

GOVERNMENT OF INDIA
MINISTRY OF SCIENCE & TECHNOLOGY
DEPARTMENT OF SCIENCE & TECHNOLOGY
RAJYA SABHA
UNSTARRED QUESTION NO. 135
ANSWERED ON 02/02/2023

**PATENTS FILED INTERNATIONALLY TO VARIOUS COUNTRIES FOR
TANGIBLE AND INTANGIBLE PRODUCTS**

135. SHRI K.R.N. RAJESHKUMAR:

Will the Minister of Science and Technology be pleased to state:

- (a) the details of the Patents filed internationally in various countries by the Ministry during the last five years and the status of those Patents;
- (b) whether the Ministry is taking necessary actions to obtain the Patents in timely manner and the problems faced during the process; and
- (c) the details of the tangible and intangible products derived out of those Patents?

ANSWER

MINISTER OF STATE (INDEPENDENT CHARGE) OF
THE MINISTRY OF SCIENCE AND TECHNOLOGY & EARTH SCIENCES
(DR. JITENDRA SINGH)

(a) Yes Sir, The Ministry of Science of Technology is facilitating the filing of patents through its wings viz. Department of Science and Technology (DST), Department of Biotechnology (DBT), Department of Scientific and Industrial Research (DSIR) & Council of Scientific and Industrial Research (CSIR). The DST under its Patent Facilitation Programme (PFP) facilitates the promotion and creation of Intellectual Property Rights (IPR), through the Patent Facilitation Centre (PFC) established at Technology Information Forecasting and Assessment Council (TIFAC). The Ministry of Science of Technology supports Research and Development (R&D) projects that often leads to the generation of patents.

The patents filed internationally through the support of the Ministry of Science and Technology during the last five years are enclosed as **Annexure-I**.

(b) Yes, Sir. The Ministry of Science and Technology and its Departments have established a mechanism to file patents in timely manner. For the ease of filing and facilitating patents, PFC-TIFAC performs in-house patentability assessments and extends full financial, technical, and legal support in drafting, filing, prosecution, and maintenance of patents & other IPs through its empanelled IPR Attorneys. Further, various initiatives have been taken up by the Ministry through TIFAC, Innovation Protection Unit (IPU) and the National Research and Development Corporation (NRDC) of the DSIR to promote innovation activities by creating awareness amongst the scientific fraternity about the importance of IP and its filing process.

(c) Some of the noteworthy tangible/intangible products derived out of the patents filed internationally through the support of DST during the last five years are as follows;

- A multi-analyte lab-on-palm product under the tradenames PathShodh, anuPath™ has been launched. The product is fully certified (ISO13485, IEC61010, IEC61326, NIB, ICMR, CDSCO) and has huge market potential. Based on the experience from large-scale deployment in India during 2022, it has been planned to go through regulatory processes (CE and FDA) in 2023, enabling access to European and US markets.
- A method for Confirming Constitutional Mismatch Repair Deficiency syndrome has been devised at the Government College of Engineering and Leather Technology, Kolkata for quick and accurate diagnosis of rare genetic conditions /CMMRD by improving prognosis.
- A Micro Multilevel Inverter has been conceptualized at MANIT, Bhopal, and has been patented in Australia.
- An analytical model of habitability score for exoplanets has been developed at BITS-PILANI Goa and patented in Germany.
- Internet of Things enabled Smart Solar Photovoltaic Module and its Control Method has been developed at NIT Goa and patented in Germany.
- A Smart Electrical Node and its Control Method have been devised at NIT Goa to convert any non-smart device into a smart device. This has been patented in Australia.

The list of notable tangible products derived from the patents filed internationally through CSIR during the last five years is enclosed as **Annexure-II**.

Patents filed internationally to various countries by CSIR -2018					
S No.	Country Code	Title	Application No	Patent No	Status
1.	DE	Microcapsules modified with nano materials for desired release pattern/Rate and preparation thereof	16753481	3307428	IF/EP DESIG.
2.	EP	Microcapsules modified with nano materials for desired release pattern/Rate and preparation thereof	16753481	3307428	RO/EP/NP/IF
3.	FR	Microcapsules modified with nano materials for desired release pattern/Rate and preparation thereof	16753481	3307428	IF/EP DESIG.
4.	GB	Microcapsules modified with nano materials for desired release pattern/Rate and preparation thereof	16753481	3307428	IF/EP DESIG.
5.	NL	Microcapsules modified with nano materials for desired release pattern/Rate and preparation thereof	16753481	3307428	IF/EP DESIG.
6.	US	A process for upgradation of heavy crude oil/residue using waste plastic as hydrogen donating Agent	15/861263	10745629	IF
7.	CH	Molecular cloning and expression of CDNA encoding O-methyltransferase isolated from <i>Magifera indica</i>	16758288	3310907	IF/EP DESIG.
8.	DE	Molecular cloning and expression of CDNA encoding O-methyltransferase isolated from <i>Magifera indica</i>	16758288	3310907	IF/EP DESIG.
9.	EP	Molecular cloning and expression of CDNA encoding O-methyltransferase isolated from <i>Magifera indica</i>	16758288	3310907	RO/EP/NP/IF
10.	WO	Immunosuppressive agents, derivatives thereof	Pct/in2018/050027		RO
11.	AR	Detection of pathogens using dna macroarrays	20180100170		PP
12.	JP	An improved process for the selective production of N- methyl-2-pyrrolidone (NMP)	2018-504889	6827031	IF
13.	US	Synthesis of dimethyl carbonate (dmc) from methanol and urea in presence of stripping with inert gas	15/883912	10597357	IF
14.	US	An improved process for the selective production of N- methyl-2-pyrrolidone (NMP)	15/749426	10308603	IF
15.	US	Selective Determination of free cyteine	15/749160	10730891	LP
16.	WO	Indolylkojyl methane analogues, process of preparation thereof and use as inhibitor of cancer cell invasion and metastasis	Pct/in2018/050060		RO
17.	EP	2-benzyl-indanone compounds as anticancer agent and a Process for preparation thereof	16721511	3322687	RO/EP/NP/IF
18.	FR	2-benzyl-indanone compounds as anticancer agent and a process for preparation Thereof	16721511	3322687	IF/EP DESIG.
19.	GB	2-benzyl-indanone compounds as anticancer agent and a process for preparation Thereof	16721511	3322687	IF/EP DESIG.
20.	DE	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
21.	EP	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	RO/EP/NP/IF

22.	ES	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
23.	FR	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
24.	GB	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
25.	IT	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
26.	NL	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
27.	US	Synthesis of dimethyl carbonate (dmc) from methanol and urea in presence of stripping with inert gas	15/883912	10597357	IF
28.	US	An improved process for the selective production of N- methyl-2-pyrrolidone (NMP)	15/749426	10308603	IF
29.	US	Selective Determination of free cysteine	15/749160	10730891	LP
30.	WO	Indolyl kojyl methane analogues, process of preparation thereof and use as inhibitor of cancer cell invasion and metastasis	Pct/in201 8/050060		RO
31.	EP	2-benzyl-indanone compounds as anticancer agent and a Process for preparation thereof	16721511	3322687	RO/EP/NP/IF
32.	FR	2-benzyl-indanone compounds as anticancer agent and a process for preparation Thereof	16721511	3322687	IF/EP DESIG.
33.	GB	2-benzyl-indanone compounds as anticancer agent and a process for preparation Thereof	16721511	3322687	IF/EP DESIG.
34.	DE	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
35.	EP	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	RO/EP/NP/IF
36.	ES	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
37.	FR	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
38.	GB	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
39.	IT	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
40.	NL	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
41.	PL	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	16770097	3331497	IF/EP DESIG.
42.	US	Carbamoyl ethyl katira eye lubricant solution and a process for preparation thereof	15/751115	10639274	IF
43.	WO	A biodegradable theranostic nano- composite and use thereof	Pct/in201 8/050069		RO
44.	US	3-Indolyl furanoids as inhibitors of matrix metalloproteinase-9 for prevention of gastric ulcer and other inflammatory diseases	15/897688	10590116	IF
45.	DE	Selective Determination of free cysteine	16770096	3328869	LP

46.	EP	Selective Determination of free cyteine	16770096	3328869	RO/EP/NP/IF
47.	GB	Selective Determination of free cyteine	16770096	3328869	LP
48.	NL	Selective Determination of free cyteine	16770096	3328869	LP
49.	DE	An improved process for the selective production of N- methyl-2-pyrrolidone (NMP)	16741397	3328830	IF/EP DESIG.
50.	EP	An improved process for the selective production of N- methyl-2-pyrrolidone (NMP)	16741397	3328830	RO/EP/NP/IF
51.	GB	An improved process for the selective production of N- methyl-2-pyrrolidone (NMP)	16741397	3328830	IF/EP DESIG.
52.	ID	A process for the preparation of potassic fertiliser from alcohol distillery effluent	P0020190 7521	IDP0000 83832	IF
53.	PK	A process for the preparation of potassic fertiliser from alcohol distillery effluent	109/2018		PP
54.	WO	A process for the preparation of potassic fertiliser from alcohol distillery effluent	Pct/in201 8/050100		RO
55.	US	Synthesis of Functionalized carbon microspheres and their catalyst activity in C-O and C-N bond formation reactions	15/911018	10195599	IF
56.	WO	A single step oxidation of alkane or alkene	Pct/in201 8/050112		RO
57.	WO	Porous poly(benzimidazole) as separator for lithium ion batteries	Pct/in201 8/050118		RO
58.	WO	Multipurpose induction charging based air-induced air-assisted high range electrostatic spraying system for dust mitigation and environment protection	PCT/IN20 18/0 50122		AB
59.	PH	Integrated process for potash recovery from biomethanated spent wash with concomitant environmental remediation of effluent	1-2018- 500512	1/2018/5 00512 B1	IF
60.	US	Integrated process for potash recovery from biomethanated spent wash with concomitant environmental remediation of effluent	15/758468	10683211	IF
61.	WO	A catalyst bound alpha radical and synthesis of oxo compound using the same	Pct/in201 8/050135		RO
62.	BR	Integrated process for potash recovery from biomethanated spent wash with concomitant environmental remediation of effluent	BR11201 8004742- 2		PP
63.	ID	Integrated process for potash recovery from biomethanated spent wash with concomitant environmental remediation of effluent	P0020180 1758	IDP0000 72069	IF
64.	TH	Integrated process for potash recovery from biomethanated spent wash with concomitant environmental remediation of effluent	180100143 6		PP
65.	US	Biomass derivatives to fuels over metals supported on nitrogen doped mesoporous Carbon	15/758804	11000831	IF
66.	WO	Spirooxindole compounds as gsk3? Inhibitors and process for preparation thereof	Pct/in201 8/050134		RO
67.	WO	Allocholchicine derivatives, method of preparation and uses thereof	Pct/in201 8/050137		AB

68.	CN	An improved process for the selective production of N-methyl-2-pyrrolidone (NMP)	201680053 38 7	ZL20168 0 053387.4	IF
69.	KR	An improved process for the selective production of N-methyl-2-pyrrolidone (NMP)	1-2018- 7005982		PP
70.	US	Semiconductor-oxides nanotubes-based composite particles useful for dye-removal and process thereof	15/924136 Cip of 14/428 131	10661265	LP
71.	US	A novel pharmaceutical wound healing composition	15/760993	10709743	IF
72.	EP	Biomass derivatives to fuels over metals supported on nitrogen doped mesoporous Carbon	16794761		PP
73.	DE	A novel pharmaceutical wound healing composition	16816419	3352805	IF/EP DESIG.
74.	EP	A novel pharmaceutical wound healing composition	16816419	3352805	RO/EP/NP/IF
75.	FR	A novel pharmaceutical wound healing composition	16816419	3352805	IF/EP DESIG.
76.	GB	A novel pharmaceutical wound healing composition	16816419	3352805	IF/EP DESIG.
77.	WO	A process for the purification of recombinant antibody fragment	PCT/IN20 18/0 50164		RO
78.	WO	A process for coating a biomedical implant with a biocompatible polymer	Pct/in201 8/050163		RO
79.	TW	Electrospun collagen-graphene-polymer composite nanofibres for supercapacitors	106142258		PP
80.	WO	Chemically modified cell-penetrating peptide for intracellular delivery of nucleic acids	Pct/in201 8/050172		AB
81.	US	An eco-friendly process for hydrogenation of organic molecules using hydrous ruthenium oxide catalyst	15/766454	10954185	IF
82.	US	Design and Development of a High-Volume PM2.5 Impactor	15/954097	10782212	IF
83.	WO	An improved dispersing agent composition for application in tanning and a process for the preparation thereof	Pct/in201 8/050222		RO
84.	CH	Engineering of Organic Molecules for Terahertz Tagging Applications	18169327	3392240	IF/EP DESIG.
85.	DE	Engineering of Organic Molecules for Terahertz Tagging Applications	18169327	3392240	IF/EP DESIG.
86.	EP	Engineering of Organic Molecules for Terahertz Tagging Applications	18169327	3392240	RO/EP/NP/IF
87.	FR	Engineering of Organic Molecules for Terahertz Tagging Applications	18169327	3392240	IF/EP DESIG.
88.	GB	Engineering of Organic Molecules for Terahertz Tagging Applications	18169327	3392240	IF/EP DESIG.
89.	IT	Engineering of Organic Molecules for Terahertz Tagging Applications	18169327	3392240	IF/EP DESIG.
90.	WO	Ecofriendly and biodegradable lubricant formulation and process for preparation thereof	PCT/IN20 18/0 50257		RO

91.	JP	Genetically modified cells and methods for expressing clot- specific streptokinase and methods of purifying same	2018-521564		PP
92.	WO	A one step process for the hydroformylation of olefins	Pct/in2018/050259		RO
93.	WO	?-Spiroketal- ? -lactones and pharmaceutical composition containing same and process of preparation thereof	Pct/in2018/050263		RO
94.	WO	Boronic acid derivatives, a process for preparation and use Thereof	Pct/in2018/050261		RO
95.	US	Genetically modified cells and methods for expressing clot- specific streptokinase and methods of purifying same	15/771127	11008370	IF
96.	WO	Continuous flow interfacial separation of nanoparticles using centrifugal extractor	Pct/in2018/050265		RO
97.	AU	Biomarkers useful for detection of grades of human breast cancer	2018202963	2018202963	IF
98.	US	Automated remote computing method and system by email platform for molecular analysis	15/772518	10467068	IF
99.	WO	Organic flexible ferroelectric polymer nanocomposites	Pct/in2018/050271		RO
100.	CA	Fused pyrimidines as isoform selective phosphoinositide-3- kinase-alpha inhibitors and process for preparation thereof	3004534		PP
101.	WO	A NEW REAGENT FOR SPECIFIC DETECTION OF hocl IN PHYSIOLOGICAL CONDITION	PCT/IN2018/050281		RO
102.	GB	Protein nanostructures for the delivery of therapeutic agents to the anterior segment of the eye	1807476	2558494	IF
103.	US	Fused pyrimidines as isoform selective phosphoinositide-3- kinase-alpha inhibitors and process for preparation thereof	15/774520	10696688	IF
104.	WO	A single step process for the synthesis of furan derivatives from carbohydrates	Pct/in2018/050287		RO
105.	EP	Metal and flexible polymer composite as radially self expandable, axially flexible tubular structure	16834050		AB
106.	AE	Cellulase derived from metagenomics	P6000647/2018		PP
107.	US	Metal and flexible polymer composite as radially self expandable, axially flexible tubular structure	15/775455		AB
108.	US	Cellulase derived from metagenomics	15/775652	10738292	IF
109.	SA	Cellulase derived from metagenomics	518391577	SA 8371	IF
110.	EP	Fused pyrimidines as isoform selective phosphoinositide-3- kinase-alpha inhibitors and process for preparation thereof	16834200	3380476	RO/EP/NP/IF

111.	GB	Fused pyrimidines as isoform selective phosphoinositide-3- kinase-alpha inhibitors and process for preparation thereof	16834200	3380476	IF/EP DESIG.
112.	US	Novel combination of proteins as immune-stimulators against Leishmaniasis	15/776008		PP
113.	ZA	Cellulase derived from metagenomics	2018/03169	2018/03169	IF
114.	US	Apparatus for vapour- liquid-equilibrium (vle) data measurement	15/775939	10866199	IF
115.	CN	Protein nanostructures for the delivery of therapeutic agents to the anterior segment of the eye	2016800668640	ZL2016800668640	IF
116.	US	Protein nanostructures for the delivery of therapeutic agents to the anterior segment of the eye	15/776765		AB
117.	US	Novel eco-friendly, cost effective, autocatalytic process for the synthesis of tributyl citrate (tbc)"	15/777148	10604472	IF
118.	US	Room-temperature ferromagnetic- ferroelectric multiferroic material	15/777016	11014813	IF
119.	WO	SUBSTITUTED METHANOPYRIDO [2, 1-a] ISOINDOLONES AS machr MODULATORS FOR TREATING VARIOUS ASSOCIATED PATHOPHYSIOLOGICAL CONDITIONS	PCT/IN2018/050317		RO
120.	WO	A cloning, expression and refolding process for preparing antibody fragments.	PCT/IN2018/050315		RO
121.	DE	Preparation of anti- reflection and passivation layers of silicon surface	16834051	3381058	IF/EP DESIG.
122.	EP	Preparation of anti- reflection and passivation layers of silicon surface	16834051	3381058	RO/EP/NP/IF
123.	FR	Preparation of anti- reflection and passivation layers of silicon surface	16834051	3381058	IF/EP DESIG.
124.	US	Preparation of anti- reflection and passivation layers of silicon surface	15/778509	10811546	IF
125.	WO	A process for the synthesis of aromatic carbamates	Pct/in2018/050335		RO
126.	WO	An assembly of porphyrin-fullerene and Use thereof	Pct/in2018/050334		RO
127.	EP	Genetically modified cells and methods for expressing clot- specific streptokinase and methods of purifying same	16831838		PP
128.	US	Method of identification of combinatorial enzymatic reaction targets in glioblastoma specific metabolic network	15/779798		PP
129.	WO	FURO[2,3-b]PYRAN-2-ONE COMPOUNDS, PREPARATION AND COMPOSITION THEREOF	PCT/IN2018/050345		RO
130.	WO	A composition useful for pre-treatment in waterless tanning	Pct/in2018/050347		RO
131.	DK	Cellulase derived from metagenomics	16834124	3374503	IF/EP DESIG.

