' :2',1" :2",1""] quaterphenyl-4-4"" -diyl group, and one of the terminals of the [1,1' :2',1" :2",1""] quaterphenyl-4-4"" -diyl group is bonded to a skeleton having an electron-transporting property such as a benzoxazole group or an oxadiazole group. A skeleton having a hole-transporting property such as diarylamino group is introduced at the other terminal. This structure allows the formation of a compound having a bipolar property, a high molecular weight, an excellent thermal stability, a large band gap, and high triplet excitation energy.



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