

Publications Yong Dai

95. T. Zhang, C. Vieh, K. Wang, Y. Dai, *Irradiation-induced evolution of mechanical properties and microstructure of Eurofer 97*, J. Nucl. Mater. (2013),
<http://dx.doi.org/10.1016/j.jnucmat.2013.12.007>.
94. V. Krsjak, S.H. Wei, S. Antusch, Y. Dai, *Mechanical properties of tungsten in the transition temperature range*, J. Nucl. Mater. (2013),
<http://dx.doi.org/10.1016/j.jnucmat.2013.11.019>
93. K. Sato, S. Kawamoto, K. Ikemura, V. Krsjak, C. Vieh, R. Brun, Q. Xu, T. Yoshiie, Y. Dai, *Positron annihilation spectroscopy of ferritic/martensitic steels F82H and T91 irradiated with protons and neutrons at PSI*, Journal of Nuclear Materials (2013),
<http://dx.doi.org/10.1016/j.jnucmat.2013.09.009>.
92. Yu-Wei You, Xiang-Shan Kong, Q.F. Fang, C.S. Liu, J.L. Chen, G.-N. Luo, Y. Dai, *A first-principles study on hydrogen behavior in helium-implanted tungsten and molybdenum*, J. Nucl. Mater. (2013), <http://dx.doi.org/10.1016/j.jnucmat.2013.11.019>
91. Q. Huang, N. Baluc, Y. Dai, et. al, *Recent progress of R&D activities on reduced activation ferritic/martensitic steels*, Journal of Nuclear Materials **442** (2013) 52-58.
<http://dx.doi.org/10.1016/j.jnucmat.2012.12.039>.
90. R Dressler, M Ayrakov, D Bemmerer, M Bunka, Y Dai, C Lederer, J Fallis, A StJ Murphy, M Pignatari, D Schumann, T Stora, T Stowasser, F-K Thielemann and P J Woods, ⁴⁴Ti, ²⁶Al and ⁵³Mn samples for nuclear astrophysics: the needs, the possibilities and the sources, JOURNAL OF PHYSICS G: NUCLEAR AND PARTICLE PHYSICS **39** (2012) 105201.
[doi:10.1088/0954-3899/39/10/105201](https://doi.org/10.1088/0954-3899/39/10/105201).
89. Y. Dai, W. Gao, T. Zhang, E. Platacis, S. Heinitz, K. Thomsen, *A comparative study on the compatibility of liquid lead–gold eutectic and liquid lead–bismuth eutectic with T91 and SS 316LN steels*, Journal of Nuclear Materials **431** (2012) 113–119.
<http://dx.doi.org/10.1016/j.jnucmat.2012.04.015>.
88. S. Saito, K. Kikuchi, D. Hamaguchi, K. Usami, S. Endo, K. Ono, H. Matsui, M. Kawai, Y. Dai, *Tensile mechanical properties of a stainless steel irradiated up to 19 dpa in the Swiss spallation neutron source*, Journal of Nuclear Materials **431** (2012) 44–51.
[doi:10.1016/j.jnucmat.2011.11.028](https://doi.org/10.1016/j.jnucmat.2011.11.028).
87. B. Long, Y. Dai, N. Baluc, *Investigation of liquid LBE embrittlement effects on irradiated ferritic/martensitic steels by slow-strain-rate tensile tests*, Journal of Nuclear Materials **431** (2012) 85–90. [doi:10.1016/j.jnucmat.2011.11.036](https://doi.org/10.1016/j.jnucmat.2011.11.036)
86. Y. Dai, R. Brun, W. Gao, K. Geissmann, S. Hahl, H. Hou, Y. Huang, H.P. Linder, B. Long, A. Spahr, P. Vontobel, W. Wagner, H.L. Wang, L. Zanini, *The fourth SINQ Target Irradiation Program, STIP-IV*, Journal of Nuclear Materials **431** (2012) 2–9.