132.	EP	Cellulase derived from metagenomics	16834124	3374503	RO/EP/NP/IF
133.	DE	Apparatus for vapour- liquid-equilibrium (vle) data measurement	16834125	3377880	IF/EP DESIG.
134.	EP	Apparatus for vapour- liquid-equilibrium (vle) data measurement	16834125	3377880	RO/EP/NP/IF
135.	WO	An inorganic base antacid molecule with improved and novel Properties	Pct/in2018/050364		AB
136.	WO	Novel cobalt complexes, process for preparation and use thereof	Pct/in2018/050366		RO
137.	CN	Genetically modified cells and methods for expressing clot- specific streptokinase and methods of purifying same	201680073102		PP
138.	US	A process for in-vitro production of saffron	16/063674	10827695	IF
139.	SG	Novel 1,2,3 triazole- thiazole compounds, process for preparation and use thereof	11201805237 T		AB
140.	BR	Novel 1,2,3 triazole- thiazole compounds, process for preparation and use thereof	Br 11 20180127019		AB
141.	JP	Novel 1,2,3 triazole- thiazole compounds, process for preparation and use thereof	2018-532402	6586528	LP
142.	US	Novel 1,2,3 triazole- thiazole compounds, process for preparation and use thereof	16/064415	10246449	LP
143.	EP	3-PYRIMIDINYL PYRROLO [2,3-b] PYRIDINE AS NEW ANTICANCER AGENTS AND THE PROCESS FOR THE PREPARATION THEREOF	16834200	3383875	RO/EP/NP/IF
144.	FR	3-PYRIMIDINYL PYRROLO[2,3-b] PYRIDINE AS NEW ANTICANCER AGENTS AND THE PROCESS FOR THE PREPARATION THEREOF	16834200	3383875	IF/EP DESIG.
145.	GB	3-PYRIMIDINYL PYRROLO[2,3-b] PYRIDINE AS NEW ANTICANCER AGENTS AND THE PROCESS FOR THE PREPARATION THEREOF	16834200	3383875	IF/EP DESIG.
146.	WO	A dewaxing aid for petroleum refining	Pct/in2018/050420		RO
147.	EP	A process for in-vitro production of saffron	16875082	3389363	RO/EP/NP/IF
148.	ES	A process for in-vitro production of saffron	16875082	3389363	IF/EP DESIG.
149.	IT	A process for in-vitro production of saffron	16875082	3389363	IF/EP DESIG.
150.	BE	Novel 1,2,3 triazole- thiazole compounds, process for preparation and use thereof	16840334	3394054	LP
151.	CH	Novel 1,2,3 triazole- thiazole compounds, process for preparation and use thereof	16840334	3394054	LP
152.	DE	Novel 1,2,3 triazole- thiazole compounds, process for preparation and use thereof	16840334	3394054	LP
153.	EP	Novel 1,2,3 triazole- thiazole compounds, process for preparation and use thereof	16840334	3394054	RO/EP/NP/IF
154.	FR	Novel 1,2,3 triazole- thiazole compounds, process for preparation and use thereof	16840334	3394054	LP
155.	GB	Novel 1,2,3 triazole- thiazole compounds, process for preparation and use thereof	16840334	3394054	LP

156.	WO	Si BASED OXIDE ION CONDUCTING COMPOSITES AND ITS APPLICATIONS THEREOF	PCT/IN2018/050426		AB
157.	US	A process for the preparation of nicotine	16/068464	10421739	IF
158.	CN	Cellulase derived from metagenomics	201680078420	ZL2016800784196	IF
159.	JP	A nanobiocomposite for wound healing and a process for the preparation thereof	2018-555317	6895991	IF
160.	DE	A bioprocess for reducing perchlorate and/or nitrate	11 2016 006 253.2		PP
161.	WO	Isohexide-dioxalate compounds, their polymers and application thereof	Pct/in2018/050457		RO
162.	US	A nanobiocomposite for wound healing and a process for the preparation thereof	16/069672	10426809	IF
163.	JP	A thermo-laminated multilayered zircon based high temperature co-fired ceramic (HTCC) tape and the process thereof	2018-537797	6912483	IF
164.	US	A bioprocess for reducing perchlorate and/or nitrate	16/071374	11390547	IF
165.	US	(E)-4-(4- acrylamidophenoxy)-n-methylpicolinamide conjugates as potential anticancer agents	16/071105	11174230	IF
166.	US	N-((1-phenyl-9h- pyrido[3,4-b]indol-3-yl)methyl)cinnamamides as potential anticancer agents and preparation thereof	16/071687	10392385	IF
167.	JP	A process for dissociation of hydrates in presence of hydrate dissociation promoters	2018-557231	7071930	IF
168.	US	A process for dissociation of hydrates in presence of hydrate dissociation promoters	16/071621	10633572	IF
169.	US	A method for harvesting 3d chemical structures from file formats	16/072097	11456061	IF
170.	US	A lanthanum based upconverting microrods and application thereof	16/072104	11078415	IF
171.	DE	N-((1-phenyl-9h- pyrido[3,4-b]indol-3-yl)methyl)cinnamamides as potential anticancer agents and preparation thereof	17714570	3405469	IF/EP DESIG.
172.	EP	N-((1-phenyl-9h- pyrido[3,4-b]indol-3-yl)methyl)cinnamamides as potential anticancer agents and preparation thereof	17714570	3405469	RO/EP/NP/IF
173.	FR	N-((1-phenyl-9h- pyrido[3,4-b]indol-3-yl)methyl)cinnamamides as potential anticancer agents and preparation thereof	17714570	3405469	IF/EP DESIG.
174.	GB	N-((1-phenyl-9h- pyrido[3,4-b]indol-3-yl)methyl)cinnamamides as potential anticancer agents and preparation thereof	17714570	3405469	IF/EP DESIG.
175.	EP	A lanthanum based upconverting microrods and application thereof	17717885		PP

176.	EP	A nanobiocomposite for wound healing and a process for the preparation thereof	17715287	3402462	RO/EP/NP/IF
177.	FR	A nanobiocomposite for wound healing and a process for the preparation thereof	17715287	3402462	IF/EP DESIG.
178.	IT	A nanobiocomposite for wound healing and a process for the preparation thereof	17715287	3402462	IF/EP DESIG.
179.	DE	(E)-4-(4- acrylamidophenoxy)-n-methylpicolinamide conjugates as potential anticancer agents	17707967	3405457	IF/EP DESIG.
180.	EP	(E)-4-(4- acrylamidophenoxy)-n-methylpicolinamide conjugates as potential anticancer agents	17707967	3405457	RO/EP/NP/IF
181.	FR	(E)-4-(4- acrylamidophenoxy)-n-methylpicolinamide conjugates as potential anticancer agents	17707967	3405457	IF/EP DESIG.
182.	GB	(E)-4-(4- acrylamidophenoxy)-n-methylpicolinamide conjugates as potential anticancer agents	17707967	3405457	IF/EP DESIG.
183.	BE	A process for the preparation of nicotine	17707969	3400219	IF/EP DESIG.
184.	CH	A process for the preparation of nicotine	17707969	3400219	IF/EP DESIG.
185.	DE	A process for the preparation of nicotine	17707969	3400219	IF/EP DESIG.
186.	EP	A process for the preparation of nicotine	17707969	3400219	RO/EP/NP/IF
187.	FR	A process for the preparation of nicotine	17707969	3400219	IF/EP DESIG.
188.	GB	A process for the preparation of nicotine	17707969	3400219	IF/EP DESIG.
189.	WO	Indole (sulfomyl) n- hydroxy benzamide derivatives as selectivehdac inhibitors	PCT/IN20 18/0 50514		RO
190.	WO	Process for the preparation of zafirlukast and analogs thereof	PCT/IN20 18/0 50513		RO
191.	EP	A pharmaceutical composition for preventing and treating malaria and toxoplasmosis	17720892		AB
192.	US	A pharmaceutical composition for preventing and treating malaria and toxoplasmosis	15/999537	10562922	AB
193.	KR	A process for dissociation of hydrates in presence of hydrate dissociation promoters	10-2018- 7023902		PP
194.	US	Combination of Clofazimine and Imatinib for effective therapy of drug-resistant myeloid leukemia	16/117156	10576078	IF
195.	US	A method for automatic volumetric segmentation of human upper respiratory tract	16/118088	10699415	IF
196.	CN	Substituted aurone alkaloids as anti- mycobacterial agents	201780014 936		PP
197.	EP	Substituted aurone alkaloids as anti- mycobacterial agents	17725780	3423449	RO/EP/NP/IF

198.	GB	Substituted aurone alkaloids as anti- mycobacterial agents	17725780	3423449	IF/EP DESIG.
199.	US	Recombinant extracellular chitinase from <i>brevibacilluslaterosporus</i> for biological control and other industrial uses	16/122612	11168314	IF
200.	WO	Phosphine free co based catalyst, process for the preparation and use thereof	PCT/IN20 18/0 50572		AB
201.	WO	Continuous flow production of metal nanoforms	PCT/IN20 18/0 50576		RO
202.	US	Novel nickel catalysts, process for preparation and use thereof for alkylation, benzylation, arylation of heteroarenes	16/083085	10940468	IF
203.	US	Synthesis and Biological Evaluation of 4?- Amidotriazole linked Podophyllotoxin derivatives as Potential Anticancer Agents	16/084162	10947248	IF
204.	WO	Gastroretentive sustained release formulations of <i>bergenia ciliata</i>	PCT/IN20 18/0 50588		RO
205.	BR	A zero water chrome tanning process	BR11201 8068661- 1		PP
206.	DE	A zero water chrome tanning process	17714568	3430174	LP
207.	EP	A zero water chrome tanning process	17714568	3430174	RO/EP/NP/IF
208.	FR	A zero water chrome tanning process	17714568	3430174	LP
209.	GB	A zero water chrome tanning process	17714568	3430174	LP
210.	IT	A zero water chrome tanning process	17714568	3430174	IF/EP DESIG.
211.	MX	A zero water chrome tanning process	MX/a/201 8/011207		AB
212.	NL	A zero water chrome tanning process	17714568	3430174	IF/EP DESIG.
213.	PT	A zero water chrome tanning process	17714568	3430174	LP
214.	TR	A zero water chrome tanning process	17714568	3430174	IF/EP DESIG.
215.	CN	A zero water chrome tanning process	201780018 09 9	ZL20178 0 018098.5	IF
216.	ID	A zero water chrome tanning process	P0020180 7201	IDP0000 72810	LP
217.	LK	A zero water chrome tanning process	20144	20144	IF
218.	TH	A zero water chrome tanning process	180100559 7		AB
219.	GB	A device for sensing the pose and motion of human's arm hand	1815201	2563545	IF
220.	US	A device for sensing the pose and motion of human's arm hand	16/086160		AB
221.	WO	Novel peptide as potent inhibitor of protein aggregation	PCT/IN20 18/0 50610		RO

222.	WO	Shaped objects for use insecurity applications	PCT/IN20 18/0 50613		RO
223.	AU	Blocking toll-like receptor 9 signaling with small molecule antagonist	201723875 8	20172387 58	IF
224.	CA	Blocking toll-like receptor 9 signaling with small molecule antagonist	3018537		PP
225.	US	Blocking toll-like receptor 9 signaling with small molecule antagonist	16/086926	10662177	IF
226.	US	Nucleotide sequence encoding 9-lipoxygenase and recombinant constructs comprising the same	16/088725	11339381	IF
227.	US	Silicon incorporated quinolines with anti- malarial and anti- toxoplasmosis activity	16/088695	10550135	IF
228.	AP	A zero water chrome tanning process	AP/P/201 8/011021	AP 5442	IF
229.	US	A novel cyclic compounds and process for the preparation there of	16/088871	11002524	IF
230.	US	An improved one pot, one step process for the halogenation of aromatics using solid acid catalysts	16/086831	11111207	IF
231.	US	Nucleotide sequences encoding enzymes for lactone synthesis	16/091229	10801033	IF
232.	US	Remote monitoring and controlling physical parameters of a device	16/091130	10628720	IF
233.	WO	Sustained release formulations of crocussativus	PCT/IN20 18/0 50629		RO
234.	EP	A method for o- and s- glycosylation of peptides or polypeptides using a multifunctional glycosyltransferase	17737380	3423587	RO/EP/NP/IF
235.	NL	A method for o- and s- glycosylation of peptides or polypeptides using a multifunctional glycosyltransferase	17737380	3423587	IF/EP DESIG.
236.	US	A method for o- and s- glycosylation of peptides or polypeptides using a multifunctional glycosyltransferase	16/091186		PP
237.	EP	Nucleotide sequences encoding enzymes for lactone synthesis	17737382		PP
238.	WO	A reinforced cellulose paper composite	PCT/IN20 18/0 50632		RO
239.	WO	Synthesis of highly crystalline, disentangled, ultra high molecular weight polyethylene using novel catalytic system	PCT/IN20 18/0 50637		RO
240.	DE	Synthesis and Biological Evaluation of 4?- Amidotriazole linked Podophyllotoxin derivatives as Potential Anticancer Agents	17725781	3426661	IF/EP DESIG.
241.	EP	Synthesis and Biological Evaluation of 4?- Amidotriazole linked Podophyllotoxin derivatives as Potential Anticancer Agents	17725781	3426661	RO/EP/NP/IF
242.	FR	Synthesis and Biological Evaluation of 4?- Amidotriazole linked Podophyllotoxin derivatives as Potential Anticancer Agents	17725781	3426661	IF/EP DESIG.

