

# Farrokh Najmabadi Publications

## A. Primary Published or Creative Work

### A.i. Refereed Journal Articles

1. **F. Najmabadi**, A. J. Lichtenberg, and M. A. Lieberman, "Effects of ambipolar potential on multiple mirror confinement," *Physics of Fluids*, Vol. 26 (April 1983), pp. 1018-1027.
2. **F. Najmabadi**, A. J. Lichtenberg, and M. A. Lieberman, "Parameter optimization of multiple mirror reactors," *Nuclear Fusion*, Vol. 23 (May 1983), pp. 609-631.
3. R. W. Conn, N. M. Ghoniem, S. P. Grotz, **F. Najmabadi**, K. Taghavi, and M. Z. Youssef, "Influence of startup, shutdown, and staged power operation on tandem mirror reactor design," *Nuclear Technology/Fusion (Fusion Technology)*, Vol. 4 (September 1983), pp. 615-622.
4. **F. Najmabadi**, R. W. Conn, and R. H. Cohen, "Collisional end loss of electrostatically confined particles in a magnetic mirror field," *Nuclear Fusion*, Vol. 24 (January 1984), pp. 75-84.
5. R. W. Conn and **F. Najmabadi**, "Magnetic divertors for tandem mirrors," *Comments on Plasma Physics and Controlled Fusion*, Vol. 8 (May 1984), pp. 177-186.
6. R. W. Conn, **F. Najmabadi**, F. Kantrowitz, M. A. Firestone, D. M. Goebel, and T. K. Mau, "The reactor plasma physics of tandem mirror start-up and fractional power operation," *Fusion Technology*, Vol. 6 (July 1984), pp. 52-63.
7. **F. Najmabadi** and R. W. Conn, "Plasma radius control system for tandem mirrors," *Fusion Technology*, Vol. 7 (January 1985), pp. 57-65.
8. Y. Chu, **F. Najmabadi**, and R. W. Conn, "Self-consistent study of fusion products slowing down in burning plasmas," *Plasma Physics and Controlled Fusion*, Vol. 27 (August 1985), pp. 847-854.
9. E. Zawaideh, **F. Najmabadi**, and R. W. Conn, "Generalized fluid equations for parallel transport in collisional to weakly collisional plasmas," *Physics of Fluids*, Vol. 29 (February 1986), pp. 463-474.
10. E. Zawaideh, **F. Najmabadi**, and R. W. Conn, "Effects of pressure anisotropy on plasma transport," *Physics of Fluids*, Vol. 29 (November 1986), pp. 3702-3710.
11. **F. Najmabadi**, "Advances in fusion reactor design-the TITAN reversed-field pinch reactor study," *Journal of Fusion Energy*, Vol. 7 (March 1988), pp. 177-181.
12. E. Zawaideh, N. S. Kim, and **F. Najmabadi**, "Generalized parallel heat transport equations in collisional to weakly collisional plasmas," *Physics of Fluids*, Vol. 31 (November 1988), pp. 3280-3285.
13. R. W. Conn, **F. Najmabadi**, R. A. Krakowski, K. R. Schultz, and D. Steiner, "Compact, high-power-density reversed-field-pinch fusion reactors," *Nuclear Fusion Supplement*, Vol. 3 (March 1989), pp. 315-324.
14. S. P. Grotz, N. M. Ghoniem, J. Bartlitt, C. G. Bathke, J. P. Blanchard, E. T. Cheng, Y. Chu, R. W. Conn, P. I. H. Cooke, R. L. Creedon, A. E. Dabiri, W. P. Duggan, O. Fischer, P. J. Gierszewski, G. E. Gorke, M. Z. Hasan, C. G. Hoot, D. C. Keeton, W. P. Kelleher, C. E. Kessel, R. A. Krakowski, O. Kveton, D. C. Lousteau, R. C. Martin, R. L. Miller, **F. Najmabadi**, R. A. Nebel, G. E. Orient, A. K. Prinja, K. R. Schultz, S. Sharafat, D. Steiner, D. K. Sze, S. L. Thomson, S. G. Visser, E. L. Vold, K. A. Werley, C. P. C. Wong, "Overview of the TITAN-I fusion-power core," *Fusion Engineering and Design*, Vol. 9 (December 1989), pp. 367-373.
15. C. P. C. Wong, S. P. Grotz, J. P. Blanchard, E. T. Cheng, S. Sharafat, R. L. Creedon, C. G. Hoot, **F. Najmabadi**, K. R. Schultz, and the TITAN Research Group, "The safety design for the TITAN reversed-field pinch reactor study," *Fusion Engineering and Design*, Vol. 9 (December 1989), pp. 447-453.
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17. E. Zawaideh, N. S. Kim, and **F. Najmabadi**, "Structure of the plasma sheath in collisional to weakly collisional plasmas," *Physics of Fluids B*, Vol. 2 (March 1990), pp. 647-654.
18. R. W. Conn, J. P. Holdren, D. Steiner, D. Ehst, W. J. Hogan, R. A. Krakowski, R. L. Miller, **F. Najmabadi**, and K. R. Schultz, "Fusion reactor economic, safety, and environmental prospects," *Nuclear Fusion*, Vol. 30 (June 1990), pp. 1919-1934.
19. E. L. Vold, A. Prinja, **F. Najmabadi**, and R. W. Conn, "The neutral diffusion approximation in a consistent tokamak edge plasma-neutral computation," *Journal of Nuclear Materials*, Vol. 176 & 177 (December 1990), pp. 570-577.
20. R. W. Conn and **F. Najmabadi**, "ARIES-I: A steady-state, first-stability tokamak reactor with enhanced safety and environmental features," *Nuclear Fusion 1991 Supplement*, Vol. 3 (March 1991), 659-670.
21. **F. Najmabadi** and R. W. Conn, "Technology and reactor concepts and economic, safety, and environmental aspects of fusion," in *Summaries of the 13<sup>th</sup> IAEA International Conference on Plasma Physics and Controlled Fusion Research*, *Nuclear Fusion*, Vol. 31 (April 1991), pp. 789-795.
22. **F. Najmabadi** and R. W. Conn, "The ARIES-I tokamak reactor study," *Fusion Technology*, Vol. 19 (May 1991), pp. 783-790.
23. S. P. Grotz, **F. Najmabadi**, L. Bromberg, R. L. Miller, D. K. Sze, L. Creedon, and C. P. C. Wong, "Design integration and maintenance of the ARIES-I tokamak reactor," *Fusion Technology*, Vol. 19 (May 1991), pp. 889-894.
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25. D. Vollath, K. Herschback, H. Kleykamp, **F. Najmabadi**, and C. Wassilew (Eds.), "Proceedings of the second international symposium on fusion nuclear technology (ISFNT-2)", (Karlsruhe, Germany, June 2-7, 1991), North Holland, Amsterdam, 1991.
26. E. L. Vold, **F. Najmabadi**, and R. W. Conn, "Fluid model equations for the tokamak plasma edge," *Physics of Fluids B*, Vol. 3 (November 1991), pp. 3132-3162.
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28. S. Sharafat, **F. Najmabadi**, and C. P. C. Wong, "ARIES-I fusion power core engineering," *Fusion Engineering and Design*, Vol. 18 (December 1991), pp. 215-222.
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33. M. Day, B. Merriman, **F. Najmabadi**, and R. W. Conn, "A second-generation code for modeling tokamak edge plasmas," *Journal of Nuclear Materials*, Vol. 196-198 (December 1992), pp. 785-788.
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96. Y. Tao, M. S. Tillack, S. S. Harilal, K. L. Sequoia, R. A. Burdt, and **F. Najmabadi**, "Mass-limited Sn target irradiated by dual laser pulses for an extreme ultraviolet lithography source," *Optics Letters* Vol. 32, (15 May 2007) 2492-2495. (also appears in the Virtual Journal of Ultrafast Science, May 2007) **NEW**
97. A. R. Raffray T. K. Mau, **F. Najmabadi**, and the ARIES Team, "Accommodation of Prompt Alpha-Particle Loss in a Compact Stellarator Power Plant," *Journal of Nuclear Materials*, Vol. 363-365 (15 June 2007) pp. 1087-1092. **NEW**
98. A. R. Raffray, L. El-Guebaly, T. Ihli, S. Malang, **F. Najmabadi**, X. Wang and the ARIES-CS Team, "Engineering Challenges in Designing an Attractive Compact Stellarator Power Plant," accepted for publication in *Fusion Engineering & Design*, 2007. **NEW**

