Appendices

A Detailed Table of Research Groups and their Scientific Contributions

Table A1. Overview of the keywords used for the labeling of the scientific sources.

#	Category	Keywords
1	Experimental Analysis	Gas Discharge Study, Gas Discharge Study (Argon), Gas Discharge Study (Cylindrical), Fusion Regimes, Surface Fusion, Fast Neutral Particle Analysis, Jet Mode with Magnetic Nozzle, Low Power Demonstrator (Pulsed), Gas Discharge With Transparent Electrodes, Graphene Doped Discharge, Negative Ion Detection, Glow Discharge Study, Electron Density Measurement, Low Power Demonstrator, Ion Flux Mapping, Jet Mode Analysis, Photon Radiation, Plasma Discharge Modes, Gas Discharge Study (Hydrogen), Electron Density Measurement (Microwave)
2	Application Analysis	Advanced Space Application, Advanced Space Application (HIIPER), Advanced Space Application (VIPER), Boron Neutron Capture Therapy, Explosives Detection, Neutron Activation Analysis, Neutron Beam Generation, Neutron Capture Therapy, VUV Source, Fusion Torch, Fission Reactor Application, X-Ray Source, Fullerene Production, Surface Treatment, Neutron Dynamic Therapy, Power Plant Design, Special Nuclear Material Detection, Fuel Encapsulation, Electric Space Propulsion, Medical Isotope Production, Hydrogen Production, Landmine Detection, Surface Irradiation and Implantation, Surface Irradiation, Spin-Off Concept, Application Analysis, Neutron Radiography, IEC Thruster, Neutron Imaging, Neutron Transmutation Doping, Sub-Critical Reactor Design, Commercialization, Study on Energy Technology
3	Electrodes	Additive Manufacturing, Biconical Cathode, Cathode Optimization, Cathode Transparency Optimization, Cathode Temperature Measurement, Coaxial Cylindrical Design, Double Grid Design, Cylindrical Design, Effect of Ti Electrode, Graphite Cathode, Water-Cooled Cathode, Magnetic Cathode, Exhaustible Cathode Design, Electrode Optimization
4	Others	Additional, Building Instructions, Educational, Engineering Details
5	Classification	Patent, Review, Review Book, Report, Editors Comments, Introduction, Overview, History Review
6	Diagnostics	Dust Particle Diagnostic, Emissive Prope, Cathode Temperature Measurement, Langmuir Probe, Laser-Induced Fluorescence, Light Emission Measurement, Residual Gas Analyzer, Chordwire Diagnostic, Doppler Shift Methods, Electric Field Measurement, Optical Emission Spectroscopy, Time-Of-Flight Diagnostic, Ion-Lifetime Measurement, Special Diagnostics, Nuclear Fusion Detection Methods, Spectroscopy, Passive Spectroscopy, Probe Analysis, Proton Detector, Neutral Particle Beam Energy Measurement Device
7	Simulation	COMSOL, Neural Networks, Fokker-Planck, SIMION, Particle-In-Cell, Finite-Element-Analysis, Monte-Carlo-Simulation, Simulation, Simulation (External Ion Gun), Buneman-Instability, Simulation (Double-Grid), Numerical Simulation, Negative Ion Simulation, EKXL-Code, XL-Code
8	Special Design	Polywell, Nanosecond Vacuum Discharge, Ion Driven Oscillation (RIDO) Concept, Coaxial Cylindrical Design, Double-Grid Design, Triple-Grid Design, Water-Cooled Design, Tritium Burning, Reverse Biased Spherical Grid, Reversed Polarity IEC, Pulsed Reversed-Polarity IEC Device, Multistage HV Feedthrough, Penning Fusion Device, Periodically Oscillating Plasma Sphere, Planar Geometry Design, Six Ion Gun Fusion Experiment (SIGFE), Converging Beam Source Design, Continuous Grid Design, Plasma Diode Configuration, Magnetically Shielded Grid, Magnetic Electrostatic Plasma Confinement, Magnetic Inertial Electrostatic Confinement Fusion, Magnetically Confined Virtual Cathode Fusion Device, Hollow Cathode Design, Closed-Loop System, Multi-Grid Design, Compressed Ion Beam (Calculation), Commercial Linear High Power DD, Pulsed Modulator, Electron Energy Recovery, Electromagnetic Trap, Electrostatic Dipole, Pulsed Magnet Improvement, EM Fields to Reduce Nuclear Fusion Input Energy Needs, SCIF Device, Dipole Assisted Neutron Source, Pulsed Power Supply Design, Commercial High Power DD, Closed-Loop System (DT)