243.	GB	Synthesis and Biological Evaluation of 4?-Amidotriazole linked Podophyllotoxin derivatives as Potential Anticancer Agents	17725781	3426661	IF/EP DESIG.
244.	WO	Zinc supplementation to decrease Galactosylation	PCT/IN20 18/0 50665		AB
245.	EP	Blocking toll-like receptor 9 signaling with small molecule antagonist	17725785	3433249	IF
246.	US	Printable bi-luminescent security ink and process thereof	16/163982	11247506	IF
247.	DE	Nucleotide sequence encoding 9-lipoxygenase and recombinant constructs comprising the same	17727005	3436573	IF/EP DESIG.
248.	EP	Nucleotide sequence encoding 9-lipoxygenase and recombinant constructs comprising the same	17727005	3436573	RO/EP/NP/IF
249.	FR	Nucleotide sequence encoding 9-lipoxygenase and recombinant constructs comprising the same	17727005	3436573	IF/EP DESIG.
250.	EP	A novel cyclic compounds and process for the preparation Thereof	17725785		PP
251.	US	Nimbolide analogs as anti-cancer agents and preparation thereof	16/172045	10947249	IF
252.	WO	Purine based compounds as toll-like receptor 9 antagonist	PCT/IN20 18/0 50714		RO
253.	US	Novel glycolactams derivative and process for preparation thereof	16/099038	10774073	IF
254.	US	A membrane filtration device	16/099921	10842165	IF
255.	WO	A process for zero water discharge for post tanning operations	PCT/IN20 18/0 50738		RO
256.	WO	Warpage free fdm printing of polymers	PCT/IN20 18/0 50740		RO
257.	ET	A process for zero water discharge for post tanning operations	ET/P/201 8/463		PP
258.	WO	A catalyst composition for different reforming techniques	PCT/IN20 18/0 50764		RO
259.	CN	A method for o- and s- glycosylation of peptides or polypeptides using a multifunctional glycosyltransferase	201780031 56 2	ZL20178 0 031562.4	IF
260.	WO	Method and system for activity recording, visualisation and analysis for identified segments of forest	PCT/IN20 18/0 50786		RO
261.	BD	Method and system for activity recording, visualisation and analysis for identified segments of forest	319/2018	1006266	IF
262.	US	An improved process for the synthesis of Ivacaftor	16/305280	11274081	IF
263.	WO	A process for the treatment of raw hide/skin trimming	PCT/IN20 18/0 50803		RO

264.	ET	A process for the treatment of raw hide/skin trimming	ET/P/2018/464	00101	IF
265.	WO	Nitration of Benzene	PCT/IN2018/050815		RO
266.	US	A composition of melanin and process for preparaiton thereof	16/307617	11109589	IF
267.	AU	Production of metalnanoparticles in aqueous slution	2018274973	2018274973	IF
268.	DE	A membrane filtrationdevice	17745879	3451845	IF/EP DESIG.
269.	EP	A membrane filtrationdevice	17745879	3451845	RO/EP/NP/IF
270.	FR	A membrane filtrationdevice	17745879	3451845	IF/EP DESIG.
271.	US	Biomarkers useful for detection of grades of human breast cancer	16/219572	11136628	IF
272.	US	Temozolomide resistantcells and a method for screening the same	16/218958		AB
273.	WO	Pharmaceutical Formulationsfor Management of Cancers	PCT/IN2018/050835		AB
274.	EP	An improved process forthe synthesis of Ivacaftor	17743096		PP
275.	WO	Granulocyte-Colony Stimulating Factor Variants and Their Covalently Modified Derivatives	PCT/IN2018/050873		RO
276.	WO	Process for the preparationof pyrylium salts	PCT/IN2018/050898		RO

Patents filed internationally to various countries by CSIR -2019					
S.No	Country Code	Title	Application No	Patent No	Status
1	WO	A process for the preparation of natural crystallized thymol from monarda citriodora (jammumonarda) oil	PCT/IN2019/050003		RO
2	WO	Artemisinic acid glycoconjugate compounds, process for preparation and use thereof	PCT/IN2019/050006		RO
3	EP	A process for the preparation of polymeric biosurfactants	19150824		PP
4	WO	Expression vector with altered backbone for enhanced heterologous protein expression	PCT/IN2019/050014		RO
5	US	A Process of Fabrication of erbium and Ytterbium-co-Doped multi-elements silica glass based cladding-pumped fiber for use as a highly efficient high power optical amplifier	16/243621	11407671	IF
6	US	A method for preventing retraction of aqueous drops	16/316844		PP
7	US	Novel dithiophene compound, preparation and its application in organic photovoltaics thereof	16/317087	10815256	IF
8	JP	A method for preventing retraction of aqueous drops	2019-501719	7143274	IF
9	DE	A method for preventing retraction of aqueous drops	17781553	3484963	IF/EP DESIG.
10	EP	A method for preventing retraction of aqueous drops	17781553	3484963	RO/EP/ NP/IF
11	ES	A method for preventing retraction of aqueous drops	17781553	3484963	IF/EP DESIG.
12	FR	A method for preventing retraction of aqueous drops	17781553	3484963	IF/EP DESIG.
13	WO	Acid and oxidative resistant cation exchange membrane and its method of preparation thereof	PCT/IN2019/050043		RO
14	US	A single step process for the synthesis of furfuryl ethyl ether	16/251671	10428038	IF
15	DE	Self- assembled catalysts and use thereof in olefin polymerization	17801505	3491031	IF/EP DESIG.
16	EP	Self- assembled catalysts and use thereof in olefin polymerization	17801505	3491031	RO/EP/ NP/IF

17	FR	Self- assembled catalystsand use thereof in olefinpolymerization	17801505	3491031	IF/EP DESIG.
18	GB	Self- assembled catalystsand use thereof in olefinpolymerization	17801505	3491031	IF/EP DESIG.
19	NL	Self- assembled catalystsand use thereof in olefinpolymerization	17801505	3491031	IF/EP DESIG.
20	US	Novel squaraine dyes andapplications thereof	16/320177	11377562	IF
21	US	Self- assembled catalystsand use thereof in olefinpolymerization	16/320435	10843179	IF
22	WO	Uv shielding bio-derivedfuranic polymers	PCT/IN2019/050069		RO
23	WO	A rapid, low cost process for the preparation of serssubstrate and sers substrate prepared thereby	PCT/IN2019/050102		RO
24	WO	High performance glossy finish green hybrid composites with variable density and an improvedprocess for making thereof	PCT/IN2019/050107		RO
25	CA	Furanochalcones as inhibitors of cyp1a1, cyp1a2and cyp1b1 for cancer chemoprevention	3033569		AB
26	US	Furanochalcones as inhibitors of cyp1a1, cyp1a2and cyp1b1 for cancer chemoprevention	16/325002		AB
27	WO	Process development for 5-hydroxymethylfurfural (5-hmf) synthesis from carbohydrates	PCT/IN2019/050116		RO
28	WO	Fluorescent polymer for visual solid state sensing ofvolatile organic compounds	PCT/IN2019/050129		RO
29	US	Recombinant protein-based method for the delivery of silencer RNA to target the brain	16/278319	10640539	IF
30	WO	Heterocyclic compounds, process for the preparationand use thereof	PCT/IN2019/050130		RO
31	US	A stable dianionic ?-dimer atambient conditions and a process for preparation thereof, and their white light emission properties useful in designing the white light emitting devices	16/298201	11104640	IF
32	EP	Furanochalcones as inhibitors of cyp1a1, cyp1a2and cyp1b1 for cancer chemoprevention	17801508		AB
33	AU	Organic-inorganic composite material for removal of anionic pollutants from water andprocess for the preparationthereof	2019201715	2019201715	LP
34	US	An improved process for production of hydrazinehydrate	16/335225	11225413	IF

35	US	A device for collecting water sample to concentrate diversified bacteria from different water depth	16/335229	10690569	IF
36	EP	A device for collecting water sample to concentrate diversified bacteria from different water depth	17855188		PP
37	WO	A method to screen cancer	PCT/IN2019/050237		RO
38	AU	A liposomal composition of photo system-i for treatment of cancer	2017339268		AB
39	US	A liposomal composition of photo system-i for treatment of cancer	16/339759		AB
40	US	Water oxidation catalyst having low overpotential for oxygen evolution reaction	16/339753	10639615	IF
41	US	Novel compounds and process for preparation of the same from cashew nut shell liquid (cnsL)	16/339828	10683317	IF
42	WO	A curcumin loaded stabilized polymeric nanoparticles with increased solubility and photo- stability and a green process for the synthesis thereof	PCT/IN2019/050288		RO
43	ZA	A liposomal composition of photo system-i for treatment of cancer	2019/02307		AB
44	WO	Novel antimalarial compounds, process for preparation and their use for drug resistant malaria	PCT/IN2019/050309		RO
45	WO	Sustained release formulations of dysoxylumbinectariferum	PCT/IN2019/050313		RO
46	US	Novel pyridinium oxazole dyad scaffold and a process for preparation thereof	16/343260	10711012	LP
47	US	Gold nanoparticles-based new formulation useful for cancer therapy	16/344519	10806715	IF
48	US	A process for the synthesis of air stable metal sulphide quantum dots	16/344580	11352556	IF
49	US	An improved process for the preparation of bimetallic core-shell nanoparticles and their catalytic applications	16/345335	11305344	IF
50	US	A new solid porous form of trimesic acid and a process for preparation thereof	16/401664	10730820	IF
51	WO	Edible coatings, a process for the preparation and applications thereof	PCT/IN2019/050350		RO
52	WO	Peptoid of formula I, pharmaceutical compositions and method for preparation thereof	PCT/IN2019/050358		AB

53	EP	A liposomal composition of photo system-i for treatment of cancer	17780904		AB
54	US	Novel improved process for conversion of alkanes to alkenes	16/348239	10774019	IF
55	AU	Method for mycobacterium tuberculosis dection using small angle x-ray scattering profile of hair	2017365237		PP
56	WO	A process for the synthesis of metal catalysts	PCT/IN2019/050371		AB
57	WO	Biomarker and an in-vitro method for head & neck cancer prognosis	PCT/IN2019/050386		AB
58	PH	A process for the preparation of potassic fertiliser from alcohol distillery effluent	1-2019-501059		PP
59	WO	Indole carboxamide compounds, process for preparation and use thereof	PCT/IN2019/050391		RO
60	ZA	Method for mycobacterium tuberculosis dection using small angle x-ray scattering profile of hair	2019/03073		PP
61	NZ	Method for mycobacterium tuberculosis dection using small angle x-ray scattering profile of hair	753748		PP
62	US	Palladium (ii)-catalyzed yc(sp)3-h alkynylation of amines	16/419341	10787418	IF
63	CN	Method for mycobacterium tuberculosis dection using small angle x-ray scattering profile of hair	201780072316		PP
64	US	Development of gravity operated low cost household defluoridation device using gamma nanoalumina incorporated filter	16/421220		PP
65	US	Method for mycobacterium tuberculosis dection using small angle x-ray scattering profile of hair	16/463487	11313815	IF
66	WO	Bicycle topoisomerase i inhibiting compounds, process for preparation and use thereof	PCT/IN2019/050410		RO
67	WO	Nonapeptide of formula i, pharmaceutical compositions and methods for preparation thereof	PCT/IN2019/050418		AB
68	US	Metalloporphyrin 2d-Sheets For Efficient Photo- And Electro- Catalytic Splitting Of Water	16/465918	11098156	IF
69	LK	Electrospun collagen- graphene-polymer composite nanofibres for supercapacitors	20536		PP
70	US	Bioactive extract, fraction of cassia occidentalis and formulation thereof for bone regeneration	16/434323	11304927	IF

71	US	A novel compound for the detection of hno in biological systems	16/467842		AB
72	US	A process for the preparation of potassic fertiliser from alcohol distillery effluent	16/468603	10793480	IF
73	EP	A novel compound for the detection of hno in biological systems	17829044	3551637	RO/EP/ NP/IF
74	GB	A novel compound for the detection of hno in biological systems	17829044	3551637	LP
75	WO	Solid dispersion comprising an anticancer compound with improved solubility and efficacy	PCT/IN2019/050454		RO
76	US	Heavy petroleum residue derived iron incorporated sp ² carbon nanogranules for improved synthesis of light olefins	16/441943	10526257	IF
77	EP	Method for mycobacterium tuberculosis detection using small angle x-ray scattering profile of hair	17825972	3545299	RO/EP/ NP/IF
78	GB	Method for mycobacterium tuberculosis detection using small angle x-ray scattering profile of hair	17825972	3545299	IF/EP DESIG.
79	RO	Method for mycobacterium tuberculosis detection using small angle x-ray scattering profile of hair	17825972	3545299	IF/EP DESIG.
80	WO	Modified microfluidic impedance based lab on chip for individual cell counting and a process for fabrication thereof	PCT/IN2019/050478		RO
81	WO	A domestic cooking burner for piped natural gas	PCT/IN2019/050482		RO
82	BD	A domestic cooking burner for piped natural gas	166/2019	1006383	IF
83	BR	A process for the preparation of potassic fertiliser from alcohol distillery effluent	BR 11 2019 013541 3		PP
84	EP	Electrospun collagen- graphene-polymer composite nanofibres for supercapacitors	17878586		PP
85	JP	Electrospun collagen- graphene-polymer composite nanofibres for supercapacitors	2019-552443		PP
86	CN	Electrospun collagen- graphene-polymer composite nanofibres for supercapacitors	201780082648.x		PP

87	US	Electrospun collagen- graphene-polymer composite nanofibres forsupercapacitors	16/465,850		PP
88	TH	A process for the preparation of potassic fertiliser from alcohol distillery effluent	1901004250		PP
89	KR	Electrospun collagen- graphene-polymer composite nanofibres forsupercapacitors	10-2019-7019891		PP
90	US	A one pot process for the preparation of methanol from carbon dioxide	16/507307	10758896	LP
91	WO	Synbiotic composition for improving immune response and antioxidant capacity during aging	PCT/IN2019/050515		RO
92	WO	Screening kit for detection of precancerous lesions of cervix and process for the preparation thereof	PCT/IN2019/050540		RO
93	WO	A therapeutic protein suitable for feeding through gastro intestinal tract and process for the preparation thereof	PCT/IN2019/050566		RO
94	EP	Spirooxindole compounds as gsk3? Inhibitors and process for preparation thereof	18715984		PP
95	US	A biodegradable theranostic nano-composite and uses thereof	16/483897	10945957	IF
96	WO	Inhibitors to target hiv-1 nef-cd80/cd86 interactions for therapeutic intervention	PCT/IN2019/050594		RO
97	WO	A glossy finish sandwich composite and process for preparing the same	PCT/IN2019/050599		RO
98	WO	Recombinant microbial system(s) for directed evolution of glycosins and method(s) of preparation thereof	PCT/IN2019/050623		RO
99	EP	Porous poly(benzimidazole) as separator for lithium ion batteries	18763975		PP
100	US	Porous poly(benzimidazole) as separator for lithium ion batteries	16/490851		PP
101	US	A single step oxidation of alkane or alkene	16/491713	11479523	IF
102	US	Spirooxindole compounds as gsk3? Inhibitors and process for preparation thereof	16/492359	11306100	IF
103	US	A catalyst bound alpha radical and synthesis of oxo compound using the same	16/492733	11286240	IF

104	WO	Thermoelectric materials and a process for the preparation thereof	PCT/IN2019/050675		RO
105	EP	A process for the purification of recombinant antibody fragment	18719670		PP
106	BR	A process for the purification of recombinant antibody fragment	BR112019019613-7		PP
107	CA	A process for the purification of recombinant antibody fragment	3057286		PP
108	US	A process for coating a biomedical implant with a biocompatible polymer	16/495683	11439728	IF
109	JP	A process for the purification of recombinant antibody fragment	2019-552246		PP
110	CH	A process for coating a biomedical implant with a biocompatible polymer	18772197	3600463	IF/EP DESIG.
111	EP	A process for coating a biomedical implant with a biocompatible polymer	18772197	3600463	RO/EP/ NP/IF
112	FR	A process for coating a biomedical implant with a biocompatible polymer	18772197	3600463	IF/EP DESIG.
113	GB	A process for coating a biomedical implant with a biocompatible polymer	18772197	3600463	IF/EP DESIG.
114	NL	A process for coating a biomedical implant with a biocompatible polymer	18772197	3600463	IF/EP DESIG.
115	MX	A process for the purification of recombinant antibody fragment	MX/A/2019/011343		PP
116	US	A process for the purification of recombinant antibody fragment	16/496895		PP
117	US	A vetiver plant named cimap - forgaika having novel combination of a forage grass and a soil binder	16/602460	PP33197 P3	IF
118	WO	Multilayer non-porous membranes based on polybenzimidazoles	PCT/IN2019/050776		RO
119	EP	A one step process for the hydroformylation of olefins	18728755		PP
120	EP	Organic flexible ferroelectric polymer nanocomposites	18730875		PP
121	KR	A process for the purification of recombinant antibody fragment	10-2019-7031076		PP
122	WO	Decalin and hydrindane derivatives, a process for their preparation and pharmaceutical composition containing them	PCT/IN2019/050779		RO

