Project Title | Company Name | PI | Institution | Cycle
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Development of a modeling toolbox for CORC™-cable performance evaluation | Advanced Conductor Technologies | Danko van der Laan | LBNL | 2019b
Diverter Component Testing | Commonwealth Fusion Systems | Dan Brunner | ORNL | 2019b
Superconducting Cable Quench Detection | Commonwealth Fusion Systems | Brian Sorbom | BNL | 2019b
Alpha Particle Diagnostics Simulation | Commonwealth Fusion Systems | Steve Scott | PPPL | 2019b
Diverter Plasma Simulations | Commonwealth Fusion Systems | Dan Brunner | LLNL | 2019b
Development of a High-CURRENT Solid-State Switch for Magneto-Inertial Fusion | HelicitySpace | Setthivonoe You | PPPL | 2019b
Simulation of Deformation Formation | HelicitySpace | Setthivonoe You | LANL | 2019b
3D MHD Simulations Support for PFM | Hyperjet Fusion Corporation | Franklin Witherspoon | LANL | 2019b
Simulations of Global Stability in the C-2W Device | TAE Technologies, Inc | Sean Dietrich | PPPL | 2019b
Doppler-Free Saturation Spectroscopy (DFSS) for Magnetic and Electric Field Measurements in an FF | TAE Technologies, Inc | Deepak Gupta | ORNL | 2019b
Developing high harmonics fast wave (HHFW) as an enabling electron heating actuator for an FRC plasma | TAE Technologies, Inc | Xiangang Yang | PPPL | 2019b
Baselining a Tritium Accountancy and Safety Case for a Molten Salt Liquid Immersion Fusion Blanket | Commonwealth Fusion Systems | Brandon Sorbom | INL | 2020a
Development of phased-array HHIF antenna and load-resilient matching network for the C-2W FRC | TAE Technologies, Inc | Xiaoyang Yang | ORNL | 2020a
Conceptual design of a trident pellet injector for the ST40 spherical tokamak | Tokamak Energy Inc. | David Wilson | ORNL | 2020a
SPARC 3D Field Physics and Support of the Non-Axisymmetric Coil Assessment | Commonwealth Fusion Systems | Alex Creely | PPPL | 2020a
Advanced Manufacturing Workflows For Tokamak Internal Components | Commonwealth Fusion Systems | Brandon Sorbom | ORNL | 2020a
Tungsten Engineered Feed Stock for PFCs | Gamma Alloys, Inc | Mihic Peabody | ORNL | 2020a
General Fusion – Advanced Stability Analysis for Magnetized Target Fusion Engineering | General Fusion Corp. | Aaron Fridle | PPPL | 2020a
Investigating microstructure characteristics of next step tokamak components across a range of aspect ratios | Tokamak Energy, Inc | Steven McNamara | PPPL | 2020a
Development of an RF Antenna to start-up and sustain a fusion plasma in a spherical tokamak | Tokamak Energy, Inc | Vladimir Shvechenko | ORNL | 2020a
General Fusion – Ion Temperature Diagnostic Improvement | General Fusion Corp. | Akbar Rohlollahi | ORNL | 2020b
Time-Dependent Boundary Modeling to Inform Design of SPARC Diagnostic and Actuators | Commonwealth Fusion Systems | Alex Creely | ORNL | 2020b
Magnetic Field Vector Measurements Using Doppler-Free Saturation Spectroscopy | Princeton Fusion Systems, LLC | Charles Swanson | ORNL | 2020b
Staged-Z pinching with HIPRA and CHICAGO codes | Magneto-Inertial Fusion Technologies, Inc | Haluz Kraman | LLNL | 2020b
XGIC predictions of Scrape of Layer width in present and future high field spherical tokamaks | Tokamak Energy, Inc. | Michele Romanelli | PPPL | 2020b
Characterization and Qualification of X12B Alloy for Additive Manufacturing of Fusion Components | Type One Energy Group, Inc | Randy Volberg | ORNL | 2020b
Nuclides characterization and characterization of transition metal hydrides for radiation shielding in tokamak devices | Tokamak Energy, Inc | Larry Davis | LANL | 2020b
Performance Testing of Low Resistance Deformable HTS joints for large segmented Magnets | General Atomics | Zbigniew Pilec | BNL | 2021a
Simulation of the Helicity Drive Magneto-Inertial Fusion Concept | HelicitySpace | Setthivonoe You | LANL | 2021a
Improving Plasma Control Capabilities in Magnetically-Confined Tokamak Systems with Transformer | Microsoft Corp. | Alexey Syvatkovskiy | PPPL | 2021a
Extending Operational Boundaries in the Advanced FRC | TAE Technologies, Inc | Sean Dietrich | PPPL | 2021a
Phase Diagram of Li-LiOH-D(T)_2 Mixtures and Implications for Tritium Retention and Extraction | Renaissance Americas Inc | Francesco Volpe | SRNL | 2021a
Informing Layout and Performance Requirements for SPARC Massive Gas Injection | Commonwealth Fusion Systems | Matthew Reinke | PPPL | 2021a
Active Redox Control of Molten Salts for Fusion Blankets | Commonwealth Fusion Systems | Brandon Sorbom | SNL | 2021a
K-ray Diagnostic for C-2W FT Plasma | TAE Technologies, Inc | Deepak Gupta | LANL | 2021a
Neutron Handskake for Fusion Materials | Commonwealth Fusion Systems | Brandon Sorbom | SNL | 2021b
Magnetic Pumps for Molten Salt Fusion Devices | Commonwealth Fusion Systems | Brandon Sorbom | ORNL | 2021b
High Heat Flux Exposure of PFC Candidate Fine-Grain Dispersion-Strengthened Tungsten Materials | EnergyDriven Technologies, LLC | Zachariah Koryn | ORNL | 2021b
