



The *Abdus Salam* International Centre for Theoretical Physics



2028-17a

Joint ICTP/IAEA Workshop on Atomic and Molecular Data for Fusion

20 - 30 April 2009

References

James W. DAVIS

*Institute for Aerospace Studies, University of Toronto 4925 Dufferin St.
Toronto M3H 5T6
CANADA*

CHAPTER 1 REFERENCES

- Federici, 2001: G. Federici, C. H. Skinner, et al., “Plasma-material interactions in current tokamaks, and their implications for next-step fusion reactors”, Nucl. Fusion 41 (2001) 1967.
- Federici, 2003: G. Federici, et al., “Key ITER plasma edge and plasma-material interaction issues”, J. Nucl. Mater. 313-316 (2003) 11.

CHAPTER 2 REFERENCES

- Thompson, 1968: M. W. Thompson, Philos. Mag. 18 (1968) 377.
- Greenwood, 2002: J. Greenwood, “The correct and incorrect generation of a cosine distribution of scattered particles for Monte-Carlo modelling of vacuum systems”, Vacuum 67 (2002) 217.
- Marion, 2006: J. Marion, et al., “Characterization of Sputtered Products during Graphite Exposure to Deuterium Ions by molecular Dynamics”, to be published.
- Stangeby, 2000: P. C. Stangeby, “The Boundary Plasma of Magnetic Fusion Devices”, Institute of Physics Publishing, Bristol, 2000.
- Lisgo, 2003: S. Lisgo, “Interpretive modeling of the Alcator C-Mod Divertor”, Ph. D. Thesis, University of Toronto, 2003.
- Rubel, 2003: M. Rubel, et. al., “Beryllium and carbon films in JET following D-T operation”, J. Nucl. Mater. 313-316 (2003) 321.
- Wampler, 2006: W. R. Wampler, et al., “Transport and Deposition of 13C From Methane Injection Into Partially Detached Divertor H-mode Plasmas in DIII-D”, 17th PSI conference, Hefei, 2006.

CHAPTER 3 REFERENCES

- Haasz, 1999: A. A. Haasz, M. Poon and J. W. Davis, “The Effect of Ion Damage on Deuterium Trapping in tungsten”, J. Nucl. Mater. 266-269 (1999) 520.
- Jacob, 1998: W. Jacob, “Surface reactions during growth and erosion of hydrocarbon films”, Thin Solid Films 326 (1998) 1.
- Mills, 1989: B. E. Mills, D. A. Buchenaeur, A. E. Ponteau and M. Ulrickson, “Characterization of deposition and erosion of the TFTR bumper limiter and wall”, J. Nucl. Mater. 162-164 (1989) 343.

- Wright, 2003: P. B. Wright, J. W. Davis, et al., “Chemical erosion of DIII-D divertor tile specimens”, *J. Nucl. Mater.* 313-316 (2003) 158.
- Federici, 2001: G. Federici, C. H. Skinner, et al., “Plasma-material interactions in current tokamaks, and their implications for next-step fusion reactors”, *Nucl. Fusion* 41 (2001) 1967.
- Von Seggern, 1999: J. Von Seggern, et al., *Physica Scripta* T81 (1999) 31.
- Causey, 1998: R. A. Causey and D. S. Walsh, “Codeposition of deuterium with beryllium”, *J. Nucl. Mater.* 254 (1998) 84.
- Mayer, 1997: M. Mayer, “Codeposition of deuterium with BeO at elevated temperatures”, *J. Nucl. Mater.* 240 (1997) 164.
- Markin, 2000: A. V. Markin et al., “Codeposition of deuterium ions with beryllium oxide at elevated temperatures”, *J. Nucl. Mater.* 283-287 (2000) 1094.
- Baldwin, 2005: M. J. Baldwin, K. Schmid, R. P. Doerner, et al., “Composition and Hydrogen Isotope Retention analysis of Co-Deposited C/Be Layers”, *J. Nucl. Mater.* 337-339 (2005) 590.
- Krieger, 2003: K. Krieger, A. Geier, et al., “Erosion and migration of tungsten employed at the main chamber first wall of ASDEX Upgrade”, *J. Nucl. Mater.* 313-316 (2003) 327.

CHAPTER 4 REFERENCES

- Vietzke, 1996: E. Vietzke and A. A. Haasz, “Chemical Erosion” in *Physical Processes of the Interaction of Fusion Plasmas with Solids*, Eds. W. O. Hofer and J. Roth , Academic Press, San Diego, 1996.
- von Keudell, 1999: A. von Keudell, C. Hopf, T. Schwarz-Selinger and W. Jacob, “Surface loss probabilities of hydrocarbon radicals on amorphous hydrogenated carbon film surfaces: consequences for the formation of re-deposited layers in fusion experiments”, *Nucl. Fusion* 39 (1999) 1451.
- Garcia-Rosales, 1992: C. Garcia-Rosales and J. Roth, “Chemical sputtering of pyrolytic graphite and boron doped graphite USB15 at energies between 10 and 1000 eV”, *J. Nucl. Mater.* 196-198 (1992) 573.