123	EP	Continuous flow interfacial separation of nanoparticles using centrifugal extractor	18728989		PP
124	JP	Organic flexible ferroelectric polymer nanocomposites	2019-558422		PP
125	WO	Heating assembly i, indian application no: 201821040548 Filed on 26 oct 2018	PCT/IN2019/050785		RO
126	US	Modified cyclodextrin coated magnetite nanoparticles for targeted delivery of hydrophobic anticancer agents	16/664220		AB
127	BD	Heating assembly i, indian application no: 201821040548 Filed on 26 oct 2018	321/2019		PP
128	US	Organic flexible ferroelectric polymer nanocomposites	16/609127	11034829	IF
129	EP	?-Spiroketal- ? -lactones and pharmaceutical composition containing same and process of preparation thereof	18730130		PP
130	EP	A new reagent for specific detection of hocl in physiological condition	18731197		PP
131	US	A new reagent for specific detection of hocl in physiological condition	16/609423	11319331	IF
132	CN	A process for the purification of recombinant antibody fragment	201880028984		PP
133	US	Boronic acid derivatives, a process for preparation and use thereof	16/610020	10781220	IF
134	US	Continuous flow interfacial separation of nanoparticles using centrifugal extractor	16/610211		PP
135	US	A one step process for the hydroformylation of olefins	16/610464	10865174	IF
136	US	?-Spiroketal- ? -lactones and pharmaceutical composition containing same and process of preparation thereof	16/610383	11339174	IF
137	BR	A cloning, expression and refolding process for preparing antibody fragments.	BR112019023795-0		PP
138	CA	A cloning, expression and refolding process for preparing antibody fragments.	3063320		PP
139	KR	Continuous flow interfacial separation of nanoparticles using centrifugal extractor	10-2019-7033587		AB
140	PK	A process for recovery of de-salted organics from spent wash	760/2019		PP

141	WO	A process for recovery of de-salted organics from spent wash	PCT/IN2019/050837		RO
142	CN	A cloning, expression and refolding process for preparing antibody fragments.	201880032153		PP
143	JP	A cloning, expression and refolding process for preparing antibody fragments.	2019-563521		PP
144	MX	A cloning, expression and refolding process for preparing antibody fragments.	MX/A/2019/013750		PP
145	US	A cloning, expression and refolding process for preparing antibody fragments.	16/685041		PP
146	US	Substituted methanopyrido[2, 1-a] isoindolones as machr modulators for treating various associated pathophysiological conditions	16/614482	11065235	LP
147	EP	A cloning, expression and refolding process for preparing antibody fragments.	18731198		PP
148	EP	Substituted methanopyrido[2, 1-a] isoindolones as machr modulators for treating various associated pathophysiological conditions	18728990	3625232	LP
149	BR	An improved dispersing agent composition for application in tanning and a process for the preparation thereof	11 2019 024702-5		AB
150	IR	An improved dispersing agent composition for application in tanning and a process for the preparation thereof	139850140003007000	101459	LP
151	SA	An improved dispersing agent composition for application in tanning and a process for the preparation thereof	519410621		AB
152	US	A single step process for the synthesis of furan derivatives from carbohydrates	16/616675	11136302	IF
153	BE	A process for the synthesis of aromatic carbamates	18730876	3630717	IF/EP DESIG.
154	DE	A process for the synthesis of aromatic carbamates	18730876	3630717	IF/EP DESIG.
155	EP	A process for the synthesis of aromatic carbamates	18730876	3630717	RO/EP/ NP/IF
156	NL	A process for the synthesis of aromatic carbamates	18730876	3630717	IF/EP DESIG.
157	JP	An assembly of porphyrin-fullerene and use thereof	2019-565219		PP

158	LK	An improved dispersing agent composition for application in tanning and a process for the preparation thereof	LK/P/20876		PP
159	TH	An improved dispersing agent composition for application in tanning and a process for the preparation thereof	1901007404		AB
160	EP	A single step process for the synthesis of furan derivatives from carbohydrates	18766053		PP
161	US	A process for the synthesis of aromatic carbamates	16/617144	10703714	IF
162	EP	Furo[2,3-b]pyran-2-one compounds, preparation and composition thereof	18733351		PP
163	WO	A photocatalyst device for hydrogen generation and partial oxidation of alcohols in direct sunlight	PCT/IN2019/050867		RO
164	ZA	An improved dispersing agent composition for application in tanning and a process for the preparation thereof	2019/07934	2019/07934	AB
165	US	Furo[2,3-b]pyran-2-one compounds, preparation and composition thereof	16/618720	10941155	IF
166	GB	Indolylkojyl methane analogues, process of preparation thereof and use as inhibitor of cancer cell invasion and metastasis	1917719	GB2576672	IF
167	US	Novel cobalt complexes, process for preparation and use thereof	16/620125	11040994	IF
168	EP	An improved dispersing agent composition for application in tanning and a process for the preparation thereof	18805112		AB
169	WO	Highly efficient process for the preparation of sitagliptin via rhodium catalyzed asymmetric hydrogenation.	PCT/IN2019/050896		RO
170	WO	A process for isolation of nigericin from streptomyces sp. Dasncl-29	PCT/IN2019/050900		RO
171	US	Bromonaphthalimide compounds and phosphorescent liquid formulation thereof	16/712265	11040946	IF
172	WO	Cdna SEQUENCES ENCODING ENZYMES OF LIMONOID BIOSYNTHESIS, CO-EXPRESSION OF SAID ENZYMES AND MUTANT OF THE SAME	PCT/IN2019/050915		AB
173	KR	A cloning, expression and refolding process for preparing antibody fragments.	2019-7037079		PP

174	AP	An improved dispersing agent composition for application in tanning and aprocess for the preparationthereof	AP/P/2019/012093		AB
175	EP	An assembly of porphyrin-fullerene and use thereof	18731532		PP
176	CH	Novel cobalt complexes, process for preparationand use thereof	18737037	EP3634950	IF/EP DESIG.
177	DE	Novel cobalt complexes, process for preparationand use thereof	18737037	EP3634950	IF/EP DESIG.
178	EP	Novel cobalt complexes, process for preparationand use thereof	18737037	EP3634950	RO/EP/ NP/IF
179	FR	Novel cobalt complexes, process for preparationand use thereof	18737037	EP3634950	IF/EP DESIG.
180	WO	A mixed metal oxide catalysed and cavitationinfluenced process for hydration of nitrile	PCT/IN2019/050942		RO
181	US	Indolylkojyl methane analogues, process of preparation thereof and use as inhibitor of cancer cell invasion and metastasis	16/626274	11180486	IF
182	VN	An improved dispersing agent composition for application in tanning and aprocess for the preparationthereof	1-2019-07321		AB

Patents filed internationally to various countries by CSIR -2020					
SNo	Country Code	Title	Application No	Patent No	Status
1	CN	An improved dispersing agent composition for application in tanning and a process for the preparation thereof	2018800447168		PP
2	EP	Isohexide-dioxalate compounds, their polymers and application thereof	18752874		PP
3	US	Isohexide-dioxalate compounds, their polymers and application thereof	16/629862		PP
4	WO	A process for the preparation of platform chemicals from sugar using acid catalyst	PCT/IN2020/050041		RO
5	WO	Fibrinolytic composition and method of its preparation	PCT/IN2020/050074		RO
6	WO	Kit for detecting melanoma	PCT/IN2020/050073		RO
7	WO	A continuous flow micro-total process system for preparation of celecoxib and analogs thereof	PCT/IN2020/050088		RO
8	EP	Antimicrobial peptide and its use thereof	17784704		AB
9	US	A cloning, expression and refolding process for preparing antibody fragments.	16/775811 CIP of 16/685041		PP
10	US	Antimicrobial peptide and its use thereof	16/635202	11142562	LP
11	WO	Novel marine biosurfactant and uses thereof	PCT/IN2020/050105		RO
12	WO	A metal ion battery having ionomer membrane separator and free-standing electrode	PCT/IN2020/050109		RO
13	CN	Isohexide-dioxalate compounds, their polymers and application thereof	201880052462		PP
14	US	Novel pyridinium oxazole dyad scaffold and a process for preparation thereof	16/802335	11021490	LP
15	WO	A kit for detection of mutations associated with genetic disorders	PCT/IN2020/050189		RO
16	WO	A novel facile aqueous based extraction of progesterone metabolites from faeces sample for non-invasive, simple, affordable and farmer friendly paper based kit for pregnancy detection in cattle and buffaloes	PCT/IN2020/050202		RO
17	JP	Phosphine free co based catalyst, process for the preparation and use thereof	2020-513893		AB
18	US	Phosphine free co based catalyst, process for the preparation and use thereof	16/644850		AB

19	EP	Continuous flow production of metal nanoforms	18778570		PP
20	US	Continuous flow production of metal nanoforms	16/644597		PP
21	CN	Continuous flow production of metal nanoforms	201880057938		PP
22	JP	Continuous flow production of metal nanoforms	2020-513696		PP
23	US	Process for the preparation of zafirlukast and analogs thereof	16/646462	10752585	IF
24	WO	A synergistic formulation against acne and a process for the preparation thereof	PCT/IN2020/050228		RO
25	US	Novel peptide as potent inhibitor of protein aggregation	16/647149		PP
26	US	Shaped objects for use in security applications	16/648136	11352750	IF
27	WO	Two dimensional organic polymer and derivatives thereof for supercapacitor applications	PCT/IN2020/050252		RO
28	WO	A process for the asymmetric synthesis of sitagliptin intermediate	PCT/IN2020/050251		AB
29	CA	Novel peptide as potent inhibitor of protein aggregation	3076473		PP
30	JP	Novel peptide as potent inhibitor of protein aggregation	2020-516884		PP
31	EP	Novel peptide as potent inhibitor of protein aggregation	18792546		PP
32	WO	A synergistic formulation against acne and a process for the preparation thereof	PCT/IN2020/050263		RO
33	WO	Stable solvent-free charge transfer liquid	PCT/IN2020/050266		AB
34	US	Vehicle mounted sliding type retractable mobile protective shield	16/827474	10962333	IF
35	WO	Indole-ynone mediated benzoannulation process for the preparation of carbazoles-carbazomycina, calothrixin b and staurosporinone	PCT/IN2020/050275		RO
36	WO	Cellulosic complex and applications thereof	PCT/IN2020/050274		RO
37	WO	Cell penetrating peptide assisted targeting and light assisted killing of cancer cells by photosensitizer protein	PCT/IN2020/050272		RO

38	US	Synthesis of highly crystalline, disentangled, ultra high molecular weight polyethylene using novel catalytic system	16/650729	11155654	IF
39	EP	Shaped objects for use in security applications	18858445		PP
40	WO	Bio-compatible polyurethane microcapsules and process for the preparation thereof	PCT/IN2020/050289		RO
41	CA	Sustained release formulations of crocus sativus	3077335		PP
42	CA	Gastroretentive sustained release formulations of bergenia ciliata	3077342		PP
43	WO	Process for the preparation of derivatives of 1,1-dialkylethane-1,2-diols as useful intermediates	PCT/IN2020/050309		RO
44	WO	Cloning and expression of in-vivo refolded antibody fragment	PCT/IN2020/050312		RO
45	US	Micro-electrolysis reactor for ultra fast, oxidant free, C-C coupling reaction and synthesis of daclatasvir thereof	16/837070	11344858	IF
46	KR	Continuous flow production of metal nanoforms	10-2020-7009426		PP
47	JP	Synthesis of highly crystalline, disentangled, ultra high molecular weight polyethylene using novel catalytic system	2020-519257		PP
48	JP	A reinforced cellulose paper composite	2020-519313		PP
49	US	Sustained release formulations of crocus sativus	16/753969		PP
50	US	A reinforced cellulose paper composite	16/753888		PP
51	US	Gastroretentive sustained release formulations of bergenia ciliata	16/755919	11446346	IF
52	EP	Sustained release formulations of crocus sativus	18796785		PP
53	US	A water soluble polymer surfactant, process for preparation and application thereof	16/850900		PP
54	EP	Gastroretentive sustained release formulations of bergenia ciliata	18783142		PP
55	US	Phytic Acid based metallogel and applications thereof	16/852528	11283095	IF
56	WO	Crystalline low dimensional polymers and a process for the preparation thereof	PCT/IN2020/050320		RO

57	US	Photo-catalytic splitting of water using self-assembled metalloporphyrin 2d- sheets	16/853870	11292716	IF
58	WO	A process for the synthesis of nanoparticles of transition metal chalcogenides	PCT/IN2020/050374		RO
59	CA	Purine based compounds as toll-like receptor 9 antagonist	3080102		PP
60	CH	Purine based compounds as toll-like receptor 9 antagonist	18822155	EP3707140	IF/EP DESIG
61	DE	Purine based compounds as toll-like receptor 9 antagonist	18822155	EP3707140	IF/EP DESIG
62	EP	Purine based compounds as toll-like receptor 9 antagonist	18822155	EP3707140	RO/E P/NP/IF
63	FR	Purine based compounds as toll-like receptor 9 antagonist	18822155	EP3707140	IF/EP DESIG
64	GB	Purine based compounds as toll-like receptor 9 antagonist	18822155	EP3707140	IF/EP DESIG
65	US	Novel compounds and process for preparation of the same from cashew nut shell liquid (cnsd)	16/857501	11267833	IF
66	AU	Purine based compounds as toll-like receptor 9 antagonist	2018364807		PP
67	JP	Ecofriendly and biodegradable lubricant formulation and process for preparation thereof	2020-524240	7119083	IF
68	EP	Synthesis of highly crystalline, disentangled, ultra high molecular weight polyethylene using novel catalytic system	18863906		PP
69	US	Purine based compounds as toll-like receptor 9 antagonist	16/760727	11168084	IF
70	EP	Ecofriendly and biodegradable lubricant formulation and process for preparation thereof	18727452		PP
71	US	Ecofriendly and biodegradable lubricant formulation and process for preparation thereof	16/760963	11142718	IF
72	EP	A reinforced cellulose paper composite	18864422		PP
73	DE	Continuous flow production of metal nanoforms	18778570		PP
74	ES	Continuous flow production of metal nanoforms	18778570		PP
75	FR	Continuous flow production of metal nanoforms	18778570		PP

76	GB	Continuous flow production of metal nanoforms	18778570		PP
77	IT	Continuous flow production of metal nanoforms	18778570		PP
78	LK	Method and system for activity recording, visualisation and analysis for identified segments of forest	LK/P/21094		PP
79	WO	Fluorescent polymers for the dual mode detection of TNT at nanomolar level.	PCT/IN2020/050408		AB
80	WO	Detection and distinction of nitroaromatic explosives using amines	PCT/IN2020/050412		PP
81	US	Warpage free FDM printing of polymers	16/763196		PP
82	JP	Warpage free FDM printing of polymers	2020-526194	6975855	IF
83	EP	Thermoelectric materials and a process for the preparation thereof	19787476		AB
84	EP	Warpage free FDM printing of polymers	18875732		PP
85	LK	A process for zero water discharge for post tanning operations	21106		PP
86	ZA	A process for zero water discharge for post tanning operations	2020/02769		PP
87	EP	Indole (sulfomyl) n-hydroxy benzamide derivatives as selective HDAC inhibitors	18880633		PP
88	ZA	Indole (sulfomyl) n-hydroxy benzamide derivatives as selective HDAC inhibitors	2020/02786	2020/02786	IF
89	CA	Indole (sulfomyl) n-hydroxy benzamide derivatives as selective HDAC inhibitors	3082972	3082972	IF
90	CN	Indole (sulfomyl) n-hydroxy benzamide derivatives as selective HDAC inhibitors	201880075426.X		PP
91	US	A catalyst composition for different reforming techniques	16/765924		PP
92	BR	A composition useful for pre-treatment in waterless tanning	BR 11 2020 010308-0		PP
93	AU	UV shielding bio-derived furanic polymers	2019213848	2019213848	IF
94	RU	Indole (sulfomyl) n-hydroxy benzamide derivatives as selective HDAC inhibitors	2020117075	2748835	IF