9	Assisted Discharge	Helicon Source, RF-Grid, External Ion Source, External Hollow Cathode, External Ion Sources, External Magnetic Field, Magnetron Discharge
10	Modelling	Atomic Processes, Brillouin Limit, Charge Exchange Reactions, Counterstreaming Ion Instability, Cylindrical IEC, Space Charge Limit, Streaming Instabilities, Fokker-Planck Modelling, Scaling Laws, Radiation Shielding, Radiation Hazard Analysis, Radiative Model, Modelling, He3 Fusion Interactions, Buneman Instability, Semi-Analytical Calculations (Density, NPR), Plasma Modelling
11	Fusion Experiments	Low Power DD (Spherical), Low Power DD (Cylindrical), Medium Power DD (Spherical), Medium Power DD (Spherical+Pulsed), Medium Power DD (Cylindrical), Medium Power DD (Cylindrical+Pulsed), Medium Power DHe3 (Spherical), Medium Power DD (Linear), High Power DD (Spherical), High Power DD (Spherical+Pulsed), High Power DD (Cylindrical), High Power DD (Cylindrical+Pulsed), High Power DD (Linear), High Power DD (Beam-Beam), High Power DHe3 (Spherical), High Power DHe3 (Beam-Beam), High Power He3He3 (Spherical), High Power DD (Cylindrical+Magnetic Cusp), Low Power DD (Beam-Beam), Medium Power DT (Spherical)
12	Multi-Potential Well Analysis	Experiments, Theory, Theory + Experiments

Table A2. Overview of different actors in the field of IECF sorted by universities (U), research institutes (R) and companies (C) and the year of first publication. An underlined ID indicates non-fusion experimental activity. A bold **ID** indicates fusion experiments. In the column *Keywords* publications statistics are given in brackets: (J: # of journal publications, C: # of conference proceedings, T: # of theses, P: # of patents, B: # of books).

ID	Affiliation	First Pub.	Latest Pub.	# Pub.	Keywords
			Universities		
U1	Stanford Univ.	1967	1975	8	**Multi-Potential Well Analysis:** Theory[R1] ,**Simulation:** Simulation[R2–R8] , *(J: 2, CP: 3, RP: 3)*
U2	Pennsylvania State Univ.	1968	2017	11	**Experimental Analysis:** Electron Density Measurement[R9] ,**Modelling:** Modelling[R10–R13] ,**Multi-Potential Well Analysis:** Experiments[R14,R15] ,Theory[R14,R16] ,**Others:** Additional[R17] ,**Simulation:** Simulation[R18,R19] , *(J: 5, T: 6)*
U3	Univ. of Illinois at Urbana-Champaign (UIUC)	1970	2022	246	**Application Analysis:** Advanced Space Application[R20–R64] ,Application Analysis[R65–R69] ,Boron Neutron Capture Therapy[R70] ,Explosives Detection[R71–R78] ,Fission Reactor Application[R79,R80] ,Fullerene Production[R81,R82] ,Fusion Torch[R69,R83] ,HIIPER Space Thruster Design[R84–R106] ,Hydrogen Production[R83,R107] ,Neutron Activation Analysis[R108] ,Neutron Capture Therapy[R109,R110] ,Power Plant Design[R111,R112] ,Special Nuclear Material Detection[R71,R72,R74,R76] ,Sub-Critical Reactor Design[R113–R118] ,VIPER Space Thruster Design[R119,R120] ,VUV Source[R121] ,X-Ray Source[R122] ,**Assisted Discharge:** External Ion Source[R123–R129] ,External Ion Sources[R130] ,**Classification:** History Review[R131] ,Introduction[R132–R134] ,Overview[R135–R148] ,Patent[R82,R149–R157] ,Review[R158] ,Review Book[R159] ,**Diagnostics:** Light Emission Detection[R160,R161] ,Optical Emission Spectroscopy[R162] ,Proton Detector[R163] ,**Electrodes:** Cathode Optimization[R164,R165] ,Electrode Optimization[R166] ,Exhaustible Cathode