100 HIGH TEMPERATURE (Tc GREATER THAN 30 K) SUPERCONDUCTOR MATERIAL (I.E., ELEMENT, COMPOUND, OR COMPOSITION), PER SE

110 Having Tc greater than or equal to 150 K

120 Thallium (Tl) containing

121 Bismuth (Bi) containing

122 Organic polymer containing

123 Halogen [i.e., fluorine (F1), chlorine (Cl), bromine (Br), iodine (I), astatine (At)] containing

124 Free metal containing

125 Copper (Cu) and oxygen (O) containing

126 Containing three atoms of copper to between six and seven atoms of oxygen [e.g., YCu3O(7-@), LaCu3O(6+*), etc.]

150 HIGH TEMPERATURE (Tc GREATER THAN 30 K) DEVICES, SYSTEMS, APPARATUS, COMPONENTS, OR STOCK, OR PROCESSES OF USING

160 Measuring or testing system or device

161 Bolometer

162 Magnetic field sensing system or device (e.g., SQUID, etc.)

163 Significant cryogenic refrigeration system having superconductor component as part of the system or having superconductor device or material to be cooled present therewith (e.g., Peltier effect device, etc.)

164 Projectile or launching device or system

165 System, device, or component utilizing suspension of superconducting particulate material in liquid (e.g., seal, pump, etc.)

166 Dynamoelectric machine (e.g., motor, generator, etc.), rotational system or device (e.g., clutch, rotor, bearing, etc.), or components thereof

170 Information processing (e.g., logic circuits, computer, etc.) or information storage or retrieval system, device, or component (i.e., both dynamic and static)

171 Recording by magnetism, magnetic record carriers, or recording head arrangements

180 Device producing stimulated emission (e.g., laser, maser, etc.)

181 Photoconductive, light transmissive, light emissive, or light responsive device or component

182 Device or arrangement the operation of which is modified by changing optical properties (e.g., reflectivity, transmission, etc.) of superconductive material

183 Having optical waveguide

190 Josephson junction, per se (e.g., point contact, bridge, barrier junction, SIS, SNS, SSS, etc.) or Josephson junction with only terminals or connect

191 Semiconductor thin film device or thin film electric solid-state device or system (i.e., active or passive)

192 Capacitor or including capacitor

193 Superconducting transistor (e.g., Josephson transistor, etc.)

200 Electric discharge tube

201 Antenna

202 Electric communication system containing transmitter or receiver of pulse, digital, or electromagnetic radio, television, or radar wave form

203 Electroacoustic transducer

204 Device or system with electronic circuitry for generation of oscillations

210 High frequency waveguides, resonators, electrical networks, or other devices of the waveguide type (e.g., phase shifters, cavity filters, etc.)
Electrical energy storage device (e.g., accumulator, etc.), inductor, transformer, magnetic switch, magnetic ring, sphere, coil, or magnetic arrangement.

Truncated hollow spherical or truncated cylindrical flux source bodies (e.g., magic hemisphere, magic half-ring, etc.).

Noncoiled hollow magnetic arrangement.

Superconductor having metal connect, pad, connect structure, or patterned superconductor circuit, per se.

Superconducting wire, tape, cable, or fiber, per se.

Having plural superconducting wire or superconducting fiber component (e.g., multifilament wire, etc.).

Having nonsuperconducting core.

Superconducting layer and organic or free carbon layer (i.e., adjacent or nonadjacent to superconductor).

Superconductor next to superconductor.

Superconductor layer and one semiconducting or silicon (Si) layer.

Superconductor layer next to free metal containing layer.

Superconductor next to two or more nonsuperconductive layers.

Superconductor next to layer containing nonsuperconducting ceramic composition or inorganic compound (e.g., metal oxide, metal nitride, etc.).

Substrate for supporting superconductor.

Producing lattice imperfection flux pinning sites or increasing critical current density through particle bombardment, electromagnetic wave energy, or using fissionable material.

Utilizing particle (e.g., electron beam, ion, etc.) bombardment or electromagnetic wave energy (e.g., laser, etc.) treatment of selected regions to form conducting or insulating areas.

Producing Josephson junction, per se (e.g., point contact, bridge, barrier junction, SIS, SNS, SSS, etc.).

Semiconductor device or thin film electric solid-state device manufacture.

Using magnetic field (e.g., for aligning, texturizing, classifying, etc.).

Using sonic, ultrasonic, or vibrational energy (e.g., shock processing, vibration compacting, etc.).

With material removal by etching, laser ablation, or mechanical abrasion.

Utilizing plasma etching or sputter etching.

Laser ablation.

Utilizing mask (e.g., photoresist, etc.).

With glass forming, working, or treating.

Producing powder or short fiber (i.e., less than 15 cm) by spraying, dropping, or slinging of solution, suspension, or melt (e.g., spray-drying, atomizing, etc.).

Process of making wire, tape, cable, coil, or fiber.

Making multifilament.

