

SUBJECT INDEX

Fusion Science and Technology



American Nuclear Society
Scientific Publications

Volume 67, Numbers 2 and 3
March and April 2015

CITATIONS ARE BY PAGE NUMBER

A

Accident analysis, 432
Active Gas Handling System, 571
Adsorbent, 499
Agricultural crops, 479
Air effect, 408
Apparent solubility, 503
Applied research, 666
Atmospheric pressure plasma, 650
Atomic Energy of Canada Limited, 588

B

Beta-induced X-ray spectrometry, 274,
507
Breakthrough concentration, 567

C

CaF₂ solid scintillator, 404
Calibration, 357
Calorimeter, 390
Carbon, 245
Catalytic
 isotope exchange, 270
 membrane reactor, 463
 package, 270
Catalyzed molecular sieves, 490
Ceramics, 412, 662
Chemical speciation, 627
Chromium, 519
Combined electrolysis and catalytic
 exchange, 258
Combustion water purification, 623

Concrete, 339
Confinement, 278
Contamination, 596
 measurement, 631
Corrosion, 511, 519
Cryodistillation, 451
Cryogenic
 adsorption, 495
 molecular sieve bed adsorber, 567

D

Damage, 316
DEMO fuel cycle, 531
Detection limit comparison, 282
Detritiation, 312, 588
 of atmosphere, 262, 278
 of water, 451, 463, 677
 system, 365
Displacement chromatography, 584
Dual-temperature, 332

E

Eco-physiology, 447
Electrically switched ion exchange, 608
Electrochemical hydrogen pump, 600
Enrichment, 592
Environmental
 impact, 324
 modeling, 343, 479
 monitoring, 527
 samples, 250

F

F82H, 379, 467
Field measurements, 254
First wall, 551
Flow-cell detector, 404
Fluidized state, 658
Fuel cycle, 241, 400
Fuel storage bay, 296
Fundamental science, 666
Fusion neutron source, 241

G

Gas analysis, 547
Gear type, 499
Glow discharge, 471
Grassland ecosystem, 447

H

Helium, 580
 target, 535
High pressure, 612
Highly tritiated water, 312
 processing, 483
Hydride, 371, 375, 435
Hydrogen, 245
 cryogenic distillation, 266
 desorption simulation, 394
 diffusion coefficient, 379
 isotopes, 266, 439, 471, 495, 612
 exchange, 487
 retention behavior, 551
 separation, 677

isotopologues, 555, 559
permeability, 459
permeation, 511, 658
 behavior, 467
uptake, 511

I

INCONEL 625, 428
Inert blanketing, 416
Inertial guidance vacuum calorimeters,
 282
Infrared spectroscopy, 357
In-situ observation, 515
Intense tritium source of (anti)neutrino,
 535
Interim storage, 290
Inter-laboratory exercises, 250
Ion separation, 608
Ionisation chamber, 523
Isotope
 effects, 471
 laboratory operation, 635
 separation, 258, 584
Isotopic
 exchange, 563
 separation, 643
ITER, 627
 storage and delivery system, 671
 bed design, 671

J

Joint European Torus, 451, 571

K

KAERI, 304

L

Lanthanum nickel aluminum, 580
Licensing, 635
Linear plasma, 619
Liquid hydrogen, 357
Liquid phase catalytic exchange, 286
Liquid scintillation counting, 623
Lithium-6, 584
Lithium-lead, 658
Lithium titanate, 386
Longitudinal dispersion coefficient, 439

M

Mechanical properties, 459
Mesoporous materials, 592
Metal hydride, 416
 bed, 400
Microwave heating, 604

Model, 286, 435
Molten salt reactor, 681
Multi-purpose plant, 258

N

Nafion, 443
Neutrino
 magnetic moment, 535
 mass, 274
Nickel hexacyanoferrate, 608
Nondestructive assay, 390
Nuclear fission and fusion, 304

O

Optical coating, 316
Organically bound tritium, 250, 447,
 479, 623

P

Package performance, 266
Packed-bed adsorption column, 439
Paint, 320
 hydrophobic, 339
Penetration, 320
Percolation, 382
Permeability, 647, 662
Permeation, 412, 475, 576, 681
 process, 262
Permeators, 328
Plasma-wall interaction, 278
Plastic scintillator, 654
Platinized molecular sieve bed, 312
Platinized zeolite catalyst, 483
Platinum microreactor, 328
Preheating, 503
Pressure loss, 499
Processing, 571
Proportional gas counter, 408, 523
Proton conducting oxide, 600
Proton exchange membrane, 443, 491
Pump oil, 596
Purification system, 324

Q

Quadrupole mass spectrometer, 650

R

Radiation
 damage, 361
 exposure, 443
 protection ordinance, 635
Radioactive
 gases, 527
 waste, 527

Radiogenic ³He, 459
Raman spectroscopy, 547, 555, 559,
 612

RAMI, 531

Reactive vacancy solution theory, 495
Reduced-activation ferritic/martensitic
 steel, 361
Refurbishment and dismantling, 631
Regeneration, 604
Reliability block diagram, 531
Research and development activities,
 671

S

Scavenging, 254
Sensitivity study, 463
Sensors, 639
SFBR, 300
Silicon drift detector, 507
Simulation code, 332
Sodium hydrolysis, 300
Software, 270
Soil, 382
Source term, 627
Spallation source, 324
Sputtering, 515
Stainless steel, 475
 type 316, 615
Structure analysis, 647
Synthetic zeolite, 604
System test, 336

T

Technical document summary, 343
Test blanket module, 576
Test blanket system, 543
TEXTOR plasma, 619
Thermal
 cycling absorption process, 643
 desorption, 245
 stratification, 296
TiN + TiC + TiN film, 647
Tokamak exhaust processing, 308
Trap, 455
Trickle bed reactor, 328
Tritiated waste, 290
 characterization, 631
Tritiated water (HTO), 254, 487, 491,
 519, 563, 592
 exchange rate, 349
 long-term atmospheric release, 353
 spatial distribution in soil depth, 353
 washout coefficient, 349
 washout model, 349
Tritium, 286, 296, 300, 316, 320, 339,
 371, 375, 379, 400, 412,
 416, 420, 424, 428, 455,
 475, 563, 576, 580, 596,
 639, 643, 681

accident, 343
accountancy, 365, 420, 424, 547
analysis, 639
bed, 662
breeder, 386
calculation code, 241
calorimetry, 282
compatibility, 539
concentration, 336
durability, 365
exposure, 491
extraction, 262, 543, 567
facility, 308
gas analysis, 555
handling, 432, 588
inventory, 420, 424
measurement, 654
monitoring, 408, 507, 523, 600
operation, 539
plant, 308
processing, 543

recovery, 650
release, 615
 properties, 386
removal facility, 677
retention, 361
storage, 371
technologies, 304, 666
trapping, 619
 water monitor, 404
Tritium Laboratory Karlsruhe, 274
Tungsten, 503, 515
Turbomolecular pump, 539

U

Under vacuum, 615
Unsaturated soil, 353
Uranium, 394
U.S. Department of Energy, 432

V

Vacuum plasma spraying
 tungsten, 551
Vacuum vessel, 428

W

Waste, 455
 classification, 290
 management, 390
Water-hydrogen, 332
 isotope exchange, 483
Weak current, 336

Z

Zirconium cobalt, 394, 435