

PCT Recordation of Search History

Case/PCT Application Number: PCT/US18/50834

CLIN Number/Technical Field of PCT Application: 008 Chemical

Dates During Which the Search was Conducted: 25-26 October 2018

Date of Completion of Recordation of Search History Form: 26 October 2018

Research Analyst Initials: JLS

Search Approval Official (SAO) Initials: K1K

Field of Search/Classification Information:

IPC(8) Classifications: G01N 33/50, 33/53, 33/543; C12Q 1/68 (2018.01)

CPC Classifications: G01N 33/50, 33/53, 33/5302, 33/543; C12Q 1/68

Databases Searched (Patent and Non-Patent Literature (NPL), Including Sub-Databases and Files Searched) and Search Terms Used:

PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data); EBSCO; IEEE; Google Scholar; Google Patents;

Polymer, pvc, polyvinyl chloride, membrane, film, diaphragm, gel, adhesion, attach, couple, bond, functional, catechol, pyrocatechol, dihydroxybenzene, vitro, diagnostic, analyzer, sensor, biosensor, detector, assay, analyte, target, biomarker, marker

Database Search String Recordation, Including Dates of Searches:

Patent Database Search Strategy/Results:

PatSeer;

ID	Search String	Records	Date
L36	TAC: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND ((polymer* OR polyvinyl*_chlorid* OR pvc)) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) W5 (attach* OR coupl* OR bond* OR adhesi*) W10 (substrate or base or support or plate or glass)) AND (pyrocatechol* OR dihydroxybenzen* OR catechol*)	22	26-Oct-18
L35	L33 and (L3)	229	26-Oct-18
L34	L33 and (L1 or L2)	1	26-Oct-18
L33	TAC: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND ((polymer* OR polyvinyl*_chlorid* OR pvc)) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) W5 (attach* OR coupl* OR bond* OR adhesi*) W10 (substrate or base or support or plate or glass)) AND (pyrocatechol* OR dihydroxybenzen* OR functional* OR catechol*)	984	26-Oct-18
L32	TA: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND ((polymer* OR polyvinyl*_chlorid* OR pvc)) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) W5 (attach* OR coupl* OR bond* OR adhesi*) W10 (substrate or base or support or plate or glass)) AND (pyrocatechol* OR dihydroxybenzen* OR functional* OR catechol*)	28	26-Oct-18
L31	L30 and (L1 or L2)	13	26-Oct-18
L30	TAC: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND TACD: ((polymer* OR polyvinyl*_chlorid* OR pvc)) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) W5 (attach* OR coupl* OR bond* OR adhesi*)) AND (pyrocatechol* OR dihydroxybenzen* OR catechol*)	6242	26-Oct-18
L29	L28 not (L26 or L24 or L21 or L19 or L16 or L15 or L12 or L11 or L4)	98	26-Oct-18
L28	TA: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND ((polymer* OR polyvinyl*_chlorid* OR pvc)) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) W5 (attach* OR coupl* OR bond* OR adhesi*)) AND (pyrocatechol* OR dihydroxybenzen* OR functional* OR catechol*)	98	26-Oct-18
L27	(L3) and L25	339	26-Oct-18
L26	(L1 or L2) and L25	4	26-Oct-18
L25	TAC: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND (vitro) and TACD: ((polymer*	806	26-Oct-18

	OR polyvinyl*_chlorid* OR pvc)) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) W5 (attach* OR coupl* OR bond* OR adhesi*)) AND (pyrocatechol* OR dihydroxybenzen* OR catechol*)		
L24	L23 not (L21 or L19 or L16 or L15 or L12 or L11 or L4)	63	26-Oct-18
L23	TA: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND (vitro) and TACD: ((polymer* OR polyvinyl*_chlorid* OR pvc)) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) W5 (attach* OR coupl* OR bond* OR adhesi*)) AND (pyrocatechol* OR dihydroxybenzen* OR catechol*)	64	26-Oct-18
L22	TAC: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND (vitro) and ((polymer* OR polyvinyl*_chlorid* OR pvc)) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) W5 (attach* OR coupl* OR bond* OR adhesi*)) AND (pyrocatechol* OR dihydroxybenzen* OR catechol*)	2	26-Oct-18
L21	L20 not (L19 or L16 or L15 or L12 or L11 or L4)	69	25-Oct-18
L20	L18 and (L3)	71	25-Oct-18
L19	L18 and (L1 or L2)	1	25-Oct-18
L18	TAC: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND (vitro) and ((polymer* OR polyvinyl*_chlorid* OR pvc)) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) W5 (attach* OR coupl* OR bond* OR adhesi*)) AND (pyrocatechol* OR dihydroxybenzen* OR functional* OR catechol*)	168	25-Oct-18
L17	TA: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND (vitro) and ((polymer* OR polyvinyl*_chlorid* OR pvc)) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) W5 (attach* OR coupl* OR bond* OR adhesi*)) AND (pyrocatechol* OR dihydroxybenzen* OR functional* OR catechol*)	0	25-Oct-18
L16	(L1 or L2) and L13	5	25-Oct-18
L15	L14 not (L12 or L11 or L4)	36	25-Oct-18
L14	L3 and L13	37	25-Oct-18
L13	TACD: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND (vitro) and TACD: ((polymer* OR polyvinyl*_chlorid* OR pvc) W10 (diaphragm* OR membrane* OR film OR gel OR layer*)) AND ((attach* OR coupl* OR bond* OR adhesi*) W10 (pyrocatechol* OR dihydroxybenzen* OR catechol*))	653	25-Oct-18
L12	TAC: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND (vitro) and TACD: ((polymer*	13	25-Oct-18