Design[R167] ,**Experimental Analysis:** Electron Density Measurement[R168,R169] ,Gas Discharge Study[R170–R172] ,Jet Mode Analysis[R49,R94] ,Plasma Discharge Modes[R173–R175] ,**Fusion Experiments:** High Power DD (Linear)[R77,R78,R176–R178] ,High Power DD (Spherical)[R173,R176–R182] ,High Power DD (Spherical+Pulsed)[R183,R184] ,Medium Power DD (Cylindrical)[R133,R185] ,Medium Power DD (Cylindrical+Pulsed)[R186–R188] ,Medium Power DD (Spherical)[R133,R189,R190] ,Medium Power DD (Spherical+Pulsed)[R191,R192] ,**Modelling:** Charge Exchange Reactions[R193–R195] ,Cylindrical IEC[R196–R198] ,Modelling[R199–R201] ,Scaling Laws[R202] ,**Multi-Potential Well Analysis:** Experiments[R189,R203–R216] ,Theory[R217–R227] ,Theory + Experiments[R134,R228] ,**Others:** Additional[R229–R243] ,Educational[R244] ,Engineering Details[R245] ,**Simulation:** Fokker-Planck[R246–R249] ,Particle-In-Cell[R174,R175,R250,R251] ,SIMION[R164,R174,R175] ,Simulation[R188,R252–R257] ,XL-Code[R258] ,**Special Design:** Closed-Loop System[R259] ,Electrostatic Dipole[R260] ,Ion Driven Oscillation (RIDO) Concept[R261] ,Linear Design[R262,R263] ,Penning Fusion Device[R249,R264,R265] , *(B: 1, BC: 2, J: 57, CP: 139, RP: 15, PT: 10, T: 22)*
U4	Brigham Young Univ. (BYU)	1972	1976	10	**Experimental Analysis:** Electron Density Measurement (Microwave)[R266–R272] ,**Fusion Experiments:** High Power DD (Beam-Beam)[R266,R270,R272–R274] ,Low Power DD (Beam-Beam)[R275] ,**Multi-Potential Well Analysis:** Experiments[R267–R272] , *(J: 1, CP: 3, RP: 3, T: 3)*
U5	George Mason Univ.	1974	1974	2	**Multi-Potential Well Analysis:** Experiments[R276] ,Theory[R277] , *(J: 2)*

U6	Univ. of Wisconsin-Madison (UW)	1994	2020	88	**Application Analysis:** Application Analysis[R278–R285],Explosives Detection[R286–R288],Landmine Detection[R286,R288],Medical Isotope Production[R289–R296],Special Nuclear Material Detection[R297–R300],Surface Irradiation[R301–R303],Surface Irradiation and Implantation[R298,R304–R312],**Assisted Discharge:** External Ion Source[R313],Helicon Source[R314,R315],RF-Grid[R316],**Classification:** Introduction[R317],Overview[R318–R321],Patent[R322],**Diagnostics:** Chord-wire Diagnostic[R323,R324],Doppler Shift Methods[R325],Emissive Prope[R326,R327],Langmuir Probe[R326,R327],Proton Detector[R328–R331],Residual Gas Analyzer[R332],Special Diagnostics[R333],Time-Of-Flight Diagnostic[R334–R336],**Electrodes:** Cathode Optimization[R337–R340],Cathode Temperature Measurement[R341],Water-Cooled Cathode[R295],**Experimental Analysis:** Fast Neutral Particle Analysis[R342],Fusion Regimes[R328,R343,R344],Ion Flux Mapping[R323],Negative Ion Detection[R345–R347],Surface Fusion[R290,R294],**Fusion Experiments:** High Power DD (Beam-Beam)[R348],High Power DD (Spherical)[R286,R289,R290,R294,R326,R328,R349–R356],High Power DD (Spherical+Pulsed)[R297–R300],High Power DHe3 (Beam-Beam)[R348],High Power DHe3 (Spherical)[R289,R290,R292–R294,R296,R328,R350],High Power DHe3 (Tube)[R295],High Power He3He3 (Spherical)[R314,R315],Medium Power DHe3 (Spherical)[R357,R358],**Modelling:** Modelling[R319–R321,R326,R349,R359],Plasma Modelling[R360,R361],**Simulation:** Negative Ion Simulation[R347],Simulation[R362],**Special Design:** Dipole Assisted Neutron Source[R363],Polywell[R364,R365] , *(J: 56, CP: 11, RP: 1, PT: 1, T: 19)*