## A.ii. Books and Book Chapters

1. R W. Conn, J. P. Holdren, D. Steiner, D. Ehst, W. J. Hogan, R. A. Krakowski, R. L. Miller, **F. Najmabadi**, and K. R. Schultz, "Fusion Reactor Economic, Safety, and Environmental Prospects," in **Safety, Environmental Impact, and Economic Prospects of Nuclear Fusion**, Brunelli and Knoepfel (Eds.), NY: Plenum Press, 1990, pp. 3-31.

### A.iii. Refereed Conference Proceedings

1. **F. Najmabadi**, R. W. Conn, R. A. Krakowski, K. R. Schultz, and D. Steiner, "Engineering and physics of high-power-density, compact, reversed-field-pinch fusion reactors: the TITAN study," *Proc. 15<sup>th</sup> Symposium Fusion Technology, SOFT-15, (Fusion Technology 1988, North Holland, Amsterdam, 1989), Utrecht, The Netherlands, September 19-23, 1988, pp. 1779-1785. Oral Lecture*

Acceptance rate is 1 in 3. Typically 5% of accepted papers are selected as Oral lectures.

2. **F. Najmabadi**, R. W. Conn, C. G. Bathke, L. Bromberg, E. T. Cheng, D. R. Cohn, P. I. H. Cooke, L. Creedon, D. A. Ehst, K. Evans, *et al.*, "The ARIES-I tokamak reactor study," *Proc. 16<sup>th</sup> Symposium on Fusion Technology, SOFT-16, (Fusion Technology 1990, North Holland, Amsterdam, 1991), London, UK, September 3-7, 1990, pp. 253-257. Oral Lecture*

Acceptance rate is 1 in 3. Typically 5% of accepted papers are selected as Oral lectures.

3. **F. Najmabadi**, "Assessment of tokamak plasma operation modes as fusion power plants--the Starlite study," *Proc. of 16<sup>th</sup> IAEA International Conference on Fusion Energy, (Fusion Energy 1996, IAEA, Vienna, 1997), Montreal, Canada, October 7-11, 1996, pp. 383-394.*

This is the premier Fusion Energy conference in the world.

Acceptance rate is 1 in 5. 2-3 page summary of each paper is reviewed twice: by domestic (*i.e.*, US) and by international review committees before acceptance to the conference.

4. **F. Najmabadi**, S. C. Jardin, M. Tillack, R. L. Miller, T. K. Mau, R. Stambaugh, D. Steiner, and L. M. Waganer, "The ARIES-ST study: assessment of the spherical tokamak concept as fusion power plants," *Proc. Of 1998 IAEA Fusion Energy Conference, Yokohama, Japan, October 17-23, 1998, 4 pages.*

This is the premier Fusion Energy conference in the world.

Acceptance rate is 1 in 5. 2-3 page summary of each paper is reviewed twice: by domestic (*i.e.*, US) and by international review committees before acceptance to the conference.

5. **F. Najmabadi**, S. C. Jardin, M. Tillack, and L. M. Waganer, "ARIES-AT: an advanced tokamak, advanced technology fusion power plant" *Proc. of 2000 IAEA Fusion Energy Conference, Sorrento, Italy, October 3-10, 2000, 4 pages.*

This is the premier Fusion Energy conference in the world.

Acceptance rate is 1 in 5. 2-3 page summary of each paper is reviewed twice: by domestic (*i.e.*, US) and by international review committees before acceptance to the conference.

6. **F. Najmabadi**, "Assessment of chamber concepts for inertial fusion energy power plants -- The ARIES-IFE study," *Proc. International Symposium on Inertial Fusion Science and Applications, IFSA 2001, (IFSA 2001, Elsevier Data Science Library), Kyoto, Japan, September 9-14, 2001, pp. 701-705. Invited paper*

7. W.R. Meier, D.T. Goodin, A. Nobile, G. Besenbuch, D. Haynes, J. Hoffer, J. Latkowski, J. Maxwell, **F. Najmabadi**, A. Nikroo, P. Peterson, R. Petzoldt, W. Rickman, J. Sethian, W. Steckle, E. Stephens, M. Tillack, A. Ying, M. Yoda, "Addressing IFE science and technology issues for IFE chambers, target fabrication and target injection," *Proc. of 2002 IAEA Fusion Energy Conference, Lyon, France, October 14-19, 2002, 5 pages.*

This is the premier Fusion Energy conference in the world.

Acceptance rate is 1 in 5. 2-3 page summary of each paper is reviewed twice: by domestic (*i.e.*, US) and by international review committees before acceptance to the conference.

8. J.D. Sethian, S.P. Obenschain, M. Myers, A.J. Schmitt, D. Colombant, J. Gardner, F. Hegler, M. Wolford, J. Giuliani, P. Kepple, S. Swanekamp, D. Weidenheimer, D. Welch, D. Rose, S. Payne, C. Bibeau, A. Baraymian, R. Beach, K. Schaffers, B. Freitas, W. Skulina, W. Meier, J. Latkowski, J. Lindl, L.J. Perkins, D. Goodin, R. Petzold, F. Najmabadi, M. Tillack, R. Raffray, D. Haynes, R. Peterson, G. Kulcinski, A. Nobile, J. Hoffer, D. Schroen, C. Olson, T. Tanaka, T. Renk, L. Snead, "Fusion energy research with lasers, direct drive targets, and dry wall chambers," *Proc. of 2002 IAEA Fusion Energy Conference*, Lyon, France, October 14-19, 2002, 12 pages. **Overview Paper**

This is the premier Fusion Energy conference in the world.

Acceptance rate is 1 in 5. 2-3 page summary of each paper is reviewed twice: by domestic (i.e., US) and by international review committees before acceptance to the conference.

Typically 5% of papers are chosen as **Overview papers**.