	OR polyvinyl*_chlorid* OR pvc) W10 (diaphragm* OR membrane* OR film OR gel OR layer*)) AND ((attach* OR coupl* OR bond* OR adhesi*) W10 (pyrocatechol* OR dihydroxybenzen* OR catechol*))		
L11	TA: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND (vitro) and TACD: ((polymer* OR polyvinyl*_chlorid* OR pvc) W10 (diaphragm* OR membrane* OR film OR gel OR layer*)) AND ((attach* OR coupl* OR bond* OR adhesi*) W10 (pyrocatechol* OR dihydroxybenzen* OR catechol*))	2	25-Oct-18
L10	L3 and L9	221	25-Oct-18
L9	TA: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND (vitro) and TACD: ((polymer* OR polyvinyl*_chlorid* OR pvc) W10 (diaphragm* OR membrane* OR film OR gel OR layer*)) AND ((attach* OR coupl* OR bond* OR adhesi*) W10 (pyrocatechol* OR dihydroxybenzen* OR functional* OR catechol*))	544	25-Oct-18
L8	L6 and (L3)	3281	25-Oct-18
L7	L6 and (L1 or L2)	0	25-Oct-18
L6	TA: (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*) AND TACD: ((polymer* OR polyvinyl*_chlorid* OR pvc) W10 (diaphragm* OR membrane* OR film OR gel OR layer*)) AND ((attach* OR coupl* OR bond* OR adhesi*) W10 (pyrocatechol* OR dihydroxybenzen* OR functional* OR catechol*)) AND (vitro)	7747	25-Oct-18
L5	TAC:(((polymer* OR polyvinyl*_chlorid* OR pvc) W10 (diaphragm* OR membrane* OR film OR gel OR layer*)) AND ((attach* OR coupl* OR bond* OR adhesi*) W10 (pyrocatechol* OR dihydroxybenzen* OR functional* OR catechol*)) AND (vitro) AND (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*))	100	25-Oct-18
L4	TA:(((polymer* OR polyvinyl*_chlorid* OR pvc) W10 (diaphragm* OR membrane* OR film OR gel OR layer*)) AND ((attach* OR coupl* OR bond* OR adhesi*) W10 (pyrocatechol* OR dihydroxybenzen* OR functional* OR catechol*)) AND (vitro) AND (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*))	14	25-Oct-18
L3	(CPC:(C12Q1/68 OR G01N33/50 OR G01N33/53 OR G01N33/5302 OR G01N33/543) OR IC:(C12Q1/68 OR G01N33/50 OR G01N33/53 OR G01N33/543))	870258	25-Oct-18
L2	INV: John BENCO	131	25-Oct-18
L1	ASN: SIEMENS HEALTHCARE DIAGNOSTICS	4163	25-Oct-18