U7	Kyoto Univ. (KyotoU)	1995	2022	109	**Application Analysis:** Explosives Detection[R366–R369],Landmine Detection[R370–R382],Neutron Beam Generation[R383–R385],Neutron Dynamic Therapy[R386],Special Nuclear Material Detection[R387–R397],**Assisted Discharge:** External Ion Source[R398],Magnetron Discharge[R399–R413],**Classification:** Overview[R414,R415],Patent[R416],**Diagnostics:** Doppler Shift Methods[R417],Electric Field Measurement[R418],Laser-Induced Fluorescence[R401,R419–R423],Light Emission Detection[R424],Neutral Particle Beam Energy Measurement Device[R425],Proton Detector[R426–R428],**Electrodes:** Cylindrical Design[R429],Double Grid Design[R430],Electrode Optimization[R431,R432],**Experimental Analysis:** Surface Fusion[R433–R435],**Fusion Experiments:** High Power DD (Cylindrical)[R385],High Power DD (Spherical)[R377,R435–R440],High Power DHe3 (Spherical)[R436,R441],Low Power DD (Cylindrical)[R442–R444],Low Power DD (Spherical)[R445],Medium Power DD (Cylindrical)[R446,R447],Medium Power DD (Spherical)[R410,R448,R449],**Modelling:** Modelling[R450],**Multi-Potential Well Analysis:** Experiments[R419–R422,R451–R453],Theory[R454–R456],**Others:** Additional[R457–R461],**Simulation:** Particle-In-Cell[R412,R434,R456,R462–R464],Simulation[R384,R385,R432,R465–R471],**Special Design:** Closed-Loop System[R444],Electron Energy Recovery[R472,R473],Multistage HV Feedthrough[R470],Triple-Grid Design[R474],Water-Cooled Design[R373,R437] , *(BC: 4, J: 49, CP: 52, PT: 1, T: 3)*
U8	Massachusetts Institute of Technology	1995	2020	10	**Assisted Discharge:** External Ion Source[R475],**Diagnostics:** Ion-Lifetime Measurement[R476],**Fusion Experiments:** Low Power DD (Spherical)[R475],**Modelling:** Scaling Laws[R477–R479],**Simulation:** Particle-In-Cell[R480–R483],**Special Design:** Multi-Grid Design[R476,R480–R483],Penning Fusion Device[R484] , *(J: 4, CP: 2, T: 4)*
U9	Univ. of Texas-San Antonio	1995	1995	1	**Modelling:** Modelling[R485] , *(J: 1)*

U10	Kansai Univ.	1999	2017	18	**Assisted Discharge:** External Ion Source[R486–R488],External Ion Sources[R489],**Classification:** Editors Comments[R490],**Electrodes:** Cathode Optimization[R491],**Experimental Analysis:** Gas Discharge Study[R492,R493],**Fusion Experiments:** High Power DD (Spherical+Pulsed)[R494],Medium Power DD (Spherical)[R492,R493],Medium Power DT (Spherical)[R495],**Others:** Additional[R496],**Simulation:** Particle-In-Cell[R489,R491,R497–R502],**Special Design:** Closed-Loop System (DT)[R503],Tritium Burning[R495] , *(J: 10, CP: 8)*
U11	Kyushu Univ.	2000	2005	4	**Modelling:** Modelling[R504–R507] , *(J: 4)*
U12	Tokyo Institute of Technology (TIT)	2000	2021	37	**Application Analysis:** Landmine Detection[R508],Neutron Imaging[R509,R510],Neutron Transmutation Doping[R511],**Assisted Discharge:** External Hollow Cathode[R512,R513],**Classification:** Introduction[R514,R515],Overview[R516],Patent[R517],**Diagnostics:** Spectroscopy[R518–R523],**Electrodes:** Coaxial Cylindrical Design[R511],Effect of Ti Electrode[R524],**Fusion Experiments:** High Power DD (Cylindrical)[R513],High Power DD (Cylindrical+Magnetic Cusp)[R525,R526],High Power DD (Cylindrical+Pulsed)[R508,R527],High Power DD (Linear)[R528],High Power DD (Spherical+Pulsed)[R529–R532],Medium Power DD (Cylindrical)[R515,R524,R533],Medium Power DD (Cylindrical+Pulsed)[R534],Medium Power DD (Linear)[R509,R510,R521,R522,R535],Medium Power DD (Spherical)[R514,R518–R520,R536,R537],**Multi-Potential Well Analysis:** Experiments[R536],**Others:** Additional[R538–R543],**Simulation:** Monte-Carlo-Simulation[R521],Particle-In-Cell[R535,R544] , *(J: 12, CP: 22, RP: 1, PT: 1, T: 1)*