9. Z. Dragojlovic and **F. Najmabadi**, "Simulation of IFE chamber dynamics response by a second order Godunov method with arbitrary geometry," *Proc. International Symposium on Inertial Fusion Science and Applications, IFSA 2003*, (IFSA 2003, American Nuclear Society), Monterey, CA, September 7-12, 2003, pp. 850-853.
10. M. S. Tillack, S. S. Harilal, **F. Najmabadi**, and J. O'Shay, "Magnetic confinement of an expanding laser-produced plasma," *Proc. International Symposium on Inertial Fusion Science and Applications, IFSA 2003*, (IFSA 2003, American Nuclear Society), Monterey, CA, September 7-12, 2003, pp. 319-322.
11. **F. Najmabadi**, "The ARIES-CS – A Compact Stellarator Power Plant," , " *Proc. of 2006 IAEA Fusion Energy Conference*, Chengdu, China, October 16-21, 2006, 8 pages. **NEW**

This is the premier Fusion Energy conference in the world.

Acceptance rate is 1 in 5. 2-3 page summary of each paper is reviewed twice: by domestic (i.e., US) and by international review committees before acceptance to the conference.

## B. Other Work

### B.i. Other Conference Proceedings/Papers

1. **F. Najmabadi**, A. J. Lichtenberg, and M. A. Lieberman, "Coil design and economics optimization for multiple mirror reactors," *Proc. 8<sup>th</sup> IEEE Symposium on Engineering Problems in Fusion Research*, (No. 79CH1441-5, Piscataway, NJ, 1980), San Francisco, CA, November 13-16, 1979, pp. 632-636.
2. R. W. Conn and **F. Najmabadi**, "The TITAN reversed-field pinch fusion reactor study," *Proc. 12<sup>th</sup> IEEE Symposium on Fusion Engineering* (IEEE No. 87CH2507-2, Piscataway, NJ, 1988), Monterey, CA, October 12-16, 1987, pp. 503-508. **Invited paper**
3. S. P. Grotz, N. M. Ghoniem, J. Bartlitt, C. G. Bathke, J. P. Blanchard, E. T. Cheng, Y. Chu, R. W. Conn, P. I. H. Cooke, R. L. Creedon, A. E. Dabiri, W. P. Duggan, O. Fischer, P. J. Gierszewski, G. E. Gorker, M. Z. Hasan, D. C. Keeton, C. E. Kessel, R. A. Krakowski, W. P. Kelleher, D. C. Lousteau, R. C. Martin, R. L. Miller, **F. Najmabadi**, R. A. Nebel, G. E. Orient, A. K. Prinja, K. R. Schultz, S. Sharafat, D. Steiner, D. K. Sze, S. L. Thomson, E. L. Vold, K. A. Werley, C. P. C. Wong, "The TITAN reversed-field pinch lithium-vanadium fusion power core design," *Proc. 12<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 87CH2507-2, Piscataway, NJ, 1988), Monterey, CA, October 12-16, 1987, pp. 776-779.
4. S. P. Grotz, R. L. Creedon, P. I. H. Cooke, W. P. Duggan, R. A. Krakowski, **F. Najmabadi**, and C. P. C. Wong, "Single-piece maintenance procedures for the TITAN reversed-field reactor," *Proc. 12<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 87CH2507-2, Piscataway, NJ, 1988), Monterey, CA, October 12-16, 1987, pp. 930-933.
5. S. Sharafat, N. M. Ghoniem, E. Cheng, P. I. H. Cooke, S. P. Grotz, R. Martin, **F. Najmabadi**, and C. P. C. Wong, "Structure and insulator material choices for the TITAN reversed-field pinch reactor," *Proc. 12<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 87CH2507-2, Piscataway, NJ, 1988), Monterey, CA, 12-16, October 1987, pp. 1046-1049.
6. M. Z. Hasan, J. P. Blanchard, R. W. Conn, P. I. H. Cooke, N. M. Ghoniem, S. P. Grotz, **F. Najmabadi**, G. Orient, S. Sharafat, and C. P. C. Wong, "Thermal-hydraulic design for the lithium-cooled TITAN reversed-field pinch reactor," *Proc. 12<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 87CH2507-2, Piscataway, NJ, 1988), Monterey, CA, October 12-16, 1987, pp. 1054-1057.
7. C. P. C. Wong, R. L. Creedon, S. P. Grotz, E. T. Cheng, S. Sharafat, P. I. H. Cooke, J. Bartlitt, C. G. Bathke, J. P. Blanchard, Y. Chu, R. W. Conn, W. P. Duggan, O. Fischer, N. M. Ghoniem, G. E. Gorker, P. J. Gierszewski, M. Z. Hasan, C. E. Kessel, R. A. Krakowski, D. C. Lousteau, R. C. Martin, R. L. Miller, **F. Najmabadi**, R. A. Nebel, G. E. Orient, A. K. Prinja, K. R. Schultz, D. Steiner, D. K. Sze, S. L. Thomson, E. L. Vold, K. A. Werley, "The TITAN-II, reversed-field pinch aqueous fusion power core design," *Proc. 12<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 87CH2507-2, Piscataway, NJ, 1988), Monterey, CA, October 12-16, 1987, pp. 1287-1291.
8. S. Grotz, T. Hua, D. K. Sze, E. T. Cheng, R. L. Creedon, C. P. C. Wong, J. S. Herring, A. Klien, L. Snead, D. Steiner, N. M. Ghoniem, M. Z. Hasan, R. C. Martin, **F. Najmabadi**, and S. Sharafat, "Blanket concepts for the ARIES commercial tokamak reactor study," *Proc. 10<sup>th</sup> International Conference on Structural Mechanics in Reactor Technology, SMIRT*, Anaheim, California, August 14-18, 1989, 6 pages.
9. **F. Najmabadi** and R. W. Conn, "The ARIES tokamak fusion reactor study," *Proc. 13<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 89CH2820-9, Piscataway, NJ, 1990), Knoxville, TN, October 2-6, 1989, pp. 1021-1026. **Invited paper**
10. S. P. Grotz, **F. Najmabadi**, D. K. Sze, Y. M. Peng, R. L. Creedon, C. P. C. Wong, R. L. Miller, L. Bromberg, "Design integration of the ARIES-I tokamak reactor," *Proc. 13<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 89CH2820-9, Piscataway, NJ, 1990), Knoxville, TN, October 2-6, 1989, pp. 1031-1034.