95	WO	A composition for fuelcell membranes and a process for the preparation thereof	PCT/IN2020/050470		PP
96	EP	A composition useful forpre-treatment in waterless tanning	18734308		PP
97	BR	Indole (sulfomyl) n- hydroxy benzamide derivatives as selectivehdac inhibitors	BR 11 2020 010564-3		PP
98	WO	An intensified process fordehydration reactions using a step conical reactor and reactive distillation unit	PCT/IN2020/050476		PP
99	US	Indole (sulfomyl) n- hydroxy benzamide derivatives as selectivehdac inhibitors	16/767389	11072583	IF
100	EP	A catalyst composition for different reformingtechniques	18881043		PP
101	WO	A process for the oxidation of fatty acids	PCT/IN2020/050482		PP
102	SG	Uv shielding bio-derivedfuranic polymers	11202005110X		PP
103	EP	Uv shielding bio-derivedfuranic polymers	19711437		PP
104	CN	Thermoelectric materialsand a process for the preparation thereof	201980006165		AB
105	US	Water splitting activity of organic conducting ligand functionalized semiconductor nanoparticles	16/890,588	10967365	IF
106	TR	A process for the treatment of raw hide/ skin trimming	2020/08592		PP
107	AE	A process for the treatment of raw hide/ skin trimming	P6000820/2020		PP
108	BR	A process for the treatment of raw hide/ skin trimming	BR 11 2020 011252-6		AB
109	DE	Nitration of Benzene	112018006260		PP
110	US	Nitration of Benzene	16/769959	11439985	IF
111	ZA	A process for the treatment of raw hide/ skin trimming	2020/03418	2020/03418	IF
112	VN	A process for zero waterdischarge for post tanning operations	1-2020-03296		AB
113	AP	A process for zero waterdischarge for post tanning operations	AP/P/2020/012473		PP
114	DE	A novel compound for thedetection of hno in biological systems	17829044	3551637	LP

115	WO	A chemo-enzymatic process for the preparation of eribulin intermediates thereof	PCT/IN2020/050533		PP
116	CN	A composition useful for pre-treatment in waterless tanning	201880082583		PP
117	US	Granulocyte-Colony Stimulating Factor Variants and Their Covalently Modified Derivatives	16/957281		PP
118	EP	Artemisinic acid glycoconjugate compounds, process for preparation and use thereof	19735707		PP
119	AU	A method to screen Cancer	2019246661	2019246661	IF
120	JP	Granulocyte-Colony Stimulating Factor Variants and Their Covalently Modified Derivatives	2020-535975		AB
121	US	Method and system for recording digital holograms of larger objects in non-laboratory environment	16/912604		PP
122	WO	Fluorinated-aliphatic hydrocarbon based stable anion-exchange membrane and its method of preparation thereof	PCT/IN2020/050552		PP
123	JP	Thermoelectric materials and a process for the preparation thereof	2020-536874		AB
124	US	A method to screen Cancer	16/958851		PP
125	US	Artemisinic acid glycoconjugate compounds, process for preparation and use thereof	16/958997	11059848	IF
126	AU	A process for the treatment of raw hide/skin trimming	2018381154		AB
127	EP	A process for the preparation of natural crystallized thymol from monarda citriodora (jammu monarda) oil	19704055		AB
128	US	A process for the preparation of natural crystallized thymol from monarda citriodora (jammu monarda) oil	16/959615	10941096	IF
129	CN	Artemisinic acid glycoconjugate compounds, process for preparation and use thereof	201980007347		AB

130	CA	A process for the preparation of natural crystallized thymol from monarda citriodora (jammu monarda) oil	3087654		PP
131	US	UV shielding bio-derived furanic polymers	16/960839		PP
132	CN	A process for zero water discharge for post tanning operations	2018800862940		AB
133	EP	A method to screen cancer	19720149	3724645	RO/E P/NP/ IF
134	GB	A method to screen cancer	19720149	3724645	IF/EP DESIG .
135	CN	A process for mechano-chemical extraction of vegetable oil	202010697430		PP
136	US	A single step process for the simultaneous production of aromatics, naphthenics and isoparaffins using transition metal functionalized zeolite based catalyst	16/937151	11318452	IF
137	WO	Vector for high-expression of proteins in yeast	PCT/IN2020/050640		PP
138	BR	Thermoelectric materials and a process for the preparation thereof	BR 1120200156647		AB
139	EP	Process for the preparation of pyrylium salts	18904834		PP
140	JP	Process for the preparation of pyrylium salts	2020-542442		PP
141	US	Process for the preparation of pyrylium salts	16/967613		PP
142	US	Conjugated polymer compositions, articles thereof, and methods thereof	63/089436		PP
143	US	Advanced multi-functional asbestos free thermal insulating material and the process for preparation thereof	16/996572	11414349	IF
144	EP	Heterocyclic compounds, process for the preparation and use thereof	19754821		PP
145	US	Heterocyclic compounds, process for the preparation and use thereof	16/971232		PP
146	EP	Fluorescent polymer for visual solid state sensing of volatile organic compounds	19757535		PP
147	US	Fluorescent polymer for visual solid state sensing of volatile organic compounds	16/971438	11427661	IF
148	DE	A process for the preparation of functionalized weather-resistant and slow-decaying geotextiles	20192227	3783148	IF/EP DESIG .

149	EP	A process for the preparation of functionalized weather-resistant and slow-decaying geotextiles	20192227	3783148	RO/E P/NP/IF
150	GB	A process for the preparation of functionalized weather-resistant and slow-decaying geotextiles	20192227	3783148	IF/EP DESIG .
151	US	A process for the preparation of functionalized weather-resistant and slow-decaying geotextiles	16/999551, Cont 17/688156 dt 07Mar2022	11313074	IF
152	WO	An apparatus for staining and immunolabeling of biomolecules on gels, membranes, slides or similar surface in cool mist phase	PCT/IN2020/050730		AB
53	WO	Phenylmethanone functionalized carbazole, a process for preparation and use thereof	PCT/IN2020/050729		AB
154	KR	Thermoelectric materials and a process for the preparation thereof	10-2020-7024850		AB
155	WO	A device and method for positioning micro hot probe for heating hot zone between micro hot probe and chirped Bragg grating optical fiber	PCT/IN2020/050755		PP
156	WO	Solvent free continuous process of synthesis of metformin hydrochloride	PCT/IN2020/050775		PP
157	US	Thermoelectric materials and a process for the preparation thereof	16/979019		AB
158	WO	A MODIFIED TiO ₂ AS A PHOTOANODE, A PROCESS FOR THE PREPARATION AND USE THEREOF	PCT/IN2020/050843		PP
159	US	Screening kit for detection of precancerous lesions of cervix and process for the preparation thereof	17/046183	11313860	IF
160	US	Sustained release formulations of dysoxylum binectariferum	17/046007		PP
161	GB	Screening kit for detection of precancerous lesions of cervix and process for the preparation thereof	GB2016080.0		PP
162	US	Novel antimalarial compounds, process for preparation and their use for drug resistant malaria	17/048505	11365202	IF
163	WO	Thermo-responsive molecules for controlled heat and light transmission windows and applications thereof	PCT/IN2020/050884		PP
164	CA	Sustained release formulations of dysoxylum binectariferum	3097503		PP

165	EP	Sustained release formulations of dysoxylum binectariferum	19723888		PP
166	ZA	High performance glossy finish green hybrid composites with variable density and an improved process for making thereof	2020/06736	2020/06736	IF
167	EP	Edible coatings, a process for the preparation and applications thereof	19796605		PP
168	US	Edible coatings, a process for the preparation and applications thereof	17/052187	11427651	IF
169	US	High performance glossy finish green hybrid composites with variable density and an improved process for making thereof	17/052193		PP
170	CA	High performance glossy finish green hybrid composites with variable density and an improved process for making thereof	3099141		PP
171	EP	High performance glossy finish green hybrid composites with variable density and an improved process for making thereof	19795960		PP
172	MY	High performance glossy finish green hybrid composites with variable density and an improved process for making thereof	PI 2020005714		PP
173	BR	High performance glossy finish green hybrid composites with variable density and an improved process for making thereof	BR1120200224243		PP
174	CA	Solid dispersion comprising an anticancer compound with improved solubility and efficacy	3099901		PP
175	EP	Solid dispersion comprising an anticancer compound with improved solubility and efficacy	19833948		PP
176	EP	Indole carboxamide compounds, process for preparation and use thereof	19803405		PP
177	WO	A continuous flow process for the synthesis of metal nanowires using bubble column reactor	PCT/IN2020/050953		PP
178	WO	Continuous process involving diazonium salts	PCT/IN2020/050961		PP
179	US	Indole carboxamide compounds, process for preparation and use thereof	17056081		PP
180	AR	Anti-inflammatory compounds for the treatment of dermal disorders	1189018		PP
181	EP	Bicycle topoisomerase i inhibiting compounds, process for preparation and use thereof	19811205		PP
182	TW	Anti-inflammatory compounds for the treatment of dermal disorders	109141014		PP

183	WO	Anti-inflammatory compounds for the treatment of dermal disorders	PCT/IB2020/061043		PP
184	WO	A continuous flow reactor	PCT/IN2020/050984		PP
185	US	Bicycle topoisomerase i inhibiting compounds, process for preparation and use thereof	17/059289		PP
186	BD	Method and kit for detection of polynucleotide	339/2020		PP
187	WO	Method and kit for detection of polynucleotide	PCT/IN2020/050993		PP
188	GCC	Method and kit for detection of polynucleotide	41018-GC 2020		PP
189	TW	Method and kit for detection of polynucleotide	109142348		PP
190	WO	Solvent assisted cavitation for waste water treatment	PCT/IN2020/051007		PP
191	CN	Novel antimalarial compounds, process for preparation and their use for drug resistant malaria	201980038149		PP
192	US	Solid dispersion comprising an anticancer compound with improved solubility and efficacy	17/253193		PP
193	WO	A process for the synthesis of furandicarboxylic acid	PCT/IN2020/051033		PP
194	EP	Process development for 5-hydroxymethylfurfural (5-hmf) synthesis from carbohydrates	19821739		PP
195	EP	A rapid, low cost process for the preparation of sers substrate and sers substrate prepared thereby	19707889		PP
196	CN	High performance glossy finish green hybrid composites with variable density and an improved process for making thereof	201980042471.X		PP
197	RU	Process development for 5-hydroxymethylfurfural (5-hmf) synthesis from carbohydrates	2020142264		PP
198	US	Process development for 5-hydroxymethylfurfural (5-hmf) synthesis from carbohydrates	17/254959	11440894	IF
199	AU	A rapid, low cost process for the preparation of sers substrate and sers substrate prepared thereby	2019292332		PP

200	CA	A rapid, low cost process for the preparation of sers substrate and sers substrate prepared thereby	3104782		PP
201	WO	Room temperature organic liquid based dual mode selective tnt detection kit and method	PCT/IN2020/051045		PP
202	WO	Ultrathin polymer nanofilm composite membrane and a process for preparation thereof	PCT/IN2020/051058		PP
203	WO	Highly selective ultrathin polymer nanofilm composite membrane and process for preparation thereof	PCT/IN2020/051059		PP
204	US	A rapid, low cost process for the preparation of sers substrate and sers substrate prepared thereby	17/256555		PP

Patents filed internationally to various countries by CSIR -2021					
SNo	Country Code	Title	Application No	PatentNo	Status
1	US	Robust carbon dots as an artificial tracer for groundwater studies	17/146346		PP
2	JP	Screening kit for detection of precancerous lesions of cervix and process for the preparation thereof	2021-524497		PP
3	US	Synbiotic composition for improving immune response and antioxidant capacity during aging	17/260052		PP
4	WO	Flocculant based disinfection process for pathogenic medical waste disposal	PCT/IN2021/050032		PP
5	WO	A highly active and durable non-noble metal-sulphide based Her catalyst and the preparation thereof	PCT/IN2021/050035		PP
6	US	System and method to predict pathological grade and to identify drug targets against glioma tumour	17/154379		PP
7	KR	Fluorinated-aliphatic hydrocarbon based stable anion-exchange membrane and its method of preparation thereof	10-2022-7002843		PP
8	GB	Synbiotic composition for improving immune response and antioxidant capacity during aging	2101006	GB 2590272	IF
9	CN	Process development for 5-hydroxymethylfurfural (5-hmf) synthesis from carbohydrates	201980052726		PP
10	US	Inhibitors to target HIV-1 NEF-CD80/CD86 interactions for therapeutic intervention	US17/268,440		PP
11	WO	Process for the preparation of gamma-aminobutyric acids and analogs thereof	PCT/IN2021/050141		PP
12	JP	Inhibitors to target HIV-1 NEF-CD80/CD86 interactions for therapeutic intervention	JP 2021-532550		PP
13	WO	A transparent gel electrolyte system and fast switching electrochromic devices thereof	PCT/IN2021/050143		PP

14	WO	A system and method for non-intrusive load monitoring of identical electrical utilities	PCT/IN2021/050145		PP
15	WO	Radiation shielding red mud based hybrid composite panels and process for preparing the same	PCT/IN2021/050150		PP
16	WO	Metal catalyst and hydrogen gas free approaches for selective reduction of aldehyde to methyl group of different substituted furans	PCT/IN2021/050157		PP
17	WO	Depolymerization of polymers with ester, ether and carbonate linkages using acidic ionic liquid (ail) catalyst	PCT/IN2021/050177		PP
18	US	A curcumin loaded stabilized polymeric nanoparticles with increased solubility and photo-stability and a green process for the synthesis thereof	17/272062		PP
19	EP	Recombinant microbial system(s) for directed evolution of glycosyls and method(s) of preparation thereof	19855191		PP
20	US	Recombinant microbial system(s) for directed evolution of glycosyls and method(s) of preparation thereof	17/272221		PP
21	WO	A novel process and kit for detection of novel coronavirus and other viruses	PCT/IN2021/050198		PP
22	WO	Title: vehicle mounted system and method for distributed irritant spray	PCT/IN2021/050212		PP
23	WO	Bimetallic fluorescent nanocomposites for cancer theranostics	PCT/IN2021/050215		PP
24	WO	An improved process for photocatalytic hydrocarboxylation of methanol with CO ₂ to produce acetic acid	PCT/IN2021/050231		PP
25	EP	Inhibitors to target HIV-1 NEF-CD80/CD86 interactions for therapeutic intervention	EP 19849238.1		PP
26	WO	Process for the synthesis of cannabidiol and intermediates thereof	PCT/IN2021/050242		PP
27	US	Fabrication of blue-fluorescent and non-toxic nanodiamonds (nds) from atmospheric particulate matters	17/204467		PP

28	WO	Variable height for thrust correction through pressure sensing in electrostatic coating system	PCT/IN2021/050343		PP
29	SG	Multilayer non-porous membranes based on polybenzimidazoles	11202103540S		PP
30	US	Method for increasing viridiflorol content in tissues	14/226283		PP
31	US	Multilayer non-porous membranes based on polybenzimidazoles	17/285,942		PP
32	CN	Multilayer non-porous membranes based on polybenzimidazoles	201980069085.X		PP
33	JP	Multilayer non-porous membranes based on polybenzimidazoles	2021-521393	7146080	IF
34	EP	Multilayer non-porous membranes based on polybenzimidazoles	19874734		PP
35	EP	Decalin and hydrindane derivatives, a process for their preparation and pharmaceutical composition containing them	19876944		PP
36	US	Decalin and hydrindane derivatives, a process for their preparation and pharmaceutical composition containing them	17287404		PP
37	WO	An easy-to-use diagnostic system for rapid dengue virus detection using fluorescence-based molecular probes	PCT/IN2021/050432		PP
38	KR	Multilayer non-porous membranes based on polybenzimidazoles	10-2021-7014747		PP
39	WO	Organic selenium enriched edible marine microalgal biomass	PCT/IN2021/050483		PP
40	WO	A process for the preparation of vanillin and other substituted phenylaldehydes	PCT/IN2021/050495		PP
41	WO	An instantaneous water electrolyser and a method for ionizing water	PCT/IN2021/050512		PP
42	US	A photocatalyst device for hydrogen generation and partial oxidation of alcohols in direct sunlight	17/297592		PP
43	WO	Homogeneous catalyst and its use in preparing linear polyethylene	PCT/IN2021/050520		PP