[doi:10.1016/j.jnucmat.2011.11.004](https://doi.org/10.1016/j.jnucmat.2011.11.004)
85. Y. Dai, V. Boutellier, D. Gavillet, H. Glasbrenner, A. Weisenburger, W. Wagner, *FeCrAlY and TiN coatings on T91 steel after irradiation with 72 MeV protons in flowing LBE*, Journal of Nuclear Materials **431** (2012) 66–76. [doi:10.1016/j.jnucmat.2011.11.006](https://doi.org/10.1016/j.jnucmat.2011.11.006).
84. K. Sato, Q. Xu, T. Yoshiie, Y. Dai, K. Kikuchi, *Positron annihilation lifetime measurements of austenitic stainless and ferritic/martensitic steels irradiated in the SINQ target irradiation program*, Journal of Nuclear Materials **431** (2012) 52–56.
[doi:10.1016/j.jnucmat.2011.11.015](https://doi.org/10.1016/j.jnucmat.2011.11.015).

83. **Y. Dai**, G. R. Odette and T. Yamamoto, Chapter 1.06: *The Effects of Helium in Irradiated Structural Alloys*, in “Comprehensive Nuclear Materials”, ed. by R.J.M. Konings, Elsevier Ltd, 2012, pp 141-193.
82. Lei Peng, **Yong Dai**, *Helium-induced hardening effect in ferritic/martensitic steels F82H and Optimax-A irradiated in a mixed spectrum of high energy protons and spallation neutrons*, Journal of Nuclear Materials 417 (2011) 996.
81. P. Hosemann, E. Stergar, L. Peng, **Y. Dai**, S.A. Maloy, M.A. Pouchon, K. Shiba, D. Hamaguchi , H. Leitner, *Macro and microscale mechanical testing and local electrode atom probe measurements of STIP irradiated F82H, Fe–8Cr ODS and Fe–8Cr–2W ODS*, Journal of Nuclear Materials 417 (2011) 211.
80. S.A. Maloy, T.J. Romero, P. Hosemann, M.B. Toloczko, **Y. Dai**, *Shear punch testing of candidate reactor materials after irradiation in fast reactors and spallation environments*, Journal of Nuclear Materials 417 (2011) 1005.
79. **Y. Dai**, J. Henry, Z. Tong, X. Averty, J. Malaplate, B. Long, *Neutron/proton irradiation and He effects on the microstructure and mechanical properties of ferritic/martensitic steels T91 and EM10*, Journal of Nuclear Materials 415 (2011) 306–310.
78. P. Hosemann, **Y. Dai**, E. Stergar, H. Leitner, E. Olivas, A.T. Nelson, S.A. Maloy, Large and small scale materials testing of HAT-9 irradiated in the STIP irradiation program, Experimental Mechanics 51 (2011) 1095.
77. S. Saito, K. Kikuchi, D. Hamaguchi, K. Usami, A. Ishikawa, Y. Nishino, S. Endo, M. Kawai, **Y. Dai**, *Proton irradiation effects on tensile and bend-fatigue properties of welded F82H specimens*, Journal of Nuclear Materials 398 (2010) 49.
76. Z. Tong, **Y. Dai**, *The microstructure and tensile properties of ferritic/martensitic steels T91, Eurofer-97 and F82H irradiated up to 20 dpa in STIP-III*, Journal of Nuclear Materials 398 (2010) 43.
75. **Yong Dai**, Werner Wagner, *Materials researches at the Paul Scherrer Institute for developing high power spallation targets*, Journal of Nuclear Materials 389 (2009) 288..
74. J. Henry, X. Averty, **Y. Dai**, J.P. Pizzanelli, J.J. Espinas, *Tensile properties of ODS-14%Cr ferritic alloy irradiated in a spallation environment*, Journal of Nuclear Materials 386-388 (2009) 345.
73. B.M. Oliver, **Y. Dai**, *Helium and hydrogen measurements on pure materials irradiated in SINQ Target 4*, Journal of Nuclear Materials 386-388 (2009) 383.
72. Z. Tong, **Y. Dai**, *Tensile properties of the ferritic martensitic steel F82H after irradiation in a spallation target*, Journal of Nuclear Materials 385 (2009) 258.
71. Robin Schäublin, Jean Henry, **Yong Dai**, *Helium and point defect accumulation: (i) microstructure and mechanical behaviour*, C. R. Physique 9 (2008) 389.