11. C. P. C. Wong, E. T. Cheng, R. L. Creedon, J. A. Leuer, K. R. Schultz, S. P. Grotz, N. M. Ghoniem, M. Z. Hasan, R. C. Martin, **F. Najmabadi**, S. Sharafat, T. Kunugi, D. K. Sze, J. S. herring, R. L. Miller, and E. Greenspan, "Blanket design for the ARIES-I tokamak reactor," *Proc. 13<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 89CH2820-9, Piscataway, NJ, 1990), Knoxville, TN, October 2-6, 1989, pp. 1035-1038.
12. K. R. Schultz, **F. Najmabadi**, and R. W. Conn, "The ARIES study – a search for attractive fusion power plants," **Invited**, *Proc. IEEE Power Society Meeting*, San Diego, CA, August 1991, 5 pages.
13. **F. Najmabadi** and R. W. Conn, "The ARIES-III D-<sup>3</sup>He tokamak reactor study," *Proc. 14<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 91CH3035-3, Piscataway, NJ, 1992), San Diego, CA, September 30-October 3, 1991, pp. 213-218. **Invited**
14. L. Bromberg, J. Schultz, P. Titus, J. E. C. Williams, **F. Najmabadi**, and S. Sharafat, "Magnet design for the ARIES-III D-<sup>3</sup>He reactor," *Proc. 14<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 91CH3035-3, Piscataway, NJ, 1992), San Diego, CA, September 30-October 3, 1991, pp. 313-317.
15. M. Z. Hasan, **F. Najmabadi**, G. E. Orient, E. Reis, S. Sharafat, D. K. Sze, M. Valenti, and C. P. C. Wong, "Thermo-structural design of the ARIES-III divertor with organic coolant in subcooled flow boiling," *Proc. 14<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 91CH3035-3, Piscataway, NJ, 1992), San Diego, CA, September 30-October 3, 1991, pp. 346-349.
16. C. P. C. Wong, K. R. Schultz, E. T. Cheng, S. P. Grotz, M. Z. Hasan, **F. Najmabadi**, S. Sharafat, J. N. Brooks, D. A. Ehst, D. K. Sze, J. S. Herring, M. Valenti, and D. Steiner, "ARIES-III divertor engineering design," *Proc. 14<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 91CH3035-3, Piscataway, NJ, 1992), San Diego, CA, September 30-October 3, 1991, pp. 451-454.
17. S. Sharafat, **F. Najmabadi**, and I. Sviatoslavsky, "Design layout and maintenance of the ARIES-III tokamak reactor," *Proc. 14<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 91CH3035-3, Piscataway, NJ, 1992), San Diego, CA, September 30-October 3, 1991, pp. 1039-1042.
18. S. Sharafat, **F. Najmabadi**, C. P. C. Wong, R. Junge, and I. Sviatoslavsky, "Design layout and maintenance of the ARIES-IV tokamak fusion power plant," *Proc. 15<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 93CH3348-0, Piscataway, NJ, 1994), Hyannis, MA, October 11-15, 1993, 417-420.
19. L. M. Waganer, **F. Najmabadi**, and M. S. Tillack, "What must demo do?" *Proc. 16<sup>th</sup> IEEE Symposium on Fusion Engineering* (IEEE No. 95CH35852, IEEE, Piscataway, NJ, 1995), Champaign, IL, September 30-October 3, 1995, pp. 1157-1161.
20. **F. Najmabadi**, "Fusion Power Plants--Goals & Technological Challenges," *Proc. of 31<sup>st</sup> Intersociety Energy Conversion Engineering Conference, IECEC*, Washington, D.C., August 11-16, 1996, 4 pages.
21. X. R. Wang, **F. Najmabadi**, M. S. Tillack, and S. Malang, "Configuration and maintenance options for low aspect ratio tokamaks," *Proc. 17<sup>th</sup> IEEE Symposium on Fusion Engineering*, (IEEE No. 97CH36131, Piscataway, NJ, 1998), San Diego, CA, October 6-10, 1997, pp. 1056-1059.
22. D. Steiner, J. Freidberg, **F. Najmabadi**, W. Nevins, and J. Perkins, "Summary of energy issues working group on long-term visions for fusion power," *Proc. of 1999 Fusion Summer Study*, Snowmass, CA, July 11-23, 1999, 13 pages.
23. T. K. Mau, S. C. Jardin, C. E. Kessel, J. E. Menard, R. L. Miller, **F. Najmabadi**, V. S. Chan, L. L. Lao, T. W. Petrie, P. A. Politzer, and A. D. Turnbull, "Physics basis for the ARIES-ST power plant," *Proc. of 18th IEEE Symposium Fusion Engineering*, (IEEE No. 99CH37050, Piscataway, NJ, 1999), Albuquerque, NM, October 25-29, 1999, pp. 45-48.
24. A. R. Raffray, L. El-Guebaly, D. K. Sze, M. Billone, I. Sviatoslavsky, E. Mogahed, **F. Najmabadi**, M. S. Tillack, and X. Wang, "SiC/SiC composite for an advanced fusion power plant blanket," *Proc. of 18th IEEE Symposium Fusion Engineering*, (IEEE No. 99CH37050, Piscataway, NJ, 1999), Albuquerque, NM, October 25-29, 1999, pp. 73-76.
25. X. R. Wang, M. S. Tillack, **F. Najmabadi**, S. Malang, "Configuration and maintenance of the ARIES-ST power plant," *Proc. of 18th IEEE Symposium Fusion Engineering*, (IEEE No. 99CH37050, Piscataway, NJ, 1999), Albuquerque, NM, October 25-29, 1999, pp. 241-244.

26. W. Meier, **F. Najmabadi**, J. Schmidt, and J. Sheffield, "Role of fusion energy in a sustainable global energy strategy," *Proc. 18th Congress of World Energy Council*, Buenos Aires, Argentina, October 21-25, 2001, 19 pages.
27. **F. Najmabadi**, "Impact of advanced physics and technology on the attractiveness of tokamak fusion power plants," **Plenary**, *Proc. of 19th IEEE Symposium on Fusion Engineering*, Atlantic City, NJ, January 22-25, 2002, pp. 10-15.
28. **F. Najmabadi**, K. Schoenberg, R. Goldston, D. Meade, H. Nielson, C. Petty, M. Peng, P. Rutherford, J. Sarff, and J. Schmidt, "Summary of E4 working group on magnetic fusion energy development path," *Proc. of 2002 Fusion Summer Study*, Snowmass, CA, July 8-19, 2002, 47 pages