U13	Univ. of Sydney (USYD)	2001	2023	39	**Application Analysis:** Advanced Space Application[R545],IEC Electron Gun Design[R546],Surface Irradiation and Implantation[R547],**Diagnostics:** Doppler Shift Methods[R545,R548–R554],Dust Particle Diagnostic[R555,R556],Langmuir Probe[R549,R557],Laser-Induced Fluorescence[R558,R559],Optical Measurements[R560],Spectroscopy[R557,R561],**Electrodes:** Biconical Cathode[R550,R559,R562,R563],Graphite Cathode[R564],**Experimental Analysis:** Gas Discharge Study (Hydrogen)[R562],Surface Fusion[R563,R565],**Fusion Experiments:** Low Power DD (Cylindrical)[R563],Low Power DD (Spherical)[R547,R559,R563–R565],**Modelling:** Buneman Instability[R566–R568],Modelling[R552],Radiative Model[R562],**Simulation:** Particle-In-Cell[R561,R569],Simulation[R570],**Special Design:** Charge Exchange Thruster[R545],Magnetically Confined Virtual Cathode Fusion Device[R571],Magnetically Shielded Grid[R572],Polywell[R557,R565,R573–R582],Pulsed Reversed-Polarity IEC Device[R583],Reversed Polarity IEC[R566–R568] , *(J: 28, T: 11)*
U14	Nagoyo Univ.	2002	2002	1	**Special Design:** Magnetic Inertial Electrostatic Confinement Fusion[R584] , *(J: 1)*
U15	Univ. of Missouri-Columbia (MU)	2004	2008	6	**Multi-Potential Well Analysis:** Experiments[R585–R587],Theory[R588–R590] , *(J: 4, T: 2)*
U16	Hanyang Univ.	2006	2010	5	**Experimental Analysis:** Gas Discharge Study (Argon)[R591,R592],**Simulation:** Finite-Element-Analysis[R593],Monte-Carlo-Simulation[R591,R592,R594],Simulation (Double-Grid)[R595] , *(J: 2, CP: 3)*
U17	Imperial College	2006	2006	1	**Simulation:** Particle-In-Cell[R596] , *(J: 1)*
U18	Univ. of Maryland, College Park	2006	2019	12	**Application Analysis:** Advanced Space Application[R597],**Classification:** Patent[R598,R599],**Electrodes:** Magnetic Cathode[R600],**Simulation:** Particle-In-Cell[R601–R605],**Special Design:** Continuous Grid Design[R604,R606,R607],Multi-Grid Design[R597,R600,R601,R608] , *(J: 1, CP: 7, RP: 1, PT: 2, T: 1)*
U19	Georgia-Tech	2008	2008	1	**Electrodes:** Water-Cooled Cathode[R609],**Fusion Experiments:** Low Power DD (Spherical)[R609] , *(T: 1)*

U20	Seoul National Univ.	2008	2011	2	**Experimental Analysis:** Gas Discharge Study (Cylindrical)[R610,R611] , *(J: 1, CP: 1)*
U21	Longwood Univ.	2009	2009	1	**Fusion Experiments:** Low Power DD (Spherical)[R612] , *(T: 1)*
U22	Benha Univ.	2010	2017	3	**Experimental Analysis:** Gas Discharge Study (Cylindrical)[R613–R615] , *(J: 3)*
U23	National Research Nuclear Univ. Mephi	2010	2017	3	**Special Design:** Plasma Diode Configuration[R616–R618] , *(J: 3)*
U24	Robert Gordon Univ.	2010	2011	2	**Application Analysis:** Advanced Space Application[R619,R620],Fuel Encapsulation[R620] , *(J: 2)*
U25	Tokai Univ.	2010	2015	4	**Diagnostics:** Spectroscopy[R621,R622],**Electrodes:** Cathode Optimization[R623],**Fusion Experiments:** Low Power DD (Spherical)[R623,R624] , *(J: 2, CP: 2)*
U26	Gazi-Univ.	2011	2016	6	**Modelling:** Modelling[R625–R630] , *(J: 6)*
U27	Shahid Beheshti Univ.	2011	2016	2	**Application Analysis:** Neutron Activation Analysis[R631],**Experimental Analysis:** Jet Mode Analysis[R632] , *(J: 2)*
U28	Univ. of Stuttgart	2011	2022	23	**Application Analysis:** IEC Thruster[R633–R636],Surface Treatment[R637],**Classification:** Overview[R638–R640],**Experimental Analysis:** Jet Mode Analysis[R641–R652],Jet Mode with Magnetic Nozzle[R653,R654],**Modelling:** Modelling[R655] , *(J: 4, CP: 18, T: 1)*
U29	Iran Univ. of Science and Technology	2012	2013	2	**Application Analysis:** Surface Irradiation and Implantation[R656,R657] , *(J: 2)*
U30	Armirkabir Univ.	2013	2019	6	**Fusion Experiments:** High Power DD (Spherical)[R658],**Modelling:** Scaling Laws[R659],**Multi-Potential Well Analysis:** Theory[R660],**Special Design:** Pulsed Magnet Improvement[R661–R663] , *(J: 6)*
