may also form a mono- or polycyclic, aliphatic ring system with one another;

$R^{1'}$ is on each occurrence, identically or differently, an aromatic or heteroaromatic ring system having 5 to 60 aromatic ring atoms, which may also be substituted by one or more radicals R^2, or for a group of the formula (3b) or (3c).

Ar is on each occurrence, identically or differently, an aromatic or heteroaromatic ring system having 5 to 40 aromatic ring atoms, which may be substituted by one or more radicals R^3;

R^2 is on each occurrence, identically or differently, H, D, F, Cl, Br, I, $N(R^3)_2$, $N(Ar)_2$, $C(=O)Ar$, $P(=O)Ar_2$, $S(=O)Ar$, $S(=O)_2Ar$, $CR^3=CR^3Ar$, CN, NO_2, $Si(R^3)_3$, $B(OR^3)_2$, OSO_2R^3, a straight-chain alkyl, alkoxy or thioalkoxy group having 1 to 40 C atoms or a branched or cyclic alkyl, alkoxy or thioalkoxy group having 3 to 40 C atoms, each of which may be substituted by one or more radicals R^3, where one or more non-adjacent CH_2 groups may be replaced by $R^3C=CR^3$, C≡C, $Si(R^3)_2$, C=O, $C=NR^3$, $P(=O)(R^3)$, SO, SO_2, NR^3, O, S or $CONR^3$ and where one or more H atoms may be replaced by D, F, Cl, Br, I, CN or NO_2, or an aromatic or heteroaromatic ring system having 5 to 60 aromatic ring atoms, which may in each case be substituted by one or more radicals R^3, or an aryloxy or heteroaryloxy group having 5 to 40 aromatic ring atoms, which may be substituted by one or more radicals R^3, or an aralkyl or heteroaralkyl group having 5 to 40 aromatic ring atoms, which may be substituted by one or more radicals R^3, or a combination of these systems;

R^3 is on each occurrence, identically or differently, H, D or an aliphatic hydrocarbon radical having 1 to 20 C atoms or an aryl or heteroaryl group having 5 to 40 ring atoms or a combination of these groups;

with the proviso that, if one or more of the groups R, R^1, $R^{1'}$, R^2, R^3, Ar or Ar^1 contain heteroaryl groups which do not conform to the formulae (2) or (3), these are not electron-deficient heteroaryl groups;

characterised in that at least one group R is present which stands, identically or differently on each occurrence, for a group of the following formula (2a),

may also form a mono- or polycyclic, aliphatic ring system with one another;

$R^{1'}$ is on each occurrence, identically or differently, an aromatic or heteroaromatic ring system having 5 to 60 aromatic ring atoms, which may also be substituted by one or more radicals R^2, or for a group of the formula (3b) or (3c).

Ar is on each occurrence, identically or differently, an aromatic or heteroaromatic ring system having 5 to 40 aromatic ring atoms, which may be substituted by one or more radicals R^3;

R^2 is on each occurrence, identically or differently, H, D, F, Cl, Br, I, $N(R^3)_2$, $N(Ar)_2$, C(=O)Ar, $P(=O)Ar_2$, S(=O)Ar, $S(=O)_2Ar$, $CR^3=CR^3Ar$, CN, NO_2, $Si(R^3)_3$, $B(OR^3)_2$, OSO_2R^3, a straight-chain alkyl, alkoxy or thioalkoxy group having 1 to 40 C atoms or a branched or cyclic alkyl, alkoxy or thioalkoxy group having 3 to 40 C atoms, each of which may be substituted by one or more radicals R^3, where one or more non-adjacent CH_2 groups may be replaced by $R^3C=CR^3$, C≡C, $Si(R^3)_2$, C=O, $C=NR^3$, $P(=O)(R^3)$, SO, SO_2, NR^3, O, S or $CONR^3$ and where one or more H atoms may be replaced by D, F, Cl, Br, I, CN or NO_2, or an aromatic or heteroaromatic ring system having 5 to 60 aromatic ring atoms, which may in each case be substituted by one or more radicals R^3, or an aryloxy or heteroaryloxy group having 5 to 40 aromatic ring atoms, which may be substituted by one or more radicals R^3, or an aralkyl or heteroaralkyl group having 5 to 40 aromatic ring atoms, which may be substituted by one or more radicals R^3, or a combination of these systems;

R^3 is on each occurrence, identically or differently, H, D or an aliphatic hydrocarbon radical having 1 to 20 C atoms or an aryl or heteroaryl group having 5 to 40 ring atoms or a combination of these groups;

with the proviso that, if one or more of the groups R, R^1, $R^{1'}$, R^2, R^3, Ar or Ar^1 contain heteroaryl groups, these are not electron-deficient heteroaryl groups;

characterised in that at least one group R is present which stands, identically or differently on each occurrence, for a group of the following formula (2a),