- Davis, 1998: J. W. Davis and A. A. Haasz, “Chemical erosion of CKC TiB₂-doped graphite”, *J. Nucl. Mater.* 255 (1998) 214.
- Krieger, 2001: K. Krieger and J. Roth, “Synergistic effects by simultaneous bombardment of tungsten with hydrogen and carbon”, *J. Nucl. Mater.* 290-293 (2001) 107.
- Goldstrass, 1999: P. Goldstrass, W. Eckstein and Ch. Linsmier, “Erosion of beryllium and deposition of carbon and oxygen due to bombardment with C⁺ and CO⁺ ions”, *J. Nucl. Mater.* 266-269 (1999) 581.
- Eckstein, 2000: W. Eckstein, “Dynamic behaviour of the systems Be-C, Be-W and C-W”, *J. Nucl. Mater.* 281 (2000) 195.
- Poon, 2000: M. Poon, J. W. Davis and A. A. Haasz, “Effect of carbon pre-implantation on deuterium retention in tungsten”, *J. Nucl. Mater.* 283-287 (2000) 1062.

CHAPTER 5 REFERENCES

- Andrew, 1999: P. L. Andrew, et al., “Tritium retention and clean-up in JET”, *Fus. Eng. Design* 47 (1999) 233.
- Federici, 2001: G. Federici, C. H. Skinner, et al., “Plasma-material interactions in current tokamaks, and their implications for next-step fusion reactors”, *Nucl. Fusion* 41 (2001) 1967.
- Davis, 2001a: J. W. Davis, P. B. Wright, R. G. Macaulay-Newcombe, A. A. Haasz and C. G. Hamilton, “Chemical Erosion of Boronized films from DIII-D Tiles”, *J. Nucl. Mater.* 290-293 (2001) 66.
- Wang, 1997: W. Wang, W. Jacob and J. Roth, “Oxidation and hydrogen isotope exchange in amorphous deuterated carbon films”, *J. Nucl. Mater.* 245 (1997) 66.
- Haasz, 1996: A. A. Haasz, S. Chiu, J. E. Pierre and Y. I. Gudimenko, “Thermo-oxidative erosion of amorphous hydrogenated carbon films”, *J. Vac. Sci. Technol. A14* (1996) 184.
- Causey, 1990: R. A. Causey, W. R. Wampler and D. Walsh, “Comparison of the Thermal Stability of the Codeposited Carbon/Hydrogen Layer to that of the Saturated Implant Layer”, *J. Nucl. Mater.*, 176&177 (1990) 987.

- Davis, 2001b: J. W. Davis and A. A. Haasz, “Overview of thermo-oxidation of tokamak codeposits”, *Physica Scripta* T91 (2001) 33.
- Philipps, 1999: V. Philipps et al., “Removal of redeposited layers and hydrogen release by oxygen ventilation of TEXTOR”, *J. Nucl. Mater.* 266-269 (1999) 386.
- Hu, 2006: J. S. Hu, J. G. Li, X. M. Wang, Y. P. Zhao, et al., “Oxidation for Deposits Removal and Hydrogen Releasing on HT-7”, 17th PSI conference, Hefei, 2006.
- Hopf, 2006: C. Hopf, V. Rohde, W. Jacob, et al., “Oxygen Glow Discharge Cleaning in ASDEX Upgrade”, 17th PSI conference, Hefei, 2006.
- Moormann, 2000: R. M. Moormann, H. K. Hinssen and C. H. Wu, “Oxidation of carbon based first wall materials for ITER”, 18th IAEA Fusion Energy Conf., Sorrento, Italy, Oct. 4-10, 2000.
- Whyte, 2005: D. G. Whyte and J. W. Davis, “Tritium Recovery in ITER by Radiative Plasma Terminations”, *J. Nucl. Mater.* 337-339 (2005) 560.
- Skinner, 2002: C. H. Skinner, et al., “Tritium removal from JET and TFTR tiles by a scanning laser”, *J. Nucl. Mater.* 313-316 (2003) 496.
- Counsell, 2001: G. F. Counsell and C. H. Wu, “In-situ detection and removal of carbon debris – a challenge for the next-step fusion device”, *Physica Scripta* T91 (2001) 70.