70. **Y. Dai**, B. Long, Z.F. Tong, *Tensile properties of ferritic/martensitic steels irradiated in STIP-I*, Journal of Nuclear Materials 377 (2008) 115.
69. **Y. Dai**, G.W. Egeland, B. Long, *Tensile properties of EC316LN irradiated in SINQ to 20 dpa*, Journal of Nuclear Materials 377 (2008) 109.
68. B. Long, Z. Tong, F. Gröschel, **Y. Dai**, *Liquid Pb-Bi embrittlement effects on the T91 steel after different heat treatments*, Journal of Nuclear Materials 377 (2008) 219.
67. **Y. Dai**, D. Gavillet, R. Restani, *Stressed capsules of austenitic and martensitic steels irradiated in SINQ Target-4 in contact with liquid lead-bismuth eutectic*, Journal of Nuclear Materials 377 (2008) 225.
66. D. Gavillet, M. Martin, **Y. Dai**, *SIMS investigation of the spallation and transmutation products production in lead*, Journal of Nuclear Materials 377 (2008) 213.

65. H. Zhang, B. Long, **Y. Dai**, *Metallography Studies and Hardness Measurements on Ferritic/Martensitic Steels Irradiated in STIP*, Journal of Nuclear Materials 377 (2008) 112.
64. J. Henry, X. Averty, **Y. Dai**, J.P. Pizzanelli, *Tensile behaviour of 9Cr-1Mo martensitic steel irradiated up to 20 dpa in a spallation environment*, Journal of Nuclear Materials 377 (2008) 80.
63. B. Long and **Y. Dai**, *Investigation of LBE Embrittlement Effects on the Fracture Properties of T91*, Journal of Nuclear Materials, 376 (2008) 341.
62. Werner Wagner, **Yong Dai**, Heike Glasbrenner, Hans-Ulrich Aebersold, *Materials irradiation facilities at the high-power Swiss proton accelerator complex*, Journal of Nuclear Materials, 361 (2007) 274.
61. M. Basturk, **Y. Dai**, H. Rauch, M. Trinker, *Radiation-induced structural changes in highly irradiated N3-1 SiC/SiCf composite*, Nuclear Instruments and Methods in Physics Research A 564 (2006) 431.
60. **Y. Dai**, L.K. Mansur, S.A. Maloy, *Summary of the 7th International Workshop on Spallation Materials Technology (IWSMT-7)*, 356 (2006) 325.
59. **Y. Dai**, J. Henry, T. Auger, J.-B. Vogt, A. Almazouzi, H. Glasbrenner, F. Groeschel, *Assessment of the lifetime of the beam window of MEGAPIE target liquid metal container*, J. Nucl. Mater. 356 (2006) 308.
58. W. Lu, M. S. Wechsler, and **Y. Dai**, *The NCSU radiation damage database; proton-induced damage energy and application to radiation damage at SINQ*, J. Nucl. Mater. 356 (2006) 280.
57. **Y. Dai**, B. Long, X. Jia, H. Glasbrenner, K. Samec and F. Groeschel, *Tensile tests and TEM investigations on LiSoR-2 to -4*, J. Nucl. Mater. 356 (2006) 256.
56. H. Glasbrenner, R. Brütsch, **Y. Dai**, F. Gröschel, M. Martin, *Post irradiation examination on LiSoR 3 experiment*, J. Nucl. Mater. 356 (2006) 274.
55. **Y. Dai**, B. Long and F. Groeschel, *Slow strain rate tensile tests on T91 in static lead-bismuth eutectic*, J. Nucl. Mater. 356 (2006) 222.
54. B. M. Olivera **Y. Dai**, and R. A. Causey, *Helium and hydrogen release measurements on various alloys irradiated in SINQ*, J. Nucl. Mater. 356 (2006) 148.
53. M. Grosse, **Y. Dai**, S. Van Petegem, *Irradiation-induced structural changes in martensitic steel T91*, J. Nucl. Mater. 356 (2006) 112.
52. X. Jia, **Y. Dai**, *Microstructure of the F82H martensitic steel irradiated in STIP-II up to 20 dpa*, J. Nucl. Mater. 356 (2006) 105.