## B.ii. Non-refereed Conference Proceedings/Abstracts

1. **F. Najmabadi** and A. J. Lichtenberg, "Parameter optimization of a multiple mirror reactor," *22<sup>nd</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 25, 1980) San Diego, CA, November 10-14, 1980.
2. **F. Najmabadi**, A. J. Lichtenberg, and M. A. Lieberman, "Effects of ambipolar potential on multiple mirror confinement," *23<sup>rd</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 26, 1981), New York, NY, November 10-14, 1981.
3. N. S. Kim, **F. Najmabadi**, and R. W. Conn, "Fully axisymmetric mirror equilibria and stability," *24<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 27, 1982), November 1-5, 1982, p. 970.
4. **F. Najmabadi**, R. W. Conn, and R. H. Cohen, "Particle losses from electrostatic traps," *24<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 27, 1982), November 1-5, 1982.
5. **F. Najmabadi**, R. W. Conn, and E. Zawaideh, "Magnetic divertors for tandem mirror reactors," *25<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 28, 1983), November 7-11, 1983.
6. R. W. Conn, **F. Najmabadi**, and E. Zawaideh, "Radius control system for tandem mirror reactors," *25<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 28, 1983), November 7-11, 1983.
7. Y. Chu, R. W. Conn, and **F. Najmabadi**, "Tail-pulling effect by fusion products in a DT plasma," *25<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 28, 1983), November 7-11, 1983.
8. E. Zawaideh, **F. Najmabadi**, and R. W. Conn, "A generalized fluid model for collisional to weakly collisional plasma," *26<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 29, 1984), October 29 - November 2, 1984.
9. **F. Najmabadi**, "Analytical study of energetic ions slowing down in plasmas," *Annual Sherwood Theory Conference*, Madison, WI, April 15-17, 1985.
10. E. Zawaideh, **F. Najmabadi**, and R. W. Conn, "Plasma flow through magnetic mirrors," *Annual Sherwood Theory Conference*, Madison, WI, April 15-17, 1985.
11. **F. Najmabadi**, E. Zawaideh, R. W. Conn, "Effects of pressure anisotropy on plasma transport," *27<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 30, 1985), November 4-8, 1985, p. 1378.
12. E. Zawaideh, **F. Najmabadi**, and R. W. Conn, "Axial plasma confinement in multiple mirror devices," *27<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 30, 1985), November 4-8, 1985, p. 1378.
13. **F. Najmabadi**, "Overview of US RFP reactor studies," *US/Japan workshop on RFP reactor Design Studies*, P103, University of Tokyo, Tokai-Mura, Japan, August 18-21, 1986.
14. **F. Najmabadi**, R. W. Conn, N. Ghoniem, R. Miller, R. Krakowski, K. Schultz C. Wong, and D. Steiner, "TITAN reversed-field pinch parapoint reactor study," *28<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 31, 1986), November 3-7, 1986.
15. R. A. Krakowski, **F. Najmabadi**, *et al.*, "Physics issues for compact reversed-field pinch reactors," *28<sup>th</sup> APS Division of Plasma Physics Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 31, 1986), November 3-7, 1986, p. 1762.
16. **F. Najmabadi**, "Overview of TITAN plasma engineering," *US/Japan Workshop on RFP Reactor Studies*, UCLA, Los Angeles, CA, July 20-24, 1987.
17. **F. Najmabadi**, "Key technical issues of the TITAN-1 high mass power density RFP reactor," *US/Japan Workshop on RFP Reactor Studies*, Q93, UCLA, Los Angeles, CA, July 20-24, 1987.
18. **F. Najmabadi**, "TITAN plasma accidents simulations," *US/Japan Workshop on RFP Reactor Studies*, UCLA, Los Angeles, CA, July 20-24, 1987.

19. **F. Najmabadi**, "Advances in fusion reactor design-the TITAN reversed-field pinch reactor study," *Fusion Power Associates Symposium Fusion Energy Development*, Princeton, NJ, August 27-28, 1987. **invited**
20. E. Zawaideh, N. S. Kim, and **F. Najmabadi**, "A generalized electron heat conduction model for collisional to weakly collisional plasmas," *29<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 32, 1987), San Diego, CA, November 2-6, 1987.
21. N. S. Kim, E. Zawaideh, and **F. Najmabadi**, "Particle and energy flow in the electric sheath and presheath for collisional to weakly collisional plasmas," *29<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 32, 1987), San Diego, CA, November 2-6, 1987.
22. **F. Najmabadi**, E. Zawaideh, and N. S. Kim, "The structure of electric presheath and sheath," *29<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 32, 1987), San Diego, CA, November 2-6, 1987.
23. R. W. Conn and **F. Najmabadi**, "The TITAN reversed-field pinch fusion reactor study," *29<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 32, 1987), San Diego, CA, November 2-6, 1987. **invited**
24. **F. Najmabadi** and the ARIES Research Group, "The ARIES tokamak fusion reactor study-the scoping phase," *8<sup>th</sup> Topical Meeting on the Technology of Fusion Energy*, Salt Lake City, UT, October 9-13, 1988.
25. R. W. Conn and **F. Najmabadi**, "Trends in fusion reactor design," *8<sup>th</sup> Topical Meeting on the Technology of Fusion Energy*, Salt Lake City, UT, October 9-13, 1988. **plenary**
26. E. Vold, **F. Najmabadi**, and R. W. Conn, "Two-dimensional time-dependent transport in the tokamak edge-plasma region," *30<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 33, 1988), October 31 - November 4, 1988, p. 2104.
27. A. Grossman, L. Schmitz, **F. Najmabadi**, and R. W. Conn, "Hybrid electrostatic/ponderomotive barriers for boundary layer transport control," *30<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 33, 1988), October 31 - November 4, 1988.
28. **F. Najmabadi**, "The ARIES tokamak reactor study," *Japan/U.S. workshop on tokamak power reactors*, P153, Japan Atomic Energy Institute, Naka, Japan, May 29-31, 1989.
29. E. Vold, **F. Najmabadi**, and R. W. Conn, "Computational analysis of poloidal asymmetries in the tokamak plasma edge," *31<sup>st</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 34, 1989), Anaheim, CA, November 13-17, 1989, p. 2137.
30. E. Zawaideh, N. S. Kim, and **F. Najmabadi**, "Modeling of a collisionless (low pressure) capacitively-driven RF discharge," *31<sup>st</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 34, 1989), Anaheim, CA, November 13-17, 1989, p. 2027.
31. N. S. Kim, E. Zawaideh, and **F. Najmabadi**, "Modeling of DC and RF discharges with high pressure and negative ions," *31<sup>st</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 34, 1989), Anaheim, CA, November 13-17, 1989, p. 2027.
32. **F. Najmabadi**, E. Zawaideh, and N. S. Kim, "Time dependent transport in the plasma sheath and presheath for collisional to weakly collisional plasmas," *31<sup>st</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 34, 1989), Anaheim, CA, November 13-17, 1989, p. 2027.
33. **F. Najmabadi** and R. W. Conn, "The ARIES-I tokamak Reactor Study," *ANS 9<sup>th</sup> Topical Meeting on the Technology of Fusion Energy*, Oak Brook, IL, October 7-11, 1990. **invited**
34. **F. Najmabadi**, "The ARIES-I tokamak reactor study," *U.S./Japan Workshop on Tokamak Power Reactors*, University of California, Los Angeles, October 15-17, 1990.
35. M. Kikuchi, R. W. Conn, **F. Najmabadi**, and Y. Seki, "Recent directions in plasma physics and their impact on tokamak magnetic fusion design," *2<sup>nd</sup> International Symposium on Fusion Nuclear Technology, ISFNT-2*, Karlsruhe, Germany, June 2-7, 1991. **plenary**