U31	Eindhoven Univ. of Technology (TUe)	2013	2023	14	**Application Analysis:** Surface Irradiation and Implantation[R664],**Diagnostics:** Doppler Shift Methods[R665,R666],Laser-Induced Fluorescence[R667],Passive Spectroscopy[R668],Probe Analysis[R665],**Electrodes:** Cathode Optimization[R669],**Experimental Analysis:** Jet Mode Analysis[R670],Photon Radiation[R671],**Fusion Experiments:** Medium Power DD (Spherical)[R664,R667,R669,R671–R673],**Modelling:** Modelling[R673,R674],**Others:** Building Instructions[R675],**Simulation:** COMSOL[R676],Particle-In-Cell[R677] , *(J: 1, RP: 1, T: 12)*
U32	Queen‘s Univ.	2013	2013	1	**Simulation:** Particle-In-Cell[R678] , *(T: 1)*
U33	Hiroshima Univ.	2014	2014	1	**Diagnostics:** Laser-Induced Fluorescence[R679] , *(J: 1)*
U34	Islamic Azad Univ.	2014	2020	2	**Simulation:** Neural Networks[R680],**Special Design:** Polywell[R681] , *(J: 2)*
U35	Medical Univ. of South Carolina	2014	2015	2	**Classification:** Patent[R682],**Special Design:** Planar Geometry Design[R683] , *(CP: 1, PT: 1)*
U36	Univ. of Tokushima	2014	2014	1	**Application Analysis:** Neutron Dynamic Therapy[R684] , *(J: 1)*
U37	Birla Institute of Technology	2015	2015	1	**Special Design:** Compressed Ion Beam (Calculation)[R685] , *(J: 1)*
U38	Univ. of Washington	2015	2015	1	**Experimental Analysis:** Jet Mode Analysis[R686] , *(T: 1)*
U39	Worcester Polytechnic Institute	2015	2015	1	**Fusion Experiments:** Low Power DD (Spherical)[R687] , *(T: 1)*
U40	Comenius Univ.	2016	2016	1	**Fusion Experiments:** Low Power DD (Spherical)[R688],**Others:** Educational[R688] , *(J: 1)*
U41	Dalian Univ. of Technology	2016	2019	2	**Classification:** Patent[R689],**Simulation:** Numerical[R690] , *(J: 1, PT: 1)*

U42	Houghton College	2016	2020	2	**Fusion Experiments:** Low Power DD (Spherical)[R691],**Others:** Educational[R692] , *(T: 2)*
U43	TU Dresden	2016	2016	1	**Electrodes:** Additive Manufacturing[R693] , *(CP: 1)*
U44	Kermanshah Univ. of Technology	2017	2017	1	**Application Analysis:** Neutron Activation Analysis[R694],**Simulation:** Neural Networks[R694] , *(J: 1)*
U45	Trakya Univ.	2017	2017	1	**Modelling:** Modelling[R695] , *(J: 1)*
U46	Univ. of Kentucky	2017	2019	3	**Application Analysis:** Electric Space Propulsion[R696, R697],**Classification:** Patent[R698],**Experimental Analysis:** Jet Mode Analysis[R696, R697] , *(CP: 2, PT: 1)*
U47	Univ. of Mazadaran	2017	2018	2	**Modelling:** Semi-Analytical Calculations (Density, NPR)[R699, R700] , *(J: 2)*
U48	Purdue Univ.	2018	2018	1	**Fusion Experiments:** High Power DD (Cylindrical)[R701] , *(J: 1)*
U49	Univ. of Liverpool	2018	2021	4	**Experimental Analysis:** Gas Discharge With Transparent Electrodes[R702–R705] , *(J: 3, T: 1)*
U50	Nihon Univ.	2019	2019	1	**Assisted Discharge:** External Magnetic Field[R706],**Fusion Experiments:** Medium Power DD (Linear)[R706] , *(CP: 1)*
U51	Portland State Univ.	2019	2022	3	**Diagnostics:** Nuclear Fusion Detection Methods[R707],**Fusion Experiments:** Low Power DD (Spherical)[R708],**Modelling:** Modelling[R708, R709] , *(J: 1, CP: 1, T: 1)*
U52	Univ. of Denmark	2020	2022	2	**Electrodes:** Additive Manufacturing[R710],**Fusion Experiments:** Medium Power DD (Cylindrical)[R710, R711],Medium Power DD (Spherical)[R710, R711],**Others:** Educational[R711] , *(J: 2)*
U53	Univ. of Isfahan	2021	2023	3	**Modelling:** He3 Fusion Interactions[R712],Radiation Hazard Analysis[R713],**Simulation:** Particle-In-Cell[R714] , *(J: 3)*
U54	Univ. of Oregon	2021	2021	1	**Simulation:** Particle-In-Cell[R715] , *(T: 1)*
U55	Univ. of Bristol	2022	2023	2	**Experimental Analysis:** Surface Fusion[R716],**Fusion Experiments:** Low Power DD (Spherical)[R717] , *(J: 1, CP: 1)*
U56	Assiut Univ.	2023	2023	1	**Fusion Experiments:** High Power DD (Spherical)[R718],**Modelling:** Radiation Shielding[R718] , *(J: 1)*
