~~106548 (U302010EP)~~

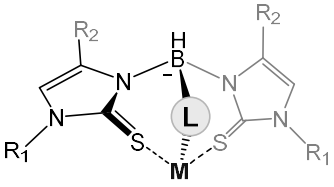
~~What is claimed is:~~Claims

1. A sensor compound comprising a metal atom and a mercaptoimidazolyl multidentate ligand, wherein the mercaptoimidazolyl multidentate ligand further comprises a pyrazolyl group or an indolyl group, and wherein the metal atom is Cu(I), Ag(I) or Au(I).

~~2. The sensor compound of claim 1, wherein the metal atom is Cu(I), Ag(I) or Au(I).~~

~~3. The sensor compound of claim 1 or 2, wherein the mercaptoimidazolyl multidentate ligand further comprises a pyrazolyl group or an indolyl group.~~

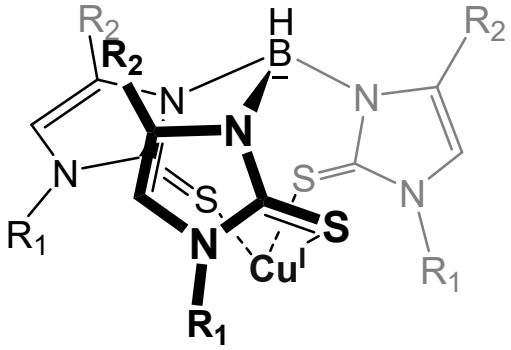
~~4~~2. The sensor compound of claim 1, wherein the compound has formula (I)



(I)

where each instance of R_1 and R_2 can be hydrogen, or a group having one or more carbons, M is Au(I), Ag(I) or Cu(I), and L is a pyrazolyl group, a mercaptoimidazolyl group, or an indolyl group.

~~5~~3. The sensor compound of claim 1, wherein the compound has formula II



(II)

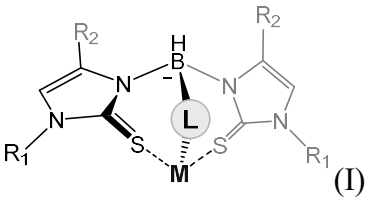
where each instance of R_1 and R_2 can be hydrogen, or a group having one or more carbons.

~~64~~. A sensor composition comprising a sensor compound and a metal dichalcogenide wherein the sensor compound comprises a metal atom and a mercaptoimidazolyl multidentate ligand.

~~75~~. The sensor composition of claim ~~64~~, wherein the metal atom is Cu(I), Ag(I) or Au(I).

~~86~~. The sensor composition of claim ~~6 4~~ or ~~75~~, wherein the mercaptoimidazolyl ligand further comprises a pyrazolyl group or an indolyl group.

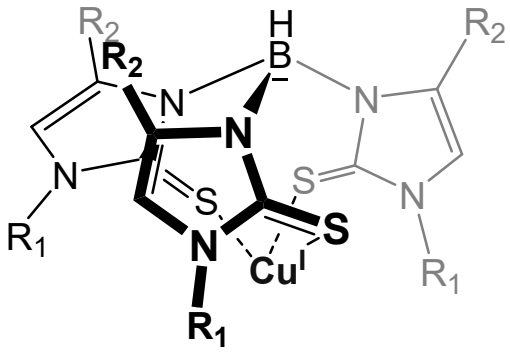
~~97~~. The sensor composition of claim ~~64~~, wherein the sensor compound has formula (I)



(I)

where each instance of R_1 and R_2 can be hydrogen, or a group having one or more carbons, M is Au, Ag or Cu, and L is a pyrazolyl group, a mercaptoimidazolyl group, or an indolyl group.

~~108~~. The sensor composition of claim ~~64~~, wherein the sensor compound has formula II



(II)

where each instance of R_1 and R_2 can be hydrogen, or a group having one or more carbons.

~~11~~9. The sensor composition of any one of claims ~~6-10~~4-8, wherein the metal dichalcogenide comprises MoS_2, WS_2, $MoSe_2$, WSe_2, $MoTe_2$, WTe_2, and combinations thereof.