36. R. W. Conn, A. Glass, and **F. Najmabadi**, "Prospects for a practical and economic tokamak power plant and the role of ITER," *International Conference on Emerging Nuclear Energy Systems*, Monterey, CA, June 16-21, 1991. **plenary**
37. **F. Najmabadi**, "ARIES-I, a safe, environmentally attractive fusion reactor design," *33<sup>rd</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 36, 1991), Tampa, FL, November 4-8, 1991, p. 2479. **invited**
38. A. A. Grossman, L. Schmitz, **F. Najmabadi**, and R. W. Conn, "Hybrid electrostatic/ponderomotive barriers for boundary layer transport control," *33<sup>rd</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 36, 1991), Tampa, FL, November 4-8, 1991, p. 2491.
39. M. Day, B. Merriman, **F. Najmabadi**, and R. W. Conn, "Plasma/neutral fluid simulations on a non-orthogonal finite volume mesh," *33<sup>rd</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 36, 1991), Tampa, FL, November 4-8, 1991, p. 2434.
40. R. Doerner, R. W. Conn, Y. Hirooka, **F. Najmabadi**, *et al.*, "Super-PISCES, an ITER/PMI component test facility," *33<sup>rd</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 36, 1991), Tampa, FL, November 4-8, 1991, p. 2426.
41. **F. Najmabadi**, "Overview of U.S. fusion reactor studies activities," *Japan/U.S. Workshop On Tokamak Power Reactors With European Community Participation*, Japan Atomic Energy Institute, Naka, Japan, March 9-11, 1992.
42. **F. Najmabadi**, "The ARIES-III D-<sup>3</sup>He tokamak reactor study," *Japan/U.S. Workshop On Tokamak Power Reactors With European Community Participation*, Japan Atomic Energy Institute, Naka, Japan, March 9-11, 1992.
43. **F. Najmabadi**, "The ARIES tokamak reactor Studies," *Fusion Power Associates Annual Meeting and Symposium*, Pleasanton, CA, April 9, 1992. **invited**
44. R. W. Conn, **F. Najmabadi**, and the ARIES Team, "The ARIES tokamak reactor study and implications for next generation devices," *10<sup>th</sup> ANS Topical Meeting on the Technology of Fusion Energy*, Boston, MA, June 7-12, 1992. **invited**
45. **F. Najmabadi** and R. W. Conn, "The ARIES-II and ARIES-IV second-stability tokamak reactors," *10<sup>th</sup> ANS Topical Meeting on the Technology of Fusion Energy*, Boston, MA, June 7-12, 1992. **invited**
46. M. Day, B. Merriman, **F. Najmabadi**, and R. W. Conn, "Application of a non-orthogonal edge fluid code for the ITER divertor," *34<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 37, 1992), November 4-8, 1992, p. 1507.
47. S. Sharafat and **F. Najmabadi**, "Advanced composites for nuclear applications," *ANS Topical Meeting on National Critical Technologies and Advanced Technology Applications (Trans. ANS, Vol. 68B, 1993)*, San Diego, CA, June 20-24, 1993, p. 13-14.
48. R. W. Conn and **F. Najmabadi**, "The ARIES-III D-<sup>3</sup>He tokamak reactor study," at *2<sup>nd</sup> Wisconsin Symposium on <sup>3</sup>He and Fusion Power*, University of Wisconsin, Madison, WI, July 19-21, 1993. **invited**
49. **F. Najmabadi**, "Lessons from the ARIES study: directions for an attractive tokamak power plants," *15<sup>th</sup> IEEE Symposium on Fusion Engineering*, Hyannis, MA, October 11-15, 1993. **invited**
50. M. S. Day, B. Merriman, **F. Najmabadi**, and R. W. Conn, "Discretization issues for highly anisotropic fluids," *35<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 38, 1993), St. Louis, MO, November 1-5, 1993, p. 1892.
51. B. Merriman, L. Schmitz, L. Blush, A. Grossman, R. Lehmer, **F. Najmabadi**, and R. W. Conn, "Gas-target divertors for ITER and TPX: results from a coupled plasma/neutral fluid code," *35<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 38, 1993), St. Louis, MO, November 1-5, 1993, p. 1920.
52. B. J. Lee, B. Merriman, R. W. Conn, T. K. Mau, and **F. Najmabadi**, "Tokamak equilibria with toroidal and poloidal flows," *35<sup>th</sup> APS Division of Plasma Physics Annual Meeting*, (*Bull. Am. Phys. Soc.*, Vol. 38, 1993), St. Louis, MO, November 1-5, 1993, p. 1946.

53. **F. Najmabadi**, "Overview of the PULSAR Studies: a pulsed tokamak fusion power plant," *U.S./Japan workshop on tokamak power reactor studies, Q185*, University of California, San Diego, March 14-17, 1994.
54. **F. Najmabadi** and R. W. Conn, "Summary of the PULSAR/ARIES studies," *3<sup>rd</sup> International Symposium on Fusion Nuclear technology, ISFNT-3*, Los Angeles, CA June 27 - July 1, 1994. **plenary**
55. R. W. Conn and **F. Najmabadi**, "Assessment of fusion power plants based on pulsed tokamak operation: the PULSAR study," *5<sup>th</sup> IAEA International Conference on Plasma Physics and Controlled Fusion Research*, Seville, Spain, September 26 – October 1, 1994.
56. B. J. Lee, **F. Najmabadi**, and L. Schmitz, "Modeling of a high-pressure gas-target divertor," *36<sup>th</sup> APS Division of Plasma Physics Annual Meeting, (Bull. Am. Phys. Soc., Vol. 39, 1994)*, Minneapolis, MI, November 7-11, 1994, p. 1710.
57. L. Schmitz, B. Merriman, A. Grossman, L. Blush, R. Lehmer, **F. Najmabadi**, and R. W. Conn, "Fluid simulations of an ITER gas-target divertor with impurity radiation," *36<sup>th</sup> APS Division of Plasma Physics Annual Meeting, (Bull. Am. Phys. Soc., Vol. 39, 1994)*, Minneapolis, MI, November 7-11, 1994, p. 1172.
58. **F. Najmabadi**, "Perspective on fusion power plants," panel on "Fusion power," at *IEEE Power Society Winter Meeting*, IEEE, New York, January 29 - February 2, 1995. **invited**
59. **F. Najmabadi**, "Comparison of pulsed and steady-state tokamak power plants," *International Energy Agency (IEA) Workshop on "Technology of Steady-State Fusion Systems*, Max-Planck-Institut Fur PlasmaPhysik, Garching, Germany, February 20-23, 1995.
60. **F. Najmabadi**, "Overview of U.S. fusion power plant studies program," *Japan/U.S. Workshop On Tokamak Power Reactors With China And European Community Participation, P246*, Kyoto University, Kyoto, Japan, March 13-16, 1995.
61. **F. Najmabadi**, "Characteristics of fusion power plants," Panel on "Future energy support - is fusion a solution," *1995 ANS Annual Meeting*, Philadelphia, PA, June 25-29, 1995. **invited**
62. **F. Najmabadi**, "The Starlite project: mission, requirements, and features of fusion demo," *IEEE 16th Symposium on Fusion Energy*, Champaign, IL, September 30-October 5, 1995. **invited**
63. B. J. Lee, **F. Najmabadi**, L. Schmitz, "Slot Divertor Modeling for a Fusion Power Plant," *37<sup>th</sup> APS Division of Plasma Physics Annual Meeting, (Bull. Am. Phys. Soc., Vol. 40, 1995)*, Louisville, KE, November 6-10, 1995, p. 1727.
64. **F. Najmabadi**, "The Starlite study: mission, requirements, and R&D needs of the fusion demo," *1996 Fusion Power Associates Annual Meeting and Symposium, "The Approach to Fusion Ignition and Beyond"*, Pleasanton, CA, May 30-31, 1996. **invited**
65. **F. Najmabadi**, "Assessment of engineering options for attractive commercial and demonstration tokamak fusion power plant," *12<sup>th</sup> ANS Topical Meeting on Fusion Engineering*, Reno, NV, June 16-20, 1996. **invited**
66. R. W. Conn, **F. Najmabadi**, and M. S. Tillack, "Prospects and issues for commercial fusion power systems," *4<sup>th</sup> International Symposium on Fusion Nuclear Technology, ISFNT-4*, Tokyo, Japan, April 6-11, 1997. **plenary**
67. **F. Najmabadi**, "Overview of ARIES-RS tokamak fusion power plant," *4<sup>th</sup> International Symposium on Fusion Nuclear Technology, ISFNT-4*, Tokyo, Japan, April 6-11, 1997. **invited**
68. **F. Najmabadi**, "Potential of tokamaks as attractive fusion power plants," *1997 Fusion Power Associates Symposium*, Snowmass, CO, August 27-29, 1997. **invited**
69. **F. Najmabadi**, "The ARIES spherical tokamak power plant, study," *17<sup>th</sup> IEEE Symposium on Fusion Engineering*, San Diego, CA October 6-9, 1997. **invited**
70. **F. Najmabadi**, "Overview of the ARIES fusion power plant studies," *6<sup>th</sup> IAEA Technical Committee Meeting on Fusion Power Plant Studies*, Culham Laboratories, United Kingdom, March 24-28, 1998.