Isostatic pressing (e.g., HIP, hydrostatic pressing, etc.).

With metal deforming, metal wrapping, or metal coiling.

With coating.

Utilizing sol or gel.

With precipitating from solution.
Using an organometallic intermediate (e.g., ligand, chelate, clathrate, etc.)

Including coating step

Vapor deposition

With melting

With zone melting, zone solidification, or seed pulling

And coating or impregnating with melt

Producing fullerene (i.e., C60) type superconductor or analog thereof

Producing halogen [i.e., fluorine (F1), chlorine (Cl), bromine (Br), or astatine (At)], containing superconductor

Coating

Printing (e.g., screen printing, etc.) or application with solid coating means

Electrolytic or electrophoretic coating

Vapor deposition

Laser evaporative (i.e., ablative) coating

RF sputtering (e.g., 13.56 MHz, etc.)

Using plasma

Utilizing electromagnetic wave energy, ion, or plasma

Including exothermic reaction or ignition of binder

Treating with high pressure oxygen

Utilizing fluid bed

Shaping or consolidating (e.g., pelletizing, compacting, etc.)

Utilizing isostatic pressure (e.g., HIP, etc.) or specified pressure

Bismuth (Bi) or thallium (Tl) containing

Heating, annealing, or sintering

Bismuth (Bi) or thallium (Tl) containing

Precursor of High Temperature (TC Greater Than 30 K) Superconductor Material or Stock, Per Se, or Process of Producing the Precursor

Target for coating

Organometallic (e.g., ligand, clathrate, oxalate, etc.)
HIGH TC (ABOVE 30 K)
SUPERCONDUCTING MATERIAL

Containing transition metal oxide with rare earth or alkaline earth

Lanthanum (La) -(e.g., La2Cu04)

Alkaline earth (i.e., Ca, Sr, Ba, Ra) - [e.g., La(2-x)Ba(x)CuO4]

Other rare earth (i.e., Sc, Y, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu) and alkaline earth (i.e., Ca, Sr, Ba, Ra)

Yttrium (Y) and barium (Ba) - (e.g., YBa2Cu307)

Noble metal (i.e., Ag, Au, Os, Ir, Pt, Ru, Rh, Pd) or chromium (Cr), manganese (Mn), iron (Fe), cobalt (Co), or nickel (Ni) - [e.g., YBa2Cu(3-x)Fe(x)O(y)]

Bismuth (Bi) - (e.g., BiCaSrCu0)

Thallium (Tl) - (e.g., Tl2CaBaCu308)

Bismuth (Bi) - (e.g., BaKBi0)

Composition containing superconducting material and diverse nonsuperconducting material

MANUFACTURING SYSTEM OR APPARATUS FOR MAKING HIGH TEMPERATURE (I.E., TC GREATER THAN 30 K) SUPERCONDUCTOR PRODUCT, DEVICE, ARTICLE OR STOCK (I.E., WHICH SYSTEM OR APPARATUS DOES NOT ITSELF CONTAIN A SUPERCONDUCTING COMPONENT)

NPL PLUS FP HIGH TEMPERATURE (TC GREATER THAN 30 K) SUPERCONDUCTOR: MATERIAL (I.E., ELEMENT, COMPOUND, OR COMPOSITION) DEVICES, SYSTEMS, APPARATUS, COMPONENTS, STOCK, PROCESSES OF USING SAME, OR PROCESSES OF PRODUCING OR TREATING HIGH TEMPERATURE (TC GREATER THAN 30 K) SUPERCONDUCTOR MATERIAL OR SUPERCONDUCTOR CONTAINING PRODUCTS OR PRECURSORS THEREOF