44	WO	Azirine containing compounds as anti- angiogenesis agents and preparation thereof	PCT/IN2021/050544		PP
45	US	A process for isolation of nigericin from streptomyces sp. Dasncl-29	17/311783		PP
46	EP	A photocatalyst device for hydrogen generation and partial oxidation of alcohols in direct sunlight	19891495		PP
47	WO	Process for synthesis of poly- gamma-glutamic Acid	PCT/IN2021/050558		PP
48	CN	A process for isolation of nigericin from streptomyces sp. Dasncl-29	201980081594		PP
49	US	A glossy finish sandwich composite and process for preparing the same	17/312780		PP
50	US	Highly efficient process for the preparation of sitagliptin via rhodium catalyzed asymmetric hydrogenation.	17/312734		PP
51	WO	A process for preparation of 3,6-dichlorocyano pyrazine, 3,6-dioxopiperazine derivatives and production of favipiravir thereof	PCT/IN2021/050571		PP
52	BD	A diagnostic screening kit for simultaneous detection of clinically relevant biomarkers from breast cancer tissue samples using surface enhanced raman scattering platform and process for the preparation thereof	183/2021		PP
53	WO	A diagnostic screening kit for simultaneous detection of clinically relevant biomarkers from breast cancer tissue samples using surface enhanced raman scattering platform and process for the preparation thereof	PCT/IN2021/050577		PP
54	EP	A mixed metal oxide catalysed and cavitation influenced process for hydration of nitrile	19898888		PP
55	US	A mixed metal oxide catalysed and cavitation influenced process for hydration of nitrile	17/416742		PP
56	WO	Quinazolinones derivatives for treatment of non-alcoholic fatty liver disease, preparation and use thereof	PCT/IN2021/050621		PP

57	US	An improved process and catalyst for low temperature non-oxidative dehydrogenation of propane to propylene	17/365504		PP
58	SG	Modified microfluidic impedance based lab on chip for individual cell counting and a process for fabrication thereof	11202107430V		PP
59	EP	A process for the preparation of platformchemicals from sugar using acid catalyst	20740860		PP
60	EP	A continuous flow micro-total process system for preparation of celecoxib and analogs thereof	20747898		PP
61	US	A process for the preparation of platformchemicals from sugar using acid catalyst	17/423297		PP
62	WO	Valorization of animal derived biomass by using solid acid catalyst	PCT/IN2021/050700		PP
63	US	Fibrinolytic composition and method of its preparation	17/425619		PP
64	CA	Kit for detecting melanoma	3127759		PP
65	US	Kit for detecting melanoma	17/425611		PP
66	EP	Fibrinolytic composition and method of its preparation	20744606		PP
67	AU	Kit for detecting melanoma	2020211817		PP
68	EP	Kit for detecting melanoma	20744303		PP
69	US	A continuous flow micro-total process system for preparation of celecoxib and analogs thereof	17/426906		PP
70	CA	A metal ion battery having ionomer membrane separator and free- standing electrode	3128861	3128861	IF
71	JP	A metal ion battery having ionomer membrane separator and free- standing electrode	2021-545760		PP
72	NZ	Kit for detecting melanoma	778757		PP
73	US	A metal ion battery having ionomer membrane separator and free- standing electrode	17/428757		PP

74	US	Novel marine biosurfactant and uses thereof	17/429336		PP
75	EP	Novel marine biosurfactant and uses thereof	20752400		PP
76	EP	A metal ion battery having ionomer membrane separator and free- standing electrode	20752133		PP
77	WO	Catalytic oxidation of 5-hydroxymethyl furfural to 2, 5-furan dicarboxylic acid	PCT/IN2021/050766		PP
78	WO	Quaternary ammonium fluoride salts for fluorination reactions	PCT/IN2021/050774		PP
79	WO	Electrochromic bi-layered devices for dynamic light throughput control and a process for the preparation thereof	PCT/IN2021/050772		PP
80	WO	Novel compounds with antibacterial and anti viral activities	PCT/IN2021/050783		PP
81	WO	Quinolone compounds and process for preparation thereof	PCT/IN2021/050790		PP
82	WO	Automated diazomethane generator, reactor and solid phase quencher	PCT/IN2021/050811		PP
83	WO	Continuous process for photocatalytic co- conversion of co ₂ and h ₂ o to value added products in sunlight	PVT/IN2021/050814		PP
84	WO	Process for the direct conversion of cellulose to glycols using non- noble metal loaded zeolite catalysts	PCT/IN2021/050808		PP
85	CA	A novel facile aqueous based extraction of progesterone metabolites from faeces sample for non-invasive, simple, affordable and farmer friendly paper based kit for pregnancy detection in cattle and buffaloes	3132566		PP
86	WO	HDAC inhibitors for Idiopathic pulmonary fibrosis	PCT/IN2021/050851		PP
87	WO	Compounds for detection of homocysteine and its method of preparation thereof	PCT/IN2021/050849		PP

88	US	A novel facile aqueous based extraction of progesterone metabolites from faeces sample for non-invasive, simple, affordable and farmer friendly paper based kit for pregnancy detection in cattle and buffaloes	17/436602		PP
89	AU	A novel facile aqueous based extraction of progesterone metabolites from faeces sample for non-invasive, simple, affordable and farmer friendly paper based kit for pregnancy detection in cattle and buffaloes	2020233121		PP
90	RU	A novel facile aqueous based extraction of progesterone metabolites from faeces sample for non-invasive, simple, affordable and farmer friendly paper based kit for pregnancy detection in cattle and buffaloes	2021126211		PP
91	WO	A thermoresponsive self-assembled organic material as photonic ink and a process of making thereof	PCT/IN2021/050860		PP
92	WO	A bioprocess for the simultaneous production of polyhydroxybutyrate and violacein pigment from himalayan bacterium <i>iodobacter</i> sp. Pch 194	PCT/IN2021/050868		PP
93	WO	A Superhydrophobic Composite and Multifunctional Applications Thereof	PCT/IN2021/050878		PP
94	WO	High Dense Red Mud Shields for X- and γ -ray Attenuation	PCT/IN2021/050888		PP
95	EP	Two dimensional organic polymer and derivatives thereof for supercapacitor applications	20772608		PP
96	EP	A novel facile aqueous based extraction of progesterone metabolites from faeces sample for non-invasive, simple, affordable and farmer friendly paper based kit for pregnancy detection in cattle and buffaloes	20766052		PP
97	WO	Pollutant removing air groove (prag)	PCT/IN2021/050897		PP
98	WO	Chebulinic acid and its enriched fraction from the fruits of <i>terminalia chebula</i> for treatment of benign prostatic hyperplasia (bph) and its preparation thereof	PCT/IN2021/050898		PP
99	AU	Process for the synthesis of cannabidiol and intermediates thereof	2021235467		PP
100	CA	Process for the synthesis of cannabidiol and intermediates thereof	3133788		PP

101	ZA	Process for the preparation of derivatives of 1,1-dialkylethane-1,2-diols as useful intermediates	2021/06931		PP
102	US	Recombinant extracellular chitinase from <i>brevibacillus laterosporus</i> for biological control and other industrial uses	17/478390		PP
103	US	Two dimensional organic polymer and derivatives thereof for supercapacitor applications	17/440414		PP
104	WO	Two pin gimbal joint	PCT/IN2021/050921		PP
105	US	Cellulosic complex and applications thereof	17/441467		PP
106	WO	Temporary support structural system for power lines	PCT/IN2021/050927		PP
107	EP	Indole-ynone mediated benzoannulation process for the preparation of carbazoles-carbazomycina, calothrixin b and staurosporinone	20783103		PP
108	US	A synergistic formulation against acne and a process for the preparation thereof	17/598105		PP
109	US	Indole-ynone mediated benzoannulation process for the preparation of carbazoles-carbazomycina, calothrixin b and staurosporinone	17/442828		PP
110	US	A synergistic formulation against acne and a process for the preparation thereof	17/598277		PP
11	AU	A synergistic formulation against acne and a process for the preparation thereof	2020245333		PP
112	EP	A synergistic formulation against acne and a process for the preparation thereof	20777202		PP
113	JP	A synergistic formulation against acne and a process for the preparation thereof	2021-557843		PP
114	EP	Cloning and expression of in-vivo refolded antibody fragment	20785046		PP
115	CN	Process for the preparation of derivatives of 1,1-dialkylethane-1,2-diols as useful intermediates	202080027022		PP

116	US	Cloning and expression of in-vivo refolded antibody fragment	17/600867		PP
117	EP	Crystalline low dimensional polymers and a process for the preparation thereof	20782393		PP
118	US	Crystalline low dimensional polymers and a process for the preparation thereof	17/600955		PP
119	EP	A synergistic formulation against acne and a process for the preparation thereof	20784263		PP
120	US	Bio-compatible polyurethane microcapsules and process for the preparation thereof	17/601583		PP
121	US	Process for the synthesis of cannabidiol and intermediates thereof	17/594448		PP
122	WO	Bioactive benzocycloheptane analogues from Himachalenes useful for the treatment of PI3K and MK2 related disorders	PCT/IN2021/050993		PP
123	US	Advanced lead free radiation protection materials utilizing modified brine sludge composition and the process thereof	17/451412		PP
124	IL	Process for the synthesis of cannabidiol and intermediates thereof	287632		PP
125	US	A process for the synthesis of nanoparticles of transition metal chalcogenides	17/594865		PP
126	KR	Cloning and expression of in-vivo refolded antibody fragment	10-2021-7035829		PP
127	EP	Novel antimalarial compounds, process for preparation and their use for drug resistant malaria	19788697		PP
128	EP	A composition for fuel cell membranes and a process for the preparation thereof	20814058		PP
129	US	A composition for fuel cell membranes and a process for the preparation thereof	17/613626		PP
130	CA	A composition for fuel cell membranes and a process for the preparation thereof	3141780		PP

131	JP	A composition for fuelcell membranes and a process for the preparation thereof	2021-570137		PP
132	CN	A composition for fuelcell membranes and a process for the preparation thereof	202080039444		PP
133	US	A process for the oxidation of fatty acids	17/614518		PP
134	JP	An intensified process fordehydration reactions using a step conical reactor and reactive distillation unit	2021-571038		PP
135	US	An intensified process fordehydration reactions using a step conical reactor and reactive distillation unit	17/614965		PP
136	CN	A process for the oxidation of fatty acids	202080040534		PP
137	US	A transparent gel electrolyte system and fast switching electrochromic devices thereof	17/595970		PP
138	EP	An intensified process fordehydration reactions using a step conical reactor and reactive distillation unit	20813453		PP
139	WO	A process for detoxifying lignocellulosic hydrolysate and its use insynthesizing xylitol	PCT/IN2021/051139		PP
140	EP	A process for the oxidation of fatty acids	20812742		PP
141	WO	A system and method foronsite wastewater treatment and resource recovery	PCT/IN2021/051166		PP
142	WO	New quaternary ammonium salts for trifluoromethylation andprocess for the preparation thereof	PCT/IN2021/051167		PP
143	WO	Smac mimetics for treatment of cancer andprocess for preparation thereof	PCT/IN2021/051182		PP
144	US	A chemo-enzymatic process for the preparation of eribulinintermediates thereof	17/621052		PP
145	JP	A chemo-enzymatic process for the preparation of eribulinintermediates thereof	2021-576357		PP
146	US	Fluorinated-aliphatic hydrocarbon based stableanion-exchange membrane and its methodof preparation there of	17/622185		PP

147	BD	A method for safe disposal of arsenic rich sludge obtained from treatment of contaminated groundwater and its utilization in developing heat protective glass	438/2021		PP
148	WO	A method for safe disposal of arsenic rich sludge obtained from treatment of contaminated groundwater and its utilization in developing heat protective glass	PCT/IN2021/051196		PP
149	NG	A domestic cooking burner for piped natural gas	F/P/2022/5	6744	IF
150	KR	An intensified process for dehydration reactions using a step conical reactor and reactive distillation unit	10-2021-7042327		PP
151	ID	A domestic cooking burner for piped natural gas	P00202112026		PP
152	JP	Fluorinated-aliphatic hydrocarbon based stable anion-exchange membrane and its method of preparation thereof	2021-577293		PP
153	IL	A transparent gel electrolyte system and fast switching electrochromic devices thereof	289394		PP
154	EG	A domestic cooking burner for piped natural gas	2097/2021		PP
155	CN	An intensified process for dehydration reactions using a step conical reactor and reactive distillation unit	202080048020		PP
156	WO	New bisphenols bearing pendant clickable norbornene group and polymers therefrom	PCT/IN2021/051214		PP

Patents filed internationally to various countries by CSIR -2022 till Nov					
SNo	Country Code	Title	Application No	Patent No	Status
1	EP	Fluorinated-aliphatic hydrocarbon based stable anion-exchange membrane and its method of preparation thereof	20831755		PP
2	WO	A bilayer photothermal foam for clean water production and a process for the preparation thereof	PCT/IN2022/050022		PP
3	WO	A zeolite catalyst, process for preparation and application thereof	PCT/IN2022/050031		PP
4	WO	A process for extraction of biomolecules from biomass	PCT/IN2022/050043		PP
5	WO	Honeycomb boron carbon nitride plated with metal and application thereof	PCT/IN2022/050041		PP
6	CN	Fluorinated-aliphatic hydrocarbon based stable anion-exchange membrane and its method of preparation thereof	202080053050.X		PP
7	US	Vector for high- expression of proteins in yeast	17/629395		PP
8	WO	A catalyst for dimethyl carbonate, process for preparation and use thereof	PCT/IN2022/050056		PP
9	WO	Triazine-based self-assembling system	PCT/IN2022/050057		PP
10	JP	A transparent gel electrolyte system and fast switching electrochromic devices thereof	2022-506441		PP
11	EP	Vector for high- expression of proteins in yeast	20845020		PP
12	WO	Earthen membrane based two chambered constructed wetlands cum microbial fuel cell for treatment and detoxification of azo dye containing wastewater	PCT/IN2022/050095		PP
13	EP	A transparent gel electrolyte system and fast switching electrochromic devices thereof	21753478		PP
14	WO	Process for the purification of monoclonal antibodies	PCT/IN2022/050121		PP
15	US	Double metal cyanide catalyst for the production of polyether polyols and a process thereof	17/669892		PP

16	CN	Vector for high- expression of proteins in yeast	202080060401.X		PP
17	US	Solvent free continuous process of synthesis of metformin hydrochloride	17/753239		PP
18	EP	An improved process for the synthesis of ivacaftor	22159206		PP
19	WO	Machine for performing double volume exchange transfusion	PCT/IN2022/050195		PP
20	IL	Thermo-responsive molecules for controlled heat and light transmission windows and applications thereof	291477		PP
21	US	Novel squaraine dyes and applications thereof	17/697511 CIP of 16/320177		PP
22	JP	A kit for detection of mutations associated with genetic disorders	2022-518652		PP
23	WO	A process for the fabrication of ZnO-graphene based flexible strain and pressure sensor	PCT/IN2022/050291		PP
24	US	A process for the photocatalytic allylic oxidation of olefins using carbon dioxide	17/703483		PP
25	CN	A kit for detection of mutations associated with genetic disorders	202080066965		PP
26	US	A kit for detection of mutations associated with genetic disorders	17/763340		PP
27	JP	Thermo-responsive molecules for controlled heat and light transmission windows and applications thereof	2022-519301		PP
28	WO	A novel metal oxide-polymer nano composite for very low temperature (below room temperature to sub-zero degree Celsius)	PCT/IN2022/050309		PP
29	CN	Thermo-responsive molecules for controlled heat and light transmission windows and applications thereof	202080067883		PP
30	WO	Hydrogenation of imines by palladium based catalyst	PCT/IN2022/050316		PP
31	WO	Isoprenyl natural scaffold against MDR Staphylococcus aureus and synergistic compositions thereof	PCT/IN2022/050315		PP
32	WO	A nanoformulation for glioma treatment and process for its preparation thereof	PCT/IN2022/050317		PP