51. Stuart A. Maloy, T. Romero, M. R. James, **Y. Dai**, *Tensile testing of EP-823 and HT-9 after irradiation in STIP II*, J. Nucl. Mater. 356 (2006) 56.
50. X. Jia, **Y. Dai**, *The change of fracture toughness of martensitic steels after irradiation in SINQ Target-3*, J. Nucl. Mater. 356 (2006) 50.
49. **Y. Dai**, C. Fazio, D. Gorse, F. Groeschel, J. Henry, A. Terlain, J-B. Voget, T. Auger, A. Gessi, *Summary on the preliminary assessment of the T91 window performance in the MEGAPIE conditions*, Nuclear Instruments and Methods in Physics Research A, 562 (2006) 698.
48. W. Wagner, **Y. Dai**, H. Glasbrenner, M. Grosse, E. Lehmann, *Status of SINQ, the only MW spallation neutron source – highlighting target development and industrial applications*, Nuclear Instruments and Methods in Physics Research A, 562 (2006) 541.

47. **Y. Dai**, X. Jia, R. Thermer, D. Hamaguchi, K. Geissmann, E. Lehmann, H.P. Linder, M. James, F. Gröschel, W. Wagner, G.S. Bauer, *The Second SINQ Target Irradiation Program, STIP-II*, J. Nucl. Mater. 343 (2005) 33.
46. **Y. Dai**, X. Jia, S. A. Maloy, *Annealing effects on mechanical properties and microstructure of F82H irradiated at $\leq 60^{\circ}\text{C}$ with 800 MeV protons*, J. Nucl. Mater. 343 (2005) 241.
45. Stuart A. Maloy, A. Zubelewicz, T. Romero, M. R. James, **Y. Dai**, *The High Temperature Mechanical Properties of Proton Irradiated Structural Materials*, J. Nucl. Mater. 343 (2005) 191.
44. X. Jia and **Y. Dai**, *Microstructure analysis and hardness measurement on EBW welds of F82H and T91 steels irradiated in SINQ Target-3*, J. Nucl. Mater. 343 (2005) 212.
43. D. Hamaguchi, **Y. Dai**, *Microstructural Study of EC 316LN and its Welds Irradiated in SINQ Target-3*, J. Nucl. Mater. 343 (2005) 262.
42. **Yong Dai** and Pierre Marmy, *Charpy Impact Tests on Martensitic/Ferritic Steels after Irradiation in SINQ Target-3*, J. Nucl. Mater. 343 (2005) 247.
41. J. Chen, M. Rödig, F. Carsughi, **Y. Dai**, G.S. Bauer, H. Ullmaier, *The tensile properties of AISI 316L and OPTIFER in various conditions irradiated in a spallation environment*, J. Nucl. Mater. 343 (2005) 236.
40. **Y. Dai** and D. Hamaguchi, *Mechanical Properties and Microstructure of AlMg₃ Irradiated in SINQ Target-3*, J. Nucl. Mater. 343 (2005) 184.
39. **Y. Dai**, H. Glasbrenner, V. Bouteillier, R. Bruetsch, X. Jia, F. Groeschel, *Preliminary Results of Post Irradiation Examinations on LiSoR-2 Test Section*, J. Nucl. Mater. 335 (2004) 232.
38. **Y. Dai** and X. Jia, *The behaviours of martensitic steels after irradiation in SINQ Target-3*, American Nucl. Society, La Grange Park, ILL, (2004) 857.
37. S. Saito, K. Kikuchi, K. Usami, A. Ishikawa, Y. Nishino, M. Kawai, **Y. Dai**, *Bend-fatigue properties of 590 MeV proton irradiated JPCA and 316F SS*, J. Nucl. Mater. 329-333 (2004) 1093.
36. D. Hamaguchi, **Y. Dai**, *Microstructural change in AlMg3 alloy irradiated by spallation neutrons and high energy protons*, J. Nucl. Mater. 329-333 (2004) 958.
35. X. Jia and **Y. Dai**, *Microstructure and mechanical properties of F82H weld metal irradiated in SINQ Target -3*, J. Nucl. Mater. 329-333 (2004) 309.