71. **F. Najmabadi**, "Fusion Power Plants," *The Royal Society Discussion Meeting, "The approach to an ignited plasma,"* The Royal Society, London, July 16, 1998. **invited**
72. **F. Najmabadi**, "Progress toward and opportunities for attractive magnetic fusion power plants," *Fusion Power Associate Meeting on Cost effective Steps to Fusion Power*, Marina Del Rey, CA, January 25-27, 1999. **invited**
73. **F. Najmabadi**, "Advanced design activities in US," *Japan/US Workshop On Fusion Power Plant Studies And Related Advanced Technologies With China, European Community, And Russia Participation*, P246, Kyoto University, Kyoto, Japan, March 24-26, 1999.
74. **F. Najmabadi**, "Overview of the ARIES-ST study," presentation at *Japan/US workshop on fusion power plant studies and related advanced technologies with China, European Community, and Russia participation*, P246, Kyoto University, Kyoto, Japan, March 24-26, 1999.
75. **F. Najmabadi**, "Optimization of spherical torus as power plants -- the ARIES-ST study," *5<sup>th</sup> International Symposium on Fusion Nuclear Technology, ISFNT-5*, Rome, Italy, September 20-24, 1999.
76. **F. Najmabadi**, "Requirements and designs for IFE and MFE first wall and blankets," *2nd Japan/US Workshop on Laser-driven Inertial Fusion Energy*, Institute of Laser Engineering, Osaka University, Osaka, Japan, November 5-6, 1999.
77. **F. Najmabadi**, "Status of advanced design studies and overview of ARIES-AT study," *US/Japan Workshop on Fusion Power Plant Studies & Advanced Technologies with E.U. Participation*, UC San Diego, San Diego, CA, March 16-18, 2000.
78. **F. Najmabadi**, "Characteristics of commercial fusion power plants, results from ARIES-AT study," *Fusion Power Associates Annual Meeting & Symposium, "Science and Technology for Fusion Power,"* Institute of the Americas, UC San Diego, San Diego, CA, July 17, 2000. **invited**
79. **F. Najmabadi**, "Impact of advanced technologies on fusion power plant characteristics: the ARIES-AT study," *14<sup>th</sup> ANS Topical Meeting on the Technology of Fusion Energy*, Park City, UT, October 15-19, 2000. **plenary**
80. M. S. Tillack, **F. Najmabadi**, and the ARIES Team, "ARIES inertial fusion chamber assessment," *14<sup>th</sup> ANS topical meeting on Fusion Energy*, Park City, UT, October 15-19, 2000. **invited**
81. **F. Najmabadi**, "Laser-Driven IFE power plants – initial results from ARIES-IFE study," *3<sup>rd</sup> US/Japan Workshop on Laser-Driven Inertial Fusion Energy*, Lawrence Livermore National Laboratory, Livermore, CA, January 25-27, 2001.
82. **F. Najmabadi**, "ARIES-AT: evolution of vision for advanced tokamak power plants," *US/Japan Workshop on Fusion Power Plant Studies & Advanced Technologies with E.U. Participation*, University of Tokyo, Tokyo, Japan, March 29-31, 2001.
83. **F. Najmabadi**, "Contribution of burning plasma physics experiments to fusion energy goals," *2<sup>nd</sup> UFA workshop on Burning Plasma Science*, San Diego, CA, May 1-2, 2001. **invited**
84. **F. Najmabadi**, "Design windows for IFE chamber and target injection," *US/Japan Workshop on IFE Target Fabrication*, San Diego, CA, December 3-4, 2001.
85. **F. Najmabadi**, "Overview of US power plant studies," *US/Japan Workshop on Fusion Power Plant Studies & Advanced Technologies with E.U. Participation*, San Diego, CA, April 6-7, 2002.
86. **F. Najmabadi**, "Design windows and trade-offs for inertial fusion energy power plants," *6<sup>th</sup> International Symposium on Fusion Nuclear Technology, ISFNT-6*, San Diego, CA, April 8-12, 2002. **invited**
87. **F. Najmabadi**, "Physics issues and trade-offs in magnetic fusion power plants," *APS April 2002 Meeting (Bull. Am. Phys. Soc., Vol. 47-2*, 2002, Albuquerque, NM, April 20-23, 2002, pp. 84-85.
88. **F. Najmabadi**, "Overview of US power plant studies: A) Results from ARIES-IFE study, B) Plans for compact stellarator," *US/Japan Workshop on Fusion Power Plant Studies & Advanced Technologies with E.U. Participation*, UC San Diego, CA, October 9-11, 2003.