33	US	Development of Alcoholic sucrose-based Superplasticizer for Geo-polymeric concrete and its process thereof	17/657249		PP
34	WO	Palladium nano catalyzed fluorination of aromatic halides with support of bacterial cellulose nano- crystals (bnc)	PCT/IN2022/050326		PP
35	GB	Organic selenium enriched edible marine microalgal biomass	GB2205799.6		PP
36	ZA	A kit for detection of mutations associated with genetic disorders	2022/04548		PP
37	JP	Organic selenium enriched edible marine microalgal biomass	2022-524171		PP
38	EP	A kit for detection of mutations associated with genetic disorders	20868556		PP
39	WO	A short and cost effective synthetic route towards anti viral drug molnupiravir (eidd-2801) from d-ribose	PCT/IN2022/050395		PP
40	US	Organic selenium enriched edible marine microalgal biomass	17/773356		PP
41	WO	A process for producing cathode active material composition for a lithium-ion battery	PCT/IN2022/050410		PP
42	WO	A thermogravimetric reactor (tgr) to study weight changes of solids and a process thereof	PCT/IN2022/050446		PP
43	WO	Non infringing process for the synthesis of n4-hydroxycytidine and its derivatives	PCT/IN2022/050442		PP
44	EP	An improved process for photocatalytic hydrocarboxylation of methanol with CO2 to produce acetic acid	21770912		PP
45	JP	A continuous flow process for the synthesis of metal nanowires using bubble column reactor	2022-528110		PP
46	US	A continuous flow process for the synthesis of metal nanowires using bubble column reactor	17/756037		PP
47	US	A Method for Reactive Desulfurization of Crude Oil and Sulfur Rich Petroleum Refinery Fractions	17/663987		PP
48	DE	Organic selenium enriched edible marine microalgal biomass			PP

49	EP	A continuous flow process for the synthesis of metal nanowires using bubble column reactor	20887784		PP
50	EP	A continuous flow reactor	20891857		PP
51	WO	Warp knit polyethylene terephthalate layer face mask sourced from waste membrane	PCT/IN2022/050483		PP
52	JP	An improved process for photocatalytic hydrocarboxylation of methanol with CO ₂ to produce acetic acid	2022-530786		PP
53	CN	An improved process for photocatalytic hydrocarboxylation of methanol with CO ₂ to produce acetic acid	202180006792		PP
54	WO	Ultrafast Synthesis of MAX Phases by Reactive Flash Sintering and A Method Thereof	PCT/IN2022/050494		PP
55	US	A continuous flow reactor	17/756638		PP
56	AU	Method and kit for detection of polynucleotide	2020394910		PP
57	OA	Method and kit for detection of polynucleotide	1202200212		PP
58	WO	Small molecule modulator targeting a rare histone modification, regulation of adipogenesis and pharmaceutical formulation thereof	PCT/IN2022/050515		PP
59	WO	Substituted tricyclic heterocyclic compounds as metallo-beta-lactamase inhibitors	PCT/IN2022/050513		PP
60	CA	Method and kit for detection of polynucleotide	3163565		PP
61	US	Method and kit for detection of polynucleotide	17/781726		PP
62	EP	Solvent assisted cavitation for wastewater treatment	20896124		PP
63	AP	Method and kit for detection of polynucleotide	AP/P/2022/014084		PP
64	US	Solvent assisted cavitation for wastewater treatment	17/782410		PP
65	WO	Novel functionalized maleimides and isomaleimides and the process for preparation thereof	PCT/IN2022/050535		PP
66	EP	Method and kit for detection of polynucleotide	20895727		PP

67	KR	A continuous flow process for the synthesis of metal nanowires using bubble column reactor	10-2022-7019818		PP
68	US	Thermo-responsive molecules for controlled heat and light transmission windows and applications thereof	17/757531		PP
69	EP	Thermo-responsive molecules for controlled heat and light transmission windows and applications thereof	20901691		PP
70	JP	Ultrathin polymer nanofilm composite membrane and a process for preparation thereof	2022-539093		PP
71	US	Ultrathin polymer nanofilm composite membrane and a process for preparation thereof	17/788768		PP
72	EP	Ultrathin polymer nanofilm composite membrane and a process for preparation thereof	20906042		PP
73	EP	Highly selective ultrathin polymer nanofilm composite membrane and process for preparation thereof	20906042		PP
74	JP	Highly selective ultrathin polymer nanofilm composite membrane and process for preparation thereof	2022-539360		PP
75	US	Highly selective ultrathin polymer nanofilm composite membrane and process for preparation thereof	17/789357		PP
76	US	KINETICALLY ENHANCED ENGINEERED fncas9 AND ITS USES THEREOF	17/853353		PP
77	WO	KINETICALLY ENHANCED ENGINEERED fncas9 AND ITS USES THEREOF	PCT/IN2022/050595		PP
78	EP	A highly active and durable non-noble metal-sulphide based Her catalyst and the preparation thereof	21741895		PP
79	US	A highly active and durable non-noble metal-sulphide based Her catalyst and the preparation thereof	17/758955		PP
80	WO	Single process for sequential extraction of products from green tea leaves	PCT/IN2022/050641		PP
81	KR	Highly selective ultrathin polymer nanofilm composite membrane and process for preparation thereof	10-2022-7025763		PP

82	KR	Ultrathin polymer nanofilm composite membrane and a process for preparation thereof	2022-7026006		PP
83	EP	Process for the preparation of gamma-aminobutyric acids and analogs thereof	21753915		PP
84	US	A Process for crude petroleum oil processing in the crude distillation unit	17/816953		PP
85	JP	Process for the preparation of gamma-aminobutyric acids and analogs thereof	2022-548730		PP
86	US	A light assisted, catalyst free oxidation of aldehydes to carboxylic acids using carbon dioxide	17/886023		PP
87	WO	An improved disinfection- solidification process for pathogenic medical waste disposal	PCT/IN2022/050745		PP
88	EP	Metal catalyst and hydrogen gas free approaches for selective reduction of aldehyde to methyl group of different substituted furans	21756603		PP
89	JP	Metal catalyst and hydrogen gas free approaches for selective reduction of aldehyde to methyl group of different substituted furans			PP
90	US	Metal catalyst and hydrogen gas free approaches for selective reduction of aldehyde to methyl group of different substituted furans	17800701		PP
91	BR	An easy-to-use diagnostic system for rapid dengue virus detection using fluorescence-based molecular probes	BR 11 2022 016918 3		PP
92	ZA	An easy-to-use diagnostic system for rapid dengue virus detection using fluorescence-based molecular probes	2022/09493		PP
93	WO	An assembly with negatively charged ionomer membrane for a aqueous rechargeable zinc metal battery	PCT/IN2022/050760		PP
94	US	Bimetallic fluorescent nanocomposites for cancer theranostics	17/909930		PP
95	US	An improved process for photocatalytic hydrocarboxylation of methanol with CO ₂ to produce acetic acid	17/905526		PP
96	EP	Variable height for thrust correction through pressure sensing in electrostatic coating system	21828002		PP

97	WO	Novel solid state emitters based on pyridinium scaffolds	PCT/IN2022/050792		PP
98	US	Variable height for thrust correction through pressure sensing in electrostatic coating system	17/905715		PP
99	WO	A raman signal enhancing substrate (sensor) for trace level detection and a method of fabrication thereof	PCT/IN2022/050806		PP
100	WO	A process for the preparation of tetrahydroanthracenes from streptomyces curacoi (mtcc-25420) and anticancer activity thereof	PCT/IN2022/050812		PP
101	RU	Metal catalyst and hydrogen gas free approaches for selective reduction of aldehyde to methyl group of different substituted furans	2022124433		PP
102	KE	An easy-to-use diagnostic system for rapid dengue virus detection using fluorescence-based molecular probes	KE/P/2022/4333		PP
103	WO	An improved process for the preparation of nitazoxanide and intermediates thereof	PCT/IN2022/050843		PP
104	WO	Disinfection and in situ flocculation-solidification process for pathogenic medical waste disposal	PCT/IN2022/050847		PP
105	WO	Temperature programmable small molecules and prototypes for thermoresponsive smart windows and applications thereof	PCT/IN2022/050852		PP
106	WO	A process for extraction of essential oil from valeriana jatamansi jones	PCT/IN2022/050863		PP
107	WO	Cannabinoids C- and O- glycosides possessing anti-proliferative and anti- metastatic properties and process for preparation thereof	PCT/IN2022/050860		PP
108	US	Ultrasonic pulse velocity tester device with threshold error correction	17/936018		PP
109	WO	A process for the preparation of pharmaceutically active compounds via selective nitro reduction reactions	PCT/IN2022/050865		PP
110	WO	Synergistic composition of malabaricone b and conventional antibiotics against multidrug resistant staphylococcus aureus infections	PCT/IN2022/050875		PP
111	WO	A catalyst for the conversion of CO ₂ to CO and process for the preparation	PCT/IN2022/050886		PP

112	US	Triple g-c-t base coded nucleobase amino acid, its synthesis and peptide formation	17/961220		PP
113	US	Multifunctional hybrid particle fibres board from agro-residues and process for preparation thereof	17/964246		PP
114	EP	Quinazolinones derivatives for treatment of non-alcoholic fatty liver disease, preparation and use thereof	21833671		PP
115	WO	A process for the preparation of 2,7-dihydroxyfluorenone useful for the synthesis of tilorone and its salts	PCT/IN2022/050931		PP
116	AU	Quinazolinones derivatives for treatment of non-alcoholic fatty liver disease, preparation and use thereof	2021301444		PP
117	WO	COBALT FREE limn ₂ -x-y-zn _{1-x-y-z} SPINEL AS A CATHODE MATERIAL FOR Li-ION BATTERIES	PCT/IN2022/050948		PP
118	WO	In vitro protease-based sars-cov-2 spike protein cleavage assay system	PCT/IN2022/050949		PP
119	WO	Pincer-based cobalt catalysts for hydrogenation reaction and its process of preparation thereof	PCT/IN2022/050971		PP
120	WO	Pyrazole amide based compounds and uses against breast cancer thereof	PCT/IN2022/051006		PP
121	WO	Substituted diazenylanilines as fluorescence quencher and use thereof	PCT/IN2022/051025		PP
122	EP	Homogeneous catalyst and its use in preparing linear polyethylene	21813480		PP
123	WO	A process for the preparation of indolmycin and derivatives thereof	PCT/IN2022/051026		PP
124	JP	Homogeneous catalyst and its use in preparing linear polyethylene			PP

Patents filed by PFC, TIFAC

S.No	Country Code	Title	Details/Application Number	Status
1.		A natural additive for the stabilization of concentrated coal water slurry	PCT/IN2016/000098	Publication Number WO/2016/178241 National Phase Application Not Filed

2.	US, CN, EU	Device and Method for Detection of Haemoglobin and its complexes	PCT/IB2015/056832	<p>PCT Publication Number: WO/2016/038526</p> <p>US Patent No. 11428664 Granted on 30.08.2022</p> <p>Chinese Patent No. 107405115 Granted on 25.02.2022</p> <p>EU: 15840639 Published awaiting grant</p>
3.	US, EU	Electrochemical Biosensor Method of Sensing Albumin and its Complexes	PCT/IB2016/050311	<p>PCT Publication Number WO/2016/038505</p> <p>US Patent No. 11435344 Granted on 06.09.2022</p> <p>3191844 Granted on 20-04-2022</p>
4.	US,EU	Device and method for detecting creatinine and albumin to creatinine ratio	PCT/IB2016/050311	<p>PCT Publication Number WO/2016/181229</p> <p>National Phase Applications</p> <p>US: US Patent Application no.. 15573686 filed on 22.01.2016 Granted Awaited</p> <p>European Patent No 3294125 Granted on 08-09-2021</p>
5.	EU	Optical nanosensor for early stage detection of Bactoceraolea infestation	PCT/IN2017/050025	<p>PCT Publication Number WO/2018/134832</p> <p>National Phase Application</p> <p>European Patent Publication Number 3571499 Awaiting grant</p>
6.	EU	Nanogels, methods and devices thereof for managing holotrichichia consanguinea	PCT/IN2017/050290	<p>PCT Publication Number WO/2018/011826</p> <p>National Phase Application</p> <p>European Patent Publication Number 3484941 Awaiting grant</p>
7.	EU	Wound healing, Immunogenic	PCT/IB2017/052562	<p>PCT Publication Number WO/2017/191570</p>

		oxazolidinone nano scaffolds		National Phase Application European Patent Application Number 17792584 Grant awaited
8.		Synthesis & use of 5-[4-2-biphenyl-4-yl-2-oxo-ethoxy)-benzylidene]-thiazolidine,2,4-iodine derivatives	PCT/IN2018/050450	PCT Publication No. WO/2019/016826 National Phase Application Not filed
9.	EU	Metal oxide-based soil conditioner	PCT/IN2017/050114	PCT Publication Number: WO/2016/038526 National Phase Application 3442339 dated 2019-12-11 awaiting grant

Patent filled under R&D projects supported by SERB

S.No.	Country Code	Patent Title	Patent Number	Patent Status
1.	US	Indolylkojyl methane analogues, process of preparation thereof and use as inhibitor of cancer cell invasion and metastasis.	PCT/IN2018/050060	Applied
2.	US	Phosphorescence assisted tunable emission from alkylated bromonaphthalimides	16/712265	Applied
3.	US	Process for the preparation of (4,8-bis(5-(trimethylstannyl) as a precursor for the synthesis of thiophene based conjugated 2d polymers and its application in organic photovoltaics	16/317087	Applied
4.	US	Process for the preparation of self-assembled metalloporphyrin 2D-sheets for efficient photo- and electro- catalytic splitting of water	16/465918	Applied
5.	US	Synthesized a new pyrene tetraboronic acid for a use of glucose sensing	16/610020	Applied
6.	US	Optimized allocation of tasks in heterogeneous computing systems	16108647	Granted
7.	US	Wideband electromagnetically coupled microstrip patch antenna for 60 GHz millimeter wave phased array	PCT/IB2020/061249	Applied

8.	Australia	A PROCESS FOR SYNTHESIZING NI/MO NANO-PARTICLE ENCAPSULATED ONION-SHAPED CARBON NANOCAPSULES USING MODIFIED ARC-DISCHARGE METHOD	2021101152	Granted
9.	Australia	A METHOD FOR SYNTHESIZING A HETEROMETALLIC COORDINATION COMPOUND CAPTURING SODIUM ION IN THE CAVITY WITH CALCIUM ION SENSING ABILITY	2021101310	Granted
10.	Australia	FUNCTIONALIZATION OF CARBON NANOTUBES WITH 4',7-DIHYDROXYFLAVONE	2021106369	Granted
11.	Australia	IMPROVED BOLTING METHOD FOR BEAM RETROFITTING AT SOFFIT	2021107228	Granted
12.	Australia	A METHOD FOR CONFIRMING CONSTITUTIONAL MISMATCH REPAIR DEFICIENCY SYNDROME (CMMRD)	2021102091	Granted
13.	Australian	A METHOD FOR DEVELOPING A WEAR RESISTANT LAYER EMBEDDED WITH SiC ON Ti6Al4V	2021105268	Granted
14.	US	TEMPORAL CONTRASTIVE LEARNING FOR SEMI-SUPERVISED VIDEO ACTION RECOGNITION	17/515380	Applied
15.	US	A Point Of Care (POC) Device For Facilitating Nucleic Acid Based Testing And Method Thereof	17201968	Applied
16.	US	A Method for POC-Based Detection of Pathogenic Infection via Nucleic Acid Based Testing	17202903	Applied
17.	Australia	A Method For Developing Thin Film Solar Cell with Alternative Absorber Layer	2021106184	Granted
18.	Australia	A Micro Multilevel Inverter	2021106653	Granted

19.	Australia	SELF-ASSEMBLED NANO-FIBERS AS HEMOSTATIC AGENT	2020259474	Applied
20.	Australia	A PROCESS FOR MANUFACTURING METAL OXIDE-BASED FORMALDEHYDE GAS SENSOR	2021101790	Granted
21.	Germany	A MELODY CLASSIFICATION SYSTEM USING SWARAGRAM REPRESENTATION (EIN SYSTEM ZUR KLASSIFIZIERUNG VON MELODIEN MITTELS SWARAGRAMMDARSTELLUNG)	202022100306.8	Applied
22.	IPC-Hauptklasse ICM (ICMV),G06N 3/02 (2006.01), European Patent Office CA G2; Germany	A SYSTEM FOR EFFECTIVELY CLASSIFYING EXOPLANETS ACCORDING TO THEIR HABITABILITY https://register.dpma.de/DPMAre gister/pat/register?AKZ=2020221 003505	20 2022 100 350.5	Granted
23.	Germany	A system based on the speed-invariant technique to identify and remove self co-articulations in alphanumeric characters	20220101980	Granted
24.	Germany	Internet of Things enabled Smart Solar Photovoltaic Module and its Control Method	20 2022 103 442.7	Granted
25.	Australia	Smart Electrical Node and its Control Method	2021107361	Granted
26.	US	Wideband Electromagnetically Coupled Microstrip Patch Antenna for 60 GHz Millimeter Wave Phased Array	17/780,554	Applied

Annexure-II

S. No	Title of the Patents	Countries filed (Code)	Tangible Products
1	Development of Alcoholic sucrose -based Superplasticizer for Geo-polymeric concrete and its process thereof	US	Alcoholic sucrose -based Superplasticizer
2	High performance glossy finish green hybrid composites with variable density and an improved process for making thereof	WO ZA US CA EP MY BR CN	High performance glossy finish green hybrid composites
3	Radiation shielding red mud based hybrid composite panels and process for preparing the same	WO	Radiation shielding red mud based hybrid composite panels
4	Advanced lead free radiation protection materials utilizing modified brine sludge composition and the process thereof	US	Advanced lead free radiation protection materials
5	Advanced multi-functional asbestos free thermal insulating material and the process for preparation thereof	US	Advanced multi-functional asbestos free thermal insulating material
6	Development of gravity operated low cost household defluoridation device using gamma nanoalumina incorporated filter	US	Gravity operated low cost household defluoridation device
7	A glossy finish sandwich composite and process for preparing the same	WO US	A glossy finish sandwich composite
8	Multifunctional hybrid particle fibres board from agro-residues and process for Preparation thereof	US	Hybrid particle fibres board
9	High Dense Red Mud Shields for X- and γ -ray Attenuation	WO	High dense red mud shields
10	A novel process and kit for detection of novel coronavirus and other viruses	WO	Kit for detecting SARS-cov2- Tangible
11	Conjugated polymer compositions, articles thereof, and methods thereof	US	Epoxy primer coating with self-healing property.
12	A process for producing cathode active material composition for a lithium-ion battery	WO	Li-ion battery cathode materials preparation.
13	Antimicrobial peptide and its use thereof	EP US	Application in aerospace industry
14	2-benzyl-indanone compounds as anticancer agent and a process for preparation thereof	EP FR GB	Semi-synthetic compound with anticancer activity under preclinical evaluation.