34. X. Jia and **Y. Dai**, *Small punch tests on martensitic/Ferritic steels F82H, T91 and Optimax-A irradiated in SINQ Target-3*, J. Nucl. Mater. 323 (2003) 360.
33. **Y. Dai**, X. Jia and K. Farrell, *Mechanical properties of modified 9Cr-1Mo (T91) irradiated at $\leq 300^{\circ}\text{C}$ in SINQ Target 3*, J. Nucl. Mater. 318 (2003) 192.
32. X. Jia and **Y. Dai**, *Microstructure in martensitic steels T91 and F82H after irradiation in SINQ Target 3*, J. Nucl. Mater. 318 (2003) 207.
31. W. Lu, M.S. Wechsler and **Y. Dai**, *Radiation damage at the aluminium entrance window of the SINQ Target 3*, J. Nucl. Mater. 318 (2003) 176.
30. **Y. Dai**, Y. Foucher, M.R. James and B.M. Oliver, *Neutronics calculation, dosimetry analysis and gas measurements of the first SINQ target irradiation experiments, STIP-I*, J. Nucl. Mater. 318 (2003) 167.
29. J. Henry, X. Averty, **Y. Dai**, P. Lamagnere, J.P. Pizzanelli, J.J. Espinas, P. Wident, *Tensile properties of 9Cr-1Mo martensitic steel irradiated with high energy protons and neutrons*, J. Nucl. Mater. 318 (2003) 215.
28. T. Kirchner, Y. Bortoli, A. Cadiou, Y. Foucher, J.S. Stuzmann, T. Auger, **Y. Dai**, S. Dementjev, K. Geissmann, H. Glasbrenner, F. Groeschel, F. Heinrich, K. Kohlik, G. von

- Holzen, Ch. Perret and D. Viol, *LiSoR, a liquid metal loop for material investigation under irradiation*, J. Nucl. Mater. **318** (2003) 70.
27. J. Chen, G.S. Bauer, T. Broome, F. Carsughi, **Y. Dai**, S.A. Maloy, M. Roedig, W.F. Sommer, H. Ullmaier, *Summary of the results from post-irradiation examination of spent targets at the FZ-Juelich*, J. Nucl. Mater. **318** (2003) 56.
26. **Y. Dai**, F. Barbagallo, F. Groeschel, *Compression properties of lead-bismuth*, J. Nucl. Mater. **317** (2003) 252.
25. X. Jia, **Y. Dai**, M. Victoria, *The impact of irradiation temperature on the microstructure of F82H martensitic/ferritic steel irradiated at a proton and neutron mixed spectrum*, J. Nucl. Mater. **305** (2002) 1.
24. G.S. Bauer, **Y. Dai** and W. Wagner, *SINQ layout, operation, applications and R&D to high power*, J. Phys. IV France **12** (2002) Pr8-3.
23. T. Auger, L. Aphecetche, A. Cadiou, **Y. Dai**, H. Glasbrenner, F. Gröschel and T. Kirchner, *MEGAPIE target design and LiSoR experiment – Status report*, J. Phys. IV France **12** (2002) Pr8- 27.
22. R.Kh. Zalavutdinov, **Y.Dai**, A.E. Gorodetsky, G.S.Bauer, V.Kh.Alimov and A.P.Zakharov, *Oxidation of steels and HgO growth after 5000 hours exposure in mercury at 573 K*, Mikrochim. Acta **139** (2002) 201.
21. **Y. Dai** and G.S. Bauer, *Status of the first SINQ Irradiation Experiment, STIP-I*, Journal of Nuclear Materials **296** (2001) 43.
20. **Y. Dai**, X. Jia, J.C. Chen, W.F. Sommer, M. Victoria, G.S. Bauer, *Microstructure of both as-irradiated and deformed 304L stainless steel irradiated with 800 MeV protons*, Journal of Nuclear Materials **296** (2001) 174.
19. R.Kh. Zalavutdinov, **Y.Dai**, A.E. Gorodetsky, G.S.Bauer, V.Kh.Alimov and A.P.Zakharov, *A study on martensitic and austenitic steels after exposure in mercury at 573 K up to 5000 hours*, Journal of Nuclear Materials **296** (2001) 219.