R1	Los Alamos National Laboratory	1959	2009	44	**Classification:** Introduction[R719],Overview[R720],Report[R721],**Fusion Experiments:** High Power DD (Spherical)[R722–R725],Medium Power DD (Spherical)[R726],**Modelling:** Atomic Processes[R726],Brillouin Limit[R727–R729],Counterstreaming Ion Instability[R730],Scaling Laws[R731],Space Charge Limit[R732],Streaming Instabilities[R733],**Multi-Potential Well Analysis:** Theory + Experiments[R734],**Others:** Additional[R735–R739],**Simulation:** Fokker-Planck[R740],**Special Design:** Penning Fusion Device[R729, R740–R750],Periodically Oscillating Plasma Sphere[R747, R751–R761],Pulsed Modulator[R762] , *(J: 24, CP: 17, RP: 3)*
R2	Kharkov Institute of Physics and Technology	1962	2001	14	**Classification:** History Review[R763, R764],**Others:** Additional[R765–R772],**Special Design:** Electromagnetic Trap[R773–R776] , *(J: 11, CP: 1, RP: 2)*
R3	CEA Grenoble Center	1975	1975	1	**Classification:** Overview[R777] , *(J: 1)*
R4	Idaho National Laboratory	1992	1997	9	**Application Analysis:** Neutron Capture Therapy[R778],**Classification:** Review[R779],**Fusion Experiments:** High Power DD (Spherical)[R780],Medium Power DD (Spherical)[R781],**Multi-Potential Well Analysis:** Experiments[R782],**Special Design:** Magnetic Electrostatic Plasma Confinement[R783, R784],Polywell[R783, R785, R786] , *(BC: 2, J: 5, CP: 2)*

R5	Lawrence Livermore National Laboratory	1995	1995	1	**Modelling:** Scaling Laws[R787] , *(J: 1)*
R6	Argonne National Laboratory	2000	2000	1	**Special Design:** Converging Beam Source Design[R788] , *(CP: 1)*
R7	Kurchatov Institute	2001	2001	1	**Classification:** History Review[R789] , *(J: 1)*
R8	Brookhaven National Laboratory	2002	2002	1	**Simulation:** Particle-In-Cell[R790] , *(J: 1)*
R9	Joint Institute for High Temperatures	2003	2023	29	**Simulation:** Particle-In-Cell[R791],**Special Design:** Nanosecond Vacuum Discharge[R792–R817],Periodically Oscillating Plasma Sphere[R818,R819] , *(J: 22, CP: 7)*
R10	Marshal Space Flight Center	2004	2004	2	**Experimental Analysis:** Electron Density Measurement[R820,R821],**Fusion Experiments:** Medium Power DD (Spherical)[R820] , *(J: 2)*
R11	Naval Surface Warfare Center	2008	2008	1	**Application Analysis:** Study on Energy Technology[R822] , *(CP: 1)*
R12	Nuclear Science and Technology Institute	2012	2023	5	**Application Analysis:** Neutron Radiography[R823],**Diagnostics:** Langmuir Probe[R824],**Fusion Experiments:** High Power DD (Spherical)[R825,R826],**Simulation:** Neural Networks[R826],**Special Design:** Polywell[R827] , *(J: 5)*
R13	Saraykoy Nuclear Research and Training Center	2013	2018	3	**Fusion Experiments:** High Power DD (Cylindrical)[R828],Low Power DD (Spherical)[R829,R830] , *(J: 2, T: 1)*
R14	Centre of Plasma Physics-Institute for Plasma Research	2014	2022	10	**Application Analysis:** Surface Irradiation and Implantation[R831],**Classification:** Introduction[R832],**Experimental Analysis:** Gas Discharge Study (Cylindrical)[R833],**Fusion Experiments:** High Power DD (Cylindrical)[R834–R837],**Multi-Potential Well Analysis:** Experiments[R838,R839],Theory[R839],**Special Design:** Pulsed Power Supply Design[R840] , *(J: 8, CP: 1, T: 1)*
R15	Comisión Nacional de Energía Atómica	2015	2015	1	**Application Analysis:** Boron Neutron Capture Therapy[R841],**Modelling:** Modelling[R841] , *(J: 1)*
R16	Egyptian Atomic Energy	2017	2021	5	**Experimental Analysis:** Gas Discharge Study[R842,R843],Low Power Demonstrator[R844,R845],Low Power Demonstrator (Pulsed)[R846] , *(J: 5)*
R17	Kutateladze Institute of Thermophysics	2018	2018	1	**Experimental Analysis:** Graphene Doped Discharge[R847] , *(J: 1)*