- ((polymer OR "polyvinyl chloride" OR PVC) AROUND(10) (diaphragm OR membrane OR film OR gel)) AND ((attach OR couple OR bond OR adhesion) AROUND(10) (pyrocatechol OR dihydroxybenzene OR functional OR catechol)) AND (vitro) AND (sensor OR diagnostic OR assay OR biosensor OR analyzer)
- (polymer OR "polyvinyl chloride" OR PVC) AND ((diaphragm OR membrane OR film OR gel) AROUND(5) (attach OR couple OR bond OR adhesion)) AND (pyrocatechol OR dihydroxybenzene OR functional OR catechol) AND (vitro) AND (sensor OR diagnostic OR assay OR biosensor OR analyzer)
- ((polymer OR "polyvinyl chloride" OR PVC) AROUND(10) (diaphragm OR membrane OR film OR gel)) AND ((attach OR couple OR bond OR adhesion)) AND (vitro) AND (sensor OR diagnostic OR assay OR biosensor OR analyzer)
- (polymer OR "polyvinyl chloride" OR PVC) AND ((diaphragm OR membrane OR film OR gel) AROUND(5) (attach OR couple OR bond OR adhesion)) AND (vitro) AND (sensor OR diagnostic OR assay OR biosensor OR analyzer)
- (polymer OR "polyvinyl chloride" OR PVC) AND ((diaphragm OR membrane OR film OR gel) AROUND(5) (attach OR couple OR bond OR adhesion) AROUND(10) (base or substrate or support or plate or glass)) AND (pyrocatechol OR dihydroxybenzene OR functional OR catechol) AND (sensor OR diagnostic OR assay OR biosensor OR analyzer)

Non-Patent Literature (NPL) Search Strategy/Results:

Google Scholar– 25-26 October 2018

- ((polymer OR "polyvinyl chloride" OR PVC) AROUND(10) (diaphragm OR membrane OR film OR gel)) AND ((attach OR couple OR bond OR adhesion) AROUND(10) (pyrocatechol OR dihydroxybenzene OR functional OR catechol)) AND (vitro) AND (sensor OR diagnostic OR assay OR biosensor OR analyzer)
- (polymer OR "polyvinyl chloride" OR PVC) AND ((diaphragm OR membrane OR film OR gel) AROUND(5) (attach OR couple OR bond OR adhesion)) AND (pyrocatechol OR dihydroxybenzene OR functional OR catechol) AND (vitro) AND (sensor OR diagnostic OR assay OR biosensor OR analyzer)
- ((polymer OR "polyvinyl chloride" OR PVC) AROUND(10) (diaphragm OR membrane OR film OR gel)) AND ((attach OR couple OR bond OR adhesion)) AND (vitro) AND (sensor OR diagnostic OR assay OR biosensor OR analyzer)
- (polymer OR "polyvinyl chloride" OR PVC) AND ((diaphragm OR membrane OR film OR gel) AROUND(5) (attach OR couple OR bond OR adhesion)) AND (vitro) AND (sensor OR diagnostic OR assay OR biosensor OR analyzer)
- (polymer OR "polyvinyl chloride" OR PVC) AND ((diaphragm OR membrane OR film OR gel) AROUND(5) (attach OR couple OR bond OR adhesion) AROUND(10) (base or substrate or support or plate or glass)) AND (pyrocatechol OR dihydroxybenzene OR functional OR catechol) AND (sensor OR diagnostic OR assay OR biosensor OR analyzer)

EBSCO – 25-26 October 2018

- TI (((polymer* OR ""polyvinyl* chlorid*"" OR pvc) N10 (diaphragm* OR membrane* OR film OR gel OR layer*)) AND ((attach* OR coupl* OR bond* OR adhesi*) N10 (pyrocatechol* OR dihydroxybenzen* OR functional* OR catechol*)) AND (vitro) AND (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*))

- TI ((polymer* OR ""polyvinyl* chlorid*"" OR pvc) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) N5 (attach* OR coupl* OR bond* OR adhesi*)) AND (pyrocatechol* OR dihydroxybenzen* OR functional* OR catechol*) AND (vitro) AND (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*))
- TI (((polymer* OR ""polyvinyl* chlorid*"" OR pvc) N10 (diaphragm* OR membrane* OR film OR gel OR layer*)) AND ((attach* OR coupl* OR bond* OR adhesi*)) AND (vitro) AND (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*))
- TI ((polymer* OR ""polyvinyl* chlorid*"" OR pvc) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) N5 (attach* OR coupl* OR bond* OR adhesi*)) AND (vitro) AND (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*))
- TI ((polymer* OR ""polyvinyl* chlorid*"" OR pvc) AND ((diaphragm* OR membrane* OR film OR gel OR layer*) N5 (attach* OR coupl* OR bond* OR adhesi*) N10 (base or substrate or support or plate or glass)) AND (pyrocatechol* OR dihydroxybenzen* OR functional* OR catechol*) AND (sensor* OR diagnost* OR assay* OR biosensor* OR analyzer* OR detector*))

IEEE – 25-26 October 2018

- Polymer membrane surface adhesion functional group in vitro diagnostic sensor
- in vitro diagnostic sensor catecholic functionalized membrane
- Surface adhesion functional group bond membrane support assay
- Surface adhesion functional group bond membrane support assay catechol
- Biosensor membrane attach substrate functional catechol