Mechanical Characterization of PFC Candidate Fine-Grain Dispersion-Strengthened Tungsten Materials | EnergyDriven Technologies, LLC | Zachariah Koryn | ORNL | 2021b
In-Field Performance Testing of a Novel HTS CCC for Practical and Cost-Effective Fusion Magnet Systems | General Atomics | Zbigniew Pilec | BNL | 2021b
Thermocline fusion verification of Staged-Z pinch fusion on a 0.5 MA LTD pulsed power generator | Magneto-Inertial Fusion Technologies, Inc | Emil Ruskov | LLNL | 2021b
Artificially intelligent optimization of alpha particle transport in stellarators | Renaissance Americas Inc | Christopher Smiet | PPPL | 2021b
Extension of MCNP® Mesh Based Weight Windows to Support Unstructured Mesh Topologies | Silver-Fire Software, Inc | Eugeniy Sotskovsky | LANL | 2021b
Characterization of Turbulent Transport and Confinement in ARC with STEP and CORYDOR | Commonwealth Fusion Systems | Alex Creely | University-UCD | 2022a
Machine learning assisted prediction of tungsten heavy alloy plasma facing component performance | Commonwealth Fusion Systems | Dina Yuriev | University-MIT | 2022a
Assessing ELM mitigation by pellet triggering in SPARC low-collimation discharges | Commonwealth Fusion Systems | Christopher Chrobak | ORNL | 2022a
Agile design workflow for plasma-facing fusion components with coupled thermofluidic and structural analysis | Commonwealth Fusion Systems | Caroline Sorenson | ORNL | 2022a
Fuel Cycle and Tritium Plant Model for Fusion Pilot Plant | Commonwealth Fusion Systems | David Weisberg | SRNL | 2022a
Tritium Fuel Cycle Modelling and Optimization to Enable Fusion Pilot Plant Development | Commonwealth Fusion Systems | Ryan Guerrero | SRNL | 2022a
Beyond Neoclassical Closures for MHD Simulation of General Fusion Devices via Kinetic Monte Carlo | General Fusion Corp. | Colin McNally | ORNL | 2022a
Observing Density Evolution During Merging of Plasmatic Taylor states | Helicity Space Corporation | Setthivonoe You | University-Swarnmore | 2022a
3D modeling of the Staged-Z pinch with the FLASH code | Magneto-Inertial Fusion Technologies, Inc | Emil Ruskov | University-Rochester | 2022a
Hard X-ray imaging and characterization of staged-Z pinch plasmas in order to exclude ion beams as Z-sheets | Magneto-Inertial Fusion Technologies, Inc | Halluz Kraman | University-CallTech | 2022a
Electron density profiles on PFRC with USPR | Princeton Fusion Systems, Inc. | Chris Fisk | University-UCDavis | 2022a
Evaluating RF antenna designs for PFC plasma heating and sustainment | Princeton Fusion Systems, Inc. | Michael Paluszak | PPPL | 2022a
Stabilizing PFC plasmas against macroscopic low-frequency modes | Princeton Fusion Systems, Inc. | Stephanie Thomas | PPPL | 2022a
Performance-structure characterization to improve REBCO Fusion conductor production at SuperPower Inc | Yifei Zhang | University-PSU | 2022a
Development of a High-Flux Inductive Spheromak Gun for FRC Formation via Counter-Helicity Magnet Systems | TAE Technologies, Inc. | Hiroshi Gota | PPPL | 2022a
THz Radiation Generation to Enable Internal Magnetic Field Measurement of Burning Plasmas | TAE Technologies, Inc | Alexeis Necas | University-Rochester | 2022a
FARED – Flowing Lithium's Adsorption and Release Experiment for Deuterium | Tokamak Energy, Inc | Mark Koepke | University-UC | 2022a
Simulation of Direct-Drive Hybrid Using Two Opposed Beams for Inertial Fusion Energy | WWS Inc. | d.b. Xcomer Energy | University-Rochester | 2022a
A modern neutronics-modeling uncertainty methodology towards a future fusion neutronics handbook | Commonwealth Fusion Systems | Corinne Mitchell | ORNL | 2022b
Dioxide Oxide Strengthened Ferritic Steel Wire Feedstock Development for Large-Format Additives | Commonwealth Fusion Systems | Cody Dennett | PNNL | 2022b
Retention of Fusion Plasma Species in PFC Candidate Fine-Grain Dispersion-Strengthened Tungsten | EnergyDriven Technologies LLC | Zachariah Koryn | SNL | 2022b
Simulation of Damping behavior of laser-plasma instabilities in proton fast ion | Princeton Fusion Systems | Focaccia Forgiolini | LANL | 2022b
Model validation of low-density foams wetted with liquid deuterium and tritium for inertial fusion energy | Focused Energy Inc. | Leonard Jarrott | LLNL | 2022b
Machine learning accelerated predictions of power and particle exhaust in a fusion pilot plant | General Atomics | Jonathan Yu | LLNL | 2022b
Determining fast particle behavior in a reactor-relevant Quasi-Axisymmetric stellarator equilibrium | Princeton Stellarators, LLC | Charles Swanson | PPPL | 2022b
Superconducting cable quench detection and recovery | Princeton Stellarators, LLC | Mike Martin | PPPL | 2022b
Evaluation of the effect of coolant purity on the corrosion resistance of Castable Nanostructured Alk | Tokamak Energy Inc | Naomika Mburu | ORNL | 2022b
High-temperature superconducting CORC™ conductors for stellarayer magnet applications | Type One Energy Group, Inc | Paul Harris | ORNL | 2022b