

SUBJECT INDEX

Fusion Science and Technology



American Nuclear Society
Scientific Publications

Volume 64, Numbers 2 and 3
August and September 2013

CITATIONS ARE BY PAGE NUMBER

3Cr-3WV bainitic steel, 449
3-D nuclear analyses, 571, 582

A

Abnormal grain growth, 230
Activated carbon, 538
Activation foil spectrometer, 604
Adsorption, 538
Advanced fusion fuels, 373
Advanced tokamak, 662
Alcator C-Mod, 250, 293, 320
ANSYS, 250, 320
Antenna conditioning, 530
Anti-corrosion coating, 221
ARIES, 340, 427, 449, 675
 SiC/LiPb blanket, 582
Armor erosion, 245
ATTILA 3-D discrete ordinates, 571
Availability, 151

B

Blanket, 211, 427, 615, 631, 636
 first wall, 126
 module, 146, 245, 587
BNCT, 379
Broader Approach, 86

C

CAD, 587
 based transport calculation, 571
 MCNP coupling, 582
Ceramics coating, 211
Chamber technology, 65

Chemical analysis, 533
C-Mod, 320
 divertor, 277
Commissioning test, 288
Compact tokamaks, 493
Computational fluid dynamics, 269
Computational thermodynamics, 65
Conceptual layout, 473
Conduction cooling, 131
Configuration interfaces, 103
Convective-diffusion, 543
Corrosion barrier, 221
Creep, 435
 material, 225
CTH, 498
Cylindrical discharge type fusion
 device, 692

D

DCLL, 651
 blanket, 623
DD, 365
D-D fuel, 96
DEMO, 86, 245, 463, 615, 631
 building schematics, 473
Deuterium extraction, 543
DHe-3, 365
Diagnostic ports, 118
Diagnostics, 118
Direct drive laser fusion, 194
Disruption load analysis, 255
Divertor, 225, 250, 263, 320, 325,
 427
Double containment piping, 351
D-T reactors, 96
Dynamic implication, 255

E

EAST superconducting tokamak, 417
Eddy currents, 498
EFDA, 76
Electromagnetic
 analysis, 680
 forces, 146
Electron
 beam laser, 179
 cyclotron current drive, 505
 cyclotron resonance heating, 505
ELM, 168
 control, 407
 disruptions, 440
Energy conversion, 483
Enhanced heat flux (EHF), 309
Erbium oxide, 211
Excimer, 179

F

Fast wave, 530
Fatigue life, 76
Ferritic-martensitic steel, 221
Fiber-toughening, 230
Field-reversed configuration, 298
Fin array, 315
Finger-type divertor, 670
Finite element analysis, 269
First wall, 76
 and blanket, 455
Flow distribution, 657
Fracture, 435
Fusion, 373
 driven transmutation, 488
 energy, 96

fission hybrid, 493, 521, 592
 materials, 65
 neutron source, 379, 687
 nuclear facility, 463
 power plant, 455
 safety, 340
 FW mock-up, 657

G

Gas driven permeation, 345

H

HCLL, 631
 Heat transfer, 293
 Heating and fueling, 505
 Helium-3, 373
 Helium
 cooled divertor, 282, 670
 cooled finger-type divertor, 315
 inlet, 161
 irradiation, 216
 supply system, 641
 Highly enriched U, 365
 High heat flux, 325, 440
 test, 126, 288
 High heat load test, 641
 High temperature blanket, 599
 H-mode, 407
 Hydrogen, 636
 isotopes monitor, 533
 pellets, 513
 permeation, 211
 Hypervapotron, 269, 309

I

ICRH, 530
 IECF, 692
 IFE, 179
 IFMIF, 533
 EVEDA, 86, 397
 Inertial electrostatic confinement
 (IEC), 365, 373
 In-vessel coils, 136, 168
 Ion beam surface modification, 216
 Isotopic exchange, 538
 ITER, 111, 118, 136, 146, 156, 563,
 587
 blanket module, 555
 central solenoid, 161
 configuration, 103
 diagnostics, 151
 divertor, 237
 test blanket module, 604, 641, 645,
 657

J

Jet impingement, 282, 315
 JT-60SA, 86

K

KrF laser, 194
 Krypton fluoride, 179
 KSTAR, 357, 407

L

Laser inertial fusion energy (LIFE),
 187
 Laser-plasma instabilities, 194
 Layout and building, 103
 Leakage, 351
 Licensing, 111
 Linear IFMIF prototype accelerator,
 397
 LIPAc, 397
 Liquid metal, 623
 Lithium
 lead, 599
 target facility, 397
 wall conditioning, 417
 Loss of flow accident, 340

M

Magnets structural analysis, 680
 MARS, 645
 Mass-transfer-coefficient, 549
 MCNP, 587, 692
 Medical
 application, 379
 isotopes, 365
 MELCOR, 340
 Metal injection molding, 203
 MFE and IFE, 96
 MHD reconstruction, 498
 Module, 615
 Molten salt blanket, 521
 Monte Carlo, 563, 687
 method, 599

N

Neutron
 irradiation, 65
 sources, 493
 Neutronic analysis, 687
 Neutronics, 555, 563
 Niobium tin magnets, 76
 Non-inductive heating and current
 drive, 530
 NSTX Upgrade, 255
 Nuclear heating, 555

O

Outer divertor, 293

P

Panel, 131
 Passive plate, 255
 Pb17Li droplet, 543, 549
 PbLi, 636
 Pellet fueling, 525
 Pellet injection, 513
 Permeation, 303, 636
 PFC modeling, 225
 Plasma
 driven permeation, 345
 facing components, 156, 263, 269,
 277, 288, 303
 facing material, 237, 245, 440
 fueling, 513, 525
 materials interactions, 65
 surface interactions, 237, 277, 345
 Polycarbonate, 298
 Porous media, 325
 Powder metallurgy, 203
 Power core configuration, 455
 Power cycle, 483
 Power plant, 427
 Pulse length, 76
 Pulsed DEMO, 76

R

RAMI, 151
 Reliability, 351
 Ribbed structure, 675
 Roadmap, 463

S

Safety, 111
 Shield block, 126
 Short half-lives, 604
 Shutdown dose rate, 563
 SiC, 623
 Single crystal tungsten, 216
 Steady state operation, 407
 Stellarator, 387
 Stress distribution, 675
 Structural analysis, 293, 309
 Superconducting magnet, 161, 407
 Supercritical CO₂ Brayton, 483
 Supersonic molecular beam injection,
 417
 Systems analysis, 488, 687
 Systems code, 76, 645

T

Test blanket, 615
 Thermal
 analysis, 250
 conductivity ratio, 670
 contact, 131
 shield, 131

Thorium-uranium, 592
Thorium utilization, 521
TJ-II stellarator, 513
Tokamak, 488
 pilot plant, 662
 power plant, 440
Tritium, 538, 543, 549, 636
 breeding, 592
 ratio, 582, 599
 requirements, 582
diffusion, 303
dosimetry, 333
implantation, 303
in environment, 333
monitoring, 333

 permeation, 631, 651
 processing, 187
Tungsten
 and tungsten alloys, 203
 composites, 230
 divertor, 435
Twin screw extrusion, 525

V

Vacuum vessel, 298, 675
 activation, 449
 requirements, 449
 shielding, 555

Vertical stability, 168
 coils, 136

W

Water cooling system, 357
Water deterioration, 333
Wendelstein 7-X stellarator, 263, 387,
 505