R18	Research Center Rez	2020	2020	1	**Fusion Experiments:** High Power DD (Cylindrical)[R848],High Power DD (Linear)[R848] , *(CP: 1)*
R19	Bhabba Atomic Research Centre	2021	2021	1	**Fusion Experiments:** Low Power DD (Spherical)[R849] , *(J: 1)*
R20	Institute for Plasma Research	2021	2021	1	**Modelling:** Radiation Hazard Analysis[R850] , *(J: 1)*
C1	InterTele Telegraph Farnsworth	1962	1968	12	**Classification:** Patent[R851–R858],Review[R859],**Fusion Experiments:** High Power DD (Beam-Beam)[R860,R861],**Multi-Potential Well Analysis:** Experiments[R862] , *(J: 3, CP: 1, PT: 8)*
C2	Science Application Inc (SAIC)	1982	1982	1	**Simulation:** Simulation (External Ion Gun)[R863] , *(J: 1)*

C3	Stone and Webster Engineering Corporation PO	1984	1984	1	**Multi-Potential Well Analysis:** Theory[R864] ,**Simulation:** Numerical[R864] , *(J: 1)*
C4	Energy Matter Conversion Corporation (EMC)	1985	2015	55	**Application Analysis:** Advanced Space Application[R865–R874] ,Application Analysis[R875–R877] ,Power Plant Design[R878] ,**Classification:** Patent[R879–R888] ,**Others:** Additional[R889–R893] ,**Simulation:** EKXL-Code[R894, R895] ,Simulation[R896] ,**Special Design:** Polywell[R894, R897–R919] , *(J: 7, CP: 15, RP: 22, PT: 10, T: 1)*
C5	Directed Technologies, Inc	1990	1991	3	**Special Design:** SCIF Device[R920–R922] , *(CP: 3)*
C6	Krall Associates	1991	1995	4	**Special Design:** Polywell[R923–R926] , *(J: 4)*
C7	Flight Unlimited	1993	2012	6	**Application Analysis:** Advanced Space Application[R927–R931] ,**Special Design:** EM Fields to Reduce Nuclear Fusion Input Energy Needs[R932] , *(CP: 5, RP: 1)*
C8	Daimler Chrysler Aerospace	1995	2000	5	**Application Analysis:** Advanced Space Application[R933, R934] ,Application Analysis[R935] ,**Special Design:** Commercial High Power DD[R936, R937] , *(J: 1, CP: 4)*
C9	Rockford Technology Associates	1995	1995	3	**Application Analysis:** Application Analysis[R938, R939] ,Commercialization[R940] , *(J: 1, RP: 2)*
C10	NPL Associates	1999	2000	3	**Application Analysis:** Advanced Space Application[R941–R943] , *(J: 1, CP: 1, RP: 1)*
C11	Hitachi	2000	2000	1	**Classification:** Patent[R944] , *(PT: 1)*
C12	NSD Fusion GmbH/Daimler Aerospace	2002	2008	7	**Classification:** Patent[R945–R951] , *(PT: 7)*
C13	Starfire Industries	2002	2005	2	**Classification:** Patent[R952, R953] , *(PT: 2)*
C14	Convergent Scientific Inc	2008	2018	5	**Classification:** Patent[R954–R957] ,**Special Design:** Polywell[R954–R958] , *(J: 1, PT: 4)*
C15	NSD Gradel Fusion	2009	2017	2	**Classification:** Patent[R959] ,**Special Design:** Commercial Linear High Power DD[R960] , *(CP: 1, PT: 1)*
C16	FP Generation	2010	2010	1	**Classification:** Patent[R961] , *(PT: 1)*
C17	Fusortek	2010	2013	2	**Classification:** Patent[R962] ,**Special Design:** Spin Polarized Fusion[R963] , *(CP: 1, PT: 1)*
C18	Progressive Fusion Solutions	2010	2018	4	**Classification:** Patent[R964–R966] ,**Special Design:** Polywell[R964–R967] , *(J: 1, PT: 3)*
C19	Asti Corp	2015	2015	1	**Classification:** Patent[R968] , *(PT: 1)*
C20	Apollo Fusion Inc	2016	2016	1	**Classification:** Patent[R969] , *(PT: 1)*
C21	Fusion One Corporation	2017	2017	1	**Classification:** Patent[R970] ,**Special Design:** Polywell[R970] , *(PT: 1)*
C22	Gruenwald Laboratories	2017	2020	2	**Application Analysis:** Spin-Off Concept[R971, R972] , *(J: 2)*
C23	Toshiba	2018	2022	3	**Application Analysis:** Neutron Radiography[R973–R975] , *(J: 2, CP: 1)*
C24	Astral Neutronics LTD	2022	2022	1	**Classification:** Patent[R976] , *(PT: 1)*

C25	Pan-China Detection Technology Co Ltd	2022	2022	1	**Classification:** Patent[R977] , *(PT: 1)*

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