-continued

$$\begin{array}{c}
R^{A} \\
O \\
O \\
O \\
I \\
R^{21} \\
O \\
R^{22}
\end{array}$$
(a2)

Herein R^4 is each independently hydrogen or methyl. R^{21} is a single bond or methylene. R^{22} is hydrogen or a C_1 - C_4 15 alkyl group, the alkyl group being preferably straight or branched. X^1 is a single bond, ether bond, ester bond, amide bond, $-C(=O)-O-R^{23}$ —, phenylene, -Ph- $C(=O)-O-R^{24}$ —, or -Ph- $R^{25}-O-C(=O)-R^{26}$ —, wherein Ph is phenylene, R^{23} is a C_1 - C_{10} alkylene group which may be 20 straight, branched or cyclic, and contain an ether bond or ester bond, R^{24} , R^{25} and R^{26} are each independently a single bond or a C_1 - C_6 straight or branched alkylene group.

The subscript m is an integer of 1 to 5, n is an integer of 0 to 4, and 1≤m+n≤5. It is preferred that n be an integer of 1 to 3 and m be an integer of 1 to 3 because the inclusion of hydroxyl group ensures more efficient generation of secondary electrons, leading to a higher sensitivity.

Examples of the monomer from which recurring units (a1) are derived are shown below, but not limited thereto. Herein \mathbb{R}^A is as defined above.