18. G.S. Bauer, **Y. Dai**, S. Maloy, L.K. Mansur, H. Ullmaier, *Summary of the fourth international workshop on spallation materials technology (IWSMT-4)*, Journal of Nuclear Materials **296** (2001) 321.
17. **Y. Dai**, S. A. Maloy, G.S. Bauer and W.F. Sommer, *Mechanical properties and microstructure in low activation martensitic steels F82H and Optimax after 800 MeV proton irradiation*, J. Nucl. Mater. **283-287** (2000) 513.
16. M. Victoria, N. Baluc, C. Bailat, **Y. Dai**, R. Schaublin and B.N. Singh, *The microstructure and associated tensile properties of irradiated fcc and bcc metals*, J. Nucl. Mater. **276** (2000) 114.
15. R. Schaublin, A. Almazouzi, **Y. Dai**, Y. Osetsky, and M. Victoria, *Quantitative analysis of CTEM images of small dislocation loops in Al and stacking fault tetrahedra in Cu generated by molecular dynamics simulation*, J. Nucl. Mater., **276** (2000) 251.
14. **Y. Dai**, F. Carsughi, W.F. Sommer, G.S. Bauer, H. Ullmaier, *Tensile properties and microstructure of martensitic steel DIN 1.4926 after 800 MeV proton irradiation*, J. Nucl. Mater. **276** (2000) 289.
13. J. Chen, **Y. Dai**, F. Carsughi, W.F. Sommer, G.S. Bauer, H. Ullmaier, *Mechanical properties of 304L stainless steel irradiated with 800 MeV protons*, J. Nucl. Mater. **275** (2000) 115.
12. N. Baluc, C. Bailat, **Y. Dai**, M.I. Luppo, R. Schaublin and M. Victoria, *A comparison of the microstructure and tensile behavior of irradiated fcc and bcc metals*, MRS Symp. Proc. Vol. 540, 1999, p 539.

11. N. Baluc, **Y. Dai**, M. Victoria, Plasticity and Microstructure of Irradiated Pd, MRS Symp. Proc. Vol. 540, 1999, p 555.
10. **Y. Dai**, G.S. Bauer, F. Carsughi, H. Ullmaier, S.A. Maloy, W.F. Sommer, *Microstructure in martensitic steel DIN 1.4926 after 800 MeV proton irradiation*, J. Nucl. Mater. **265** (1999) 203.
9. **Yong Dai** and Max Victoria, *Defect cluster structure and tensile properties of copper single crystals irradiated with 600 MeV protons*, MRS Symp. Proc. Vol. 439, 1997, p. 319.
8. **Y. Dai** and M. Victoria, *Defect structures in deformed FCC metals*, Acta Metallurgica et Materialia, **45**(1997), p. 3495.
7. **Y. Dai** and H. Schroeder, *Creep properties and microstructures of helium implanted AISI 316L electron-beam weld and parent material*, Fusion Eng. And Design, **30** (1995) 261.
6. **Y. Dai**, D. Gavillet, F. Paschoud and M. Victoria, *Mechanical properties and microstructure of 600 MeV proton irradiated copper single crystals*, J. Nucl. Mater. **212-215** (1994) 393.
5. H. Schroeder and **Y. Dai**, *Helium concentration dependence of embrittlement effects in DIN 1.4970 13% C.W. austenitic stainless steel at 873 K*, J. Nucl. Mater. **191-194** (1992) 781.
4. **Y. Dai** and H. Schroeder, *Helium effects on the post-implantation creep properties and the microstruture of AISI 316L welds and parent material*, J. Nucl. Mater. **191-194** (1992) 745.
3. M. Paulus, **Y. Dai**, J. Deutz and H. Schroeder, *Electrochemical thinning and polishing of large area specimen of Ni and Fe based alloys*, Praktische Metallographie, **28** (1991) 659.
2. **Y. Dai** and Q.P. Kong, *The changes of relaxation parameters of grain boundaries in the course of constant rate deformation*, Phys. Stat. Sol. (a) **118** (1990) K21.
1. Q.P. Kong and **Y. Dai**, *The changes of relaxation parameters of grain boundaries during creep in pure copper*, Phys. Stat. Sol. (a) **118** (1990) 431.