B. INVOLVING LOW TEMPERATURE SUPERCONDUCTORS (TC AT OR BELOW 30 K)

MATERIAL, PER SE, PROCESS OF MAKING SAME
<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>365/161</td>
<td>Location addressed (i.e., word organized memory type)</td>
</tr>
<tr>
<td>365/161</td>
<td>Random access (i.e., bit organized memory type)</td>
</tr>
<tr>
<td>365/160</td>
<td>Plural (e.g., memory matrix, etc.)</td>
</tr>
<tr>
<td>365/160</td>
<td>Content addressed (i.e., associative memory type)</td>
</tr>
<tr>
<td>365/160</td>
<td>Location addressed (i.e., word organized memory type)</td>
</tr>
<tr>
<td>365/160</td>
<td>Random access (i.e., bit organized memory type)</td>
</tr>
<tr>
<td>73, 324, 356, and 374</td>
<td>Measuring and testing</td>
</tr>
<tr>
<td>324</td>
<td>Electrical</td>
</tr>
<tr>
<td>324</td>
<td>Nuclear magnetic resonance (NMR) system or device</td>
</tr>
<tr>
<td>324/248</td>
<td>Magnetometer</td>
</tr>
<tr>
<td>250</td>
<td>Radiant energy application</td>
</tr>
<tr>
<td>250/338+</td>
<td>Infrared responsive electric signaling</td>
</tr>
<tr>
<td>361/19</td>
<td>Protective circuit</td>
</tr>
<tr>
<td>361/141</td>
<td>Control circuit for electromagnetic device</td>
</tr>
<tr>
<td>318</td>
<td>Electric motor control</td>
</tr>
<tr>
<td>331</td>
<td>Oscillator</td>
</tr>
<tr>
<td>331/107S</td>
<td>With solid-state active element</td>
</tr>
<tr>
<td>330</td>
<td>Amplifier</td>
</tr>
<tr>
<td>307</td>
<td>Electrical transmission or interconnection system</td>
</tr>
<tr>
<td>307</td>
<td>Nonlinear solid-state device system or circuit</td>
</tr>
<tr>
<td>307/476</td>
<td>Digital logic</td>
</tr>
<tr>
<td>307/462</td>
<td>Function of AND, OR, NAND, NOR or NOT</td>
</tr>
<tr>
<td>307/245</td>
<td>Gating (i.e., switching) circuit</td>
</tr>
<tr>
<td>307/245</td>
<td>With Josephson junction</td>
</tr>
<tr>
<td>307/245</td>
<td>With thin film device</td>
</tr>
<tr>
<td>307/277</td>
<td>Stable state circuit for signal shaping, converting, or generating</td>
</tr>
<tr>
<td>307/277</td>
<td>With Josephson junction</td>
</tr>
<tr>
<td>307/306</td>
<td>With Josephson junction</td>
</tr>
<tr>
<td>333/99S</td>
<td>Wave transmission line, network, waveguide, or microwave storage device</td>
</tr>
<tr>
<td>363</td>
<td>Electric power conversion system</td>
</tr>
<tr>
<td>363/14</td>
<td>Current conversion</td>
</tr>
<tr>
<td>323</td>
<td>Power supply, regulation, or energy storage system</td>
</tr>
<tr>
<td>323/360</td>
<td>Including transformer or inductor</td>
</tr>
<tr>
<td>325</td>
<td>Magnetic lens</td>
</tr>
<tr>
<td>307/91</td>
<td>Magnetic field shield</td>
</tr>
<tr>
<td>257</td>
<td>Active solid-state device</td>
</tr>
<tr>
<td>310</td>
<td>Electrical generator or motor structure</td>
</tr>
<tr>
<td>310/40+</td>
<td>Rotary dynamoelectric type</td>
</tr>
<tr>
<td>310/52+</td>
<td>With cooling</td>
</tr>
<tr>
<td>335/216</td>
<td>Magnet or electromagnet</td>
</tr>
<tr>
<td>336/DIG 1</td>
<td>Inductor</td>
</tr>
<tr>
<td>338/32S</td>
<td>Resistance device responsive to magnetic field</td>
</tr>
<tr>
<td>3174/15CA</td>
<td>Circuit maker or breaker</td>
</tr>
<tr>
<td>361/331+</td>
<td>Housing and mounting assembly with plural diverse electrical components</td>
</tr>
<tr>
<td>174</td>
<td>Conductor</td>
</tr>
<tr>
<td>174/15CA</td>
<td>Cooling, or feeding, circulating, or distributing fluid in superconductive apparatus</td>
</tr>
</tbody>
</table>

January 2010
...Cable: (Class 174/15S)
...Conductor structure: (Class 174/126S and 128S)
Refrigeration: (Class 62)
...Utilizing rare earth material
...Heat pipe device
...Magnetic or electrical effect cooling
...Magnetic device cooling
...Cyclic cryogenic system (e.g., Sterling, Gifford-McMahon, etc.)
...With regenerative heat exchanger
...Special refrigerant compound
...Cryogenic media transfer
...Cryogenic envelope
...Method of cooling
Heat exchange: (Class 165)
...Railway (e.g., rapid transit, etc.): (Class 104)
...Suspension (e.g., magnetic, electrodynamic, etc.)
...Guidance means (i.e., in addition to the track)
...Motor structure
...Switching device (i.e., electrical not railway stock diverting)
...Support structure
...Method of operation
...Power plant: (Class 60)
...Pump: (Class 417)
...Fluid reaction surface (i.e., impeller): (Class 416)
...Metal founding: (Class 164)
...Casting process
...Using magnetic or electric field
...Making composite product
...Continuous casting
...Mechanically manufacturing superconductor: (Classes 29, 72, and 228)
...With metallurgical heat treating
...Reactive formation of superconducting intermetallic compound
...Utilizing diffusion barrier
...Metal working prior to treating

Making Josephson junction device
Making device having semiconductive component (e.g., integrated circuit, etc.)
Making superconductive magnet or coil
Making superconductive joint
Mechanically joining superconductive members
Metallurgically bonding superconductive members
Metal deforming
...By extruding
...By drawing
Classifying, separating, and assorting solids using magnetism: (Class 209)
Separating diverse particulates
...In liquid slurry

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