15	A THERMOGRAVIMETRIC REACTOR (TGR) TO STUDY WEIGHT CHANGES OF SOLIDS AND A PROCESS THEREOF	WO	THERMOGRAVIMETRIC REACTOR
16	AN IMPROVED DISPERSING AGENT COMPOSITION FOR APPLICATION IN TANNING AND A PROCESS FOR THE PREPARATION THEREOF	WO BR IR SA LK TH ZA EP AP VN CN	Dispersing agent usable as dry tanning agent towards eco-benign leather making.
17	A COMPOSITION USEFUL FOR PRE-TREATMENT IN WATERLESS TANNING	WO BR EP CN	Specialty chemical composition for waterless tanning
18	A PROCESS FOR THE TREATMENT OF RAW HIDE/ SKIN TRIMMING	WO ET TR AE BR ZA AU	Gelatin prepared from raw hide/skin trimmings, thereby creating wealth out of waste.
19	Vehicle Mounted Sliding Type Retractable Mobile Protective Shield	US	Vehicle Mounted Sliding Type Retractable Mobile Protective Shield
20	VEHICLE MOUNTED SYSTEM AND METHOD FOR DISTRIBUTED IRRITANT SPRAY	WO	VEHICLE MOUNTED SYSTEM AND METHOD FOR DISTRIBUTED IRRITANT SPRAY
21	Multipurpose induction charging based air-induced air-assisted high range electrostatic spraying system for dust mitigation and environment protection	WO	Air-assister Electrostatic Pesticides sprayer; Electrostatic Disinfection Device
22	Method and system for activity recording, visualisation and analysis for identified segments of forest	WO BD LK	eleSeisAlert: Seismic sensing based elephant movement detection and alert system
23	ACID AND OXIDATIVE RESISTANT CATION EXCHANGE MEMBRANE	WO	Acid and oxidative resistant homogenous cation exchange

	AND ITS METHOD OF PREPARATION THEREOF		membrane
24	A PROCESS FOR THE PREPARATION OF POTASSIC FERTILISER FROM ALCOHOL DISTILLERY EFFLUENT	ID PK WO PH	Multi-nutrient potassic fertilizer, by recovering potassium
		US BR TH	
25	ULTRATHIN POLYMER NANOFILM COMPOSITE MEMBRANE AND A PROCESS FOR PREPARATION THEREOF	WO JP US EP KR	Highly selective ultrathin polymer nanofilm; its composite membrane
26	A PROCESS FOR RECOVERY OF DE-SALTED ORGANICS FROM SPENT WASH	PK WO	Multi-nutrient potassic fertilizer
27	HIGHLY SELECTIVE ULTRATHIN POLYMER NANOFILM COMPOSITE MEMBRANE AND PROCESS FOR PREPARATION THEREOF	WO EP JP US KR	Highly selective ultrathin polymer nanofilm; its composite membrane
28	FLUORINATED-ALIPHATIC HYDROCARBON BASED STABLE ANION-EXCHANGE MEMBRANE AND ITS METHOD OF PREPARATION THERE OF	WO KR US JP EP CN	Anion exchange membrane
29	An eco-friendly process for hydrogenation of organic molecules using hydrous ruthenium oxide catalyst	US	Preparation of compounds containing amino groups bound to a carbon skeleton from amines, by reactions not involving amino groups, e.g. reduction of unsaturated amines, aromatisation, or substitution of the carbon skeleton by reduction of unsaturated amines by reduction of six-membered aromatic rings
30	Integrated process for potash recovery from biomethanated spent wash with concomitant environmental remediation of effluent	PH US BR ID TH	potash recovery from BMSW

31	Compounds for detection of homocysteine and its method of preparation thereof	WO	Method for determining homocysteine concentration in samples in which homocysteine is condensed using an enzyme cystathionine beta synthase to form cystathionine. Pyruvate and/or ammonia are released from cystathionine by action of an enzyme, cystathionine beta lyase, and homocysteine is regenerated.
32	A DEVICE FOR COLLECTING WATER SAMPLE TO CONCENTRATE DIVERSIFIED BACTERIA FROM DIFFERENT WATER DEPTH	US EP	A water sampling device
33	UV SHIELDING BIO-DERIVED FURANIC POLYMERS	WO AU SG EP US	UV shielding bio-derived furanic polymers (BFP).
34	METHOD AND KIT FOR DETECTION OF POLYNUCLEOTIDE	BD WO GCC TW AU OA CA US AP EP	FnCas9 Editor Linked Uniform Detection Assay (FELUDA) for COVID-19
35	A nanobiocomposite for wound healing and a process for the preparation thereof	JP US EP FR IT	A nanobiocomposite for wound healing
36	A PROCESS FOR PREPARATION OF 3,6- DICHLORO CYANO PYRAZINE, 3,6- DIOXOPIPERAZINE DERIVATIVES AND PRODUCTION OF FAVIPRAVIR THEREOF	WO	Favipiravir tablet was launched by Cipla in the name of Ciplenza
37	WARP KNIT POLYETHYLENE TEREPHTHALATE LAYER FACE MASK SOURCED FROM WASTE	WO	SaanS mask (four layer protective mask) was launched by various NGOs

	RO MEMBRANE		
38	PROCESS FOR THE PREPARATION OF DERIVATIVES OF 1,1-DIALKYLETHANE-1,2-DIOLS AS USEFUL INTERMEDIATES	WO ZA CN	1,1- dialkylethane-1,2-diols and process for the preparation thereof useful as an intermediate for the preparation of active pharmaceutical ingredients, for anti-bacterial, anti-cancer, anti-HIV, anti-parasitic, anti-tuberculosis, anti-leishmaniasis agents etc., as well as imaging agents.
39	SOLID DISPERSION COMPRISING AN ANTICANCER COMPOUND WITH IMPROVED SOLUBILITY AND EFFICACY	WO CA EP US	SOLID DISPERSION COMPRISING AN ANTICANCER COMPOUND ((1'R,2'S)-2-(2,6-dichlorostyryl)-5,7-dihydroxy-8-(3-hydroxy-1- methylpiperidin-4-yl)-4H-chromen-4- one) FOR IMPROVED SOLUBILITY AND EFFICACY
40	Inhibitors to target HIV-1 NEF-CD80/CD86 interactions for therapeutic intervention	WO US JP EP	Compounds useful as medicaments its use in the manufacture of medicaments for treatment, prevention or suppression of diseases, and conditions mediated by HIV.
41	SUSTAINED RELEASE FORMULATIONS OF CROCUS SATIVUS	WO CA US EP	Novel sustained release formulations comprising Crocus sativus extract or its active ingredient-enriched fraction for the treatment of chronic inflammatory diseases.
42	GASTRORETENTIVE SUSTAINED RELEASE FORMULATIONS OF BERGENIA CILIATA	WO CA US EP	Novel gastroretentive swellable oral formulations for sustained or delayed release of bergenin-rich <i>Bergenia ciliata</i> extract/fraction and its process thereof
43	PROCESS FOR THE SYNTHESIS OF CANNABIDIOL AND INTERMEDIATES THEREOF	WO AU CA US IL	Novel Intermediate compounds useful for the manufacturing of Cannabidiol in milligram to gram or kilogram scale.
44	SUBSTITUTED AURONE ALKALOIDS AS ANTI-MYCOBACTERIAL AGENTS	CN EP GB	Novel compounds for treatment of tuberculosis.
45	SUSTAINED RELEASE FORMULATIONS OF DYSOXYLUM BINECTARIFERUM	WO US CA EP	Novel oral formulations for sustained or delayed release of rohitukine -rich <i>Dysoxylum binectariferum</i> extract/fraction and its process thereof.

46	INDOLYLKOJYL METHANE ANALOGUES, PROCESS OF PREPARATION THEREOF AND USE AS INHIBITOR OF CANCER CELL INVASION AND METASTASIS	WO	Novel INDOLYLKOJYL METHANE ANALOGUES for supressing metastasis in breast cancer
		GB	
		US	
47	A PROCESS FOR THR PREPARATION OF NATURAL CRYSTALLIZED THYMOL FROM MONARDA CITRIODORA (JAMMU MONARDA) OIL	WO	Industrially viable Crystallization of thymol at low temperature without heating of the essential oil, avoids the use of harmful solvents and techniques like distillation or solid phase extraction.
		EP	
		US	
		CA	
48	3-PYRIMIDINYL PYRROLO [2,3-b] PYRIDINE AS NEW ANTICANCER AGENTS AND THE PROCESS FOR THE PREPARATION THEREOF	EP	Novel 3-pyrimidinyl pyrrolo [2,3-b] pyridine its preparation and anticancer activities(modulators of cyclin-dependent kinase).
		FR	
		GB	
49	FUSED PYRIMIDINES AS ISOFORM SELECTIVE PHOSPHOINOSITIDE-3-KINASE-ALPHA INHIBITORS AND PROCESS FOR PREPARATION THEREOF	CA	Novel Fused Pyrimidine compounds, its synthesis, anticancer and phosphoinositide-3-kinase inhibitory activity of fused pyrimidine compounds
		US	
		EP	
		GB	
50	FURANOCHALCONES AS INHIBITORS OF CYP1A1, CYP1A2 AND CYP1B1 FOR CANCER CHEMOPREVENTION	CA	Furanochalcone class of compounds, as potent inhibitors of CYP1A1, CYP1A2 and CYP1B1 enzymes. Compounds of the invention can be used as cancer chemopreventive agents
		US	
		EP	
51	DOUBLE METAL CYANIDE CATALYST FOR THE PRODUCTION OF POLYETHER POLYOLS AND A PROCESS THEREOF	US	Polyether polyols Compound
52	An improved process for the selective production of N-methyl-2-pyrrolidone (NMP)	JP	N-methyl-2-pyrrolidone (NMP) Compound
		US	
		DE	
		EP	
		GB	
		CN	
		KR	
53	An improved process for photocatalytic hydrocarboxylation of methanol with CO2 to produce acetic acid	WO	Acetic acid
		EP	
		JP	
		CN	
		US	

54	An improved process and catalyst for low temperature non-oxidative dehydrogenation of propane to propylene	US	Propylene
55	A PROCESS FOR THE PHOTOCATALYTIC ALLYLIC OXIDATION OF OLEFINS USING CARBON DIOXIDE	US	α,β -unsaturated hydroxyl or carbonyl compounds
56	A single step process for the simultaneous production of aromatics, naphthenics and isoparaffins using transition metal functionalized Zeolite based catalyst	US	Aromatics, naphthenics and isoparaffins
57	A LIGHT ASSISTED, CATALYST FREE OXIDATION OF ALDEHYDES TO CARBOXYLIC ACIDS USING CARBONDIOXIDE	US	Carboxylic acids
58	A Method for Reactive Desulfurization of Crude Oil and Sulfur Rich Petroleum Refinery Fractions	US	Desulfurized and lean sulphur crude oil
59	A Process for crude petroleum oil processing in the crude distillation unit	US	Petroleum Distillate
60	HEAVY PETROLEUM RESIDUE DERIVED IRON INCORPORATED SP2 CARBON NANOGRANULES FOR IMPROVED SYNTHESIS OF LIGHT OLEFINS	US	Light olefins
61	Ecofriendly and biodegradable lubricant formulation and process for preparation thereof	WO JP EP US	Biodegradable lubricant
62	A DOMESTIC COOKING BURNER FOR PIPED NATURAL GAS	WO BD NG ID EG	Domestic cooking burner
63	A PROCESS FOR UPGRADATION OF HEAVY CRUDE OIL/RESIDUE USING WASTE PLASTIC AS HYDROGEN DONATING AGENT	US	Middle Petroleum Distillate
64	EARTHEN MEMBRANE BASED TWO CHAMBERED CONSTRUCTED WETLANDS CUM MICORBIAL FUEL CELL FOR TREATMENT AND DETOXIFICATION OF AZODYE	WO	Process output is tangible in terms of colorless treated azo dye wastewater

	CONTAINING WASTEWATER		
65	Ultrafast Synthesis of MAX Phases by Reactive Flash Sintering and A Method Thereof	WO	Ti ₃ SiC ₂ MAX phase
66	A stable dianionic π -dimer at ambient conditions and a process for preparation thereof, and their white light emission properties useful in designing the white light Emitting devices	US	DIANIONIC DIMER FOR LED APPLICATIONS
67	Modified microfluidic impedance based lab on chip for individual cell counting and a process for fabrication thereof	WO SG	3D microfluidic chip for impedance cytometry
68	Organic-inorganic composite material for removal of anionic pollutants from water and process for the preparation thereof	AU	Materials with high fluoride adsorption capacity for use in water filters ; Usage of the material for removal of fluoride from wastewater from smelting industry
69	A system and method for onsite wastewater treatment and resource recovery	WO	WASTEWATER TREATMENT SYSTEM
70	An improved disinfection-solidification process for pathogenic medical waste disposal	WO	MEDICAL WASTE DISPOSAL PLANT
71	Heating assembly	WO BD	Heating Assembly
72	Electrospun collagen-graphene-polymer composite nanofibres for supercapacitors	TW LK EP JP CN US KR	Product development is under progress
73	Design and Development of a High-Volume PM2.5 Impactor	US	PM2.5 Sampler
74	Ultrasonic pulse velocity tester device with threshold error correction	US	Ultrasonic Pulse Velocity Tester Device with Threshold Error Correction
75	Temporary support structural system for power lines	WO	Emergency Retrieval System for Power Lines (ERS)
76	Two pin gimbal joint	WO	Emergency Retrieval System for Power Lines (ERS)
77	A vetiver plant named cimap - forgaika having novel combination of a forage grass and a soil binder	US	This is a plant variety that yields high biomass of forage quality, besides standard features of Vetiver grass for

			environmental conservation.
78	Method for increasing viridiflorol content in tissues	US	Mentha piperita
79	A process for the preparation of vanillin and other substituted phenylaldehydes	WO	Vanillin

* Code used in Status

IF: In-force

RO: Regional Phase Over

LP: Lapsed

PP: Patent Pending

AB: Abandoned