89. **F. Najmabadi**, "Recent results from US magnetic fusion power plant studies," *German Nuclear Society Annual Meeting on Nuclear Technology 2004*, Düsseldorf, Germany, May 25-27, 2004. **invited**
90. **F. Najmabadi**, "ARIES-ST: a spherical torus fusion power plant," at *International School of Fusion Reactor Technology 9<sup>th</sup> Course of Technology of Fusion Tokamak Reactors*, Ettore Majorana Foundation and Center, Erice, Italy, July 26 – August 1, 2004. **invited lecture**
91. **F. Najmabadi**, "ARIES-AT: an advanced tokamak, advanced technology fusion power plant," at *International School of Fusion Reactor Technology 9<sup>th</sup> Course of Technology of Fusion Tokamak Reactors*, Ettore Majorana Foundation and Center, Erice, Italy, July 26 – August 1, 2004. **invited lecture**
92. **F. Najmabadi**, "ARIES-IFE assessment of operational windows for IFE power plants," *16<sup>th</sup> ANS Topical Meeting on the Technology of Fusion Energy, TOFE-16*, Madison, WI, September 14-16, 2004. **invited**
93. **F. Najmabadi**, "Perspectives on fusion electric power plants: critical R&D issues," *Fusion Power Associates Annual Meeting and Symposia*, Washington, DC, December 13, 2004. **invited**
94. **F. Najmabadi**, "Overview of ARIES compact stellarator power plant study," *Japan/US Workshop on Fusion Power Plant Studies & Advanced Technologies with E.U. Participation*, University of Tokyo, Japan, January 11-13, 2005.
95. **F. Najmabadi**, "Optimization of a steady-state tokamak-based power plant," *International Energy Agency (IEA) Workshop on Shape and Aspect Ratio Optimization For High  $\beta$ , Steady-State Tokamak*, General Atomics, San Diego, CA, February 14-15, 2005. **invited**
96. **F. Najmabadi**, "Characteristics of an economically attractive fusion power plant," *American Association for Advancement of Science (AAAS) Annual Meeting*, Washington DC, February 18-20, 2005.
97. **F. Najmabadi**, "IFE chambers: modeling and experiments at UCSD," *5<sup>th</sup> US-Japan Workshop on Laser IFE*, General Atomics, San Diego, March 21-23, 2005.
98. **F. Najmabadi**, "Impact of scientific and technological developments on fusion costs," *International Energy Agency (IEA) workshop on Socioeconomics of Fusion*, Culham Science Centre, United Kingdom, April 19-21, 2005.
99. **F. Najmabadi**, "Physics and technology trade-offs in optimizing compact stellarators as power plants," *21<sup>st</sup> IEEE Symposium on Fusion Engineering*, Knoxville, TN, September 26-29, 2005. **invited**
100. Z. Dragojlovic and **F. Najmabadi**, "Hydrodynamic evolution of IFE chambers with different protective gases and pre-ignition conditions," *21<sup>st</sup> IEEE Symposium on Fusion Engineering*, Knoxville, TN, September 26-29, 2005. **invited**
101. **F. Najmabadi**, "Optimization of compact stellarator configuration as fusion devices," *47<sup>th</sup> APS/DPP Annual Meeting*, Denver, CO, October 23-28, 2005. **invited**
102. **F. Najmabadi**, "Impact of advances in fusion physics & technology on the attractiveness of tokamak power plants," *22<sup>nd</sup> annual meeting of Japan Society of Plasma Science & Nuclear Fusion Research*, Tokyo, Japan, December 1, 2005. **invited**
103. **F. Najmabadi**, "Recent progress in ARIES compact stellarator study," *15<sup>th</sup> International Toki Conference*, Toki, Japan, December 6-9, 2005. **invited**
104. **F. Najmabadi**, "The future prospects of fusion power plants," *Massachusetts Institute of Technology IAP*, January 10, 2006. **invited**
105. **F. Najmabadi**, "Towards attractive fusion power plants," *Korean National Fusion Research Center*, Daejeon, Korea April 20, 2006. **invited**
106. **F. Najmabadi**, "Prospects for attractive fusion power plants," *18<sup>th</sup> Korean Atomic Industry Forum/Korean Nuclear Society Meeting*, Seoul, Korea April 21, 2006. **invited**

### B.iii. Other Presentations/Works

1. **F. Najmabadi**, contributing author, "MARS, mirror advanced reactor study, final report," *Lawrence Livermore National Laboratory report UCRL-53480OB*, 1984.
2. R. W. Conn, N. M. Ghoniem, **F. Najmabadi**, J. P. Blanchard, M. A. Firestone, D. M. Goebel, S. P. Grotz, F. Kantrowitz, C. E. Kessel, T. K. Mau, K. Taghavi, M. Z. Youssef, and E Zawaideh, "START/TM report: study of start-up and fractional power operation of tandem mirror fusion reactors," *UCLA report UCLA- PPG-764*, 1984.
3. **F. Najmabadi**, N. M. Ghoniem, R. W. Conn, J. P. Blanchard, Y. Chu, P. I. H. Cooke, S. P. Grotz, M. Z. Hasan, C. E. Kessel, R. C. Martin, A. K. Prinja, *et al.*, "The TITAN reversed-field pinch reactor study-the scoping phase report," *Joint report of UCLA, LANL, GA, and RPI, UCLA-PPG-1100*, 1987.
4. **F. Najmabadi**, N. M. Ghoniem, R. W. Conn, J. P. Blanchard, Y. Chu, P. I. H. Cooke, S. P. Grotz, M. Z. Hasan, C. E. Kessel, R. C. Martin, A. K. Prinja, *et al.*, "The TITAN reversed-field pinch reactor study-the final report," *Joint report of UCLA, LANL, GA, and RPI, UCLA-PPG-1200*, 1990.
5. **F. Najmabadi**, "Physics aspects of tokamak fusion reactors," *presentation at Symposium on Future Devices, Transport Task Force Workshop*, Hilton Head, SC, February 18-23, 1990. **invited presentation**
6. J. Sheffield, **F. Najmabadi**, and R. A. Krakowski, "Magnetic fusion reactor potential and studies," *presentation to the Secretary of Energy's Fusion Policy Advisory Committee*, Oak Ridge National Laboratory, Oak Ridge, TN, April 17, 1990. **invited presentation**
7. **F. Najmabadi**, "ARIES-prospects for tokamak fusion reactors," *presentation to the Secretary of Energy's Fusion Policy Advisory Committee*, San Diego, CA, May 3, 1990. **invited presentation**
8. **F. Najmabadi**, "Steady-state reactors and ARIES perspective," *presentation at Steady-State Tokamak Experiment Workshop*, General Atomics, San Diego, CA, October 30-November 1, 1990.
9. **F. Najmabadi**, R. W. Conn, P. I. H. Cooke, S. P. Grotz, M. Z. Hasan, E. Ibrahim, T. Kunugi, T. K. Mau, R. C. Martin, S. Sharafat, *et al.*, "The ARIES-I tokamak fusion reactor study-the final report," *UCLA-PPG-1323*, 1991.
10. R. W. Conn and **F. Najmabadi**, "The ARIES tokamak reactor study," *presentation to the Secretary of Energy's Fusion Energy Advisory Committee*, US Department of Energy, Washington, DC, September 1991. **invited presentation**
11. **F. Najmabadi** and R. W. Conn, "The Advanced tokamak Experiment: ARIES-I/II scaled-down option," *presentation at Post-TFTR Initiatives Workshop*, Plasma Fusion Center, MIT, Cambridge, MA, October 25-26, 1991.
12. **F. Najmabadi**, "The ARIES tokamak reactor study and implications for tokamak research," *presentation at Princeton Plasma Physics Laboratory*, Princeton, NJ, November 1991. **colloquium**
13. R. W. Conn, **F. Najmabadi**, S. Sharafat, K. R. Schultz, and R. A. Krakowski, "The requirements of a fusion demonstration reactor and the Starlite study," *UCLA report, UCLA-PPG-1394*, 1992.
14. **F. Najmabadi**, R. W. Conn, and the ARIES Team, "The ARIES-III tokamak fusion reactor study-the final report," *UCLA report UCLA- PPG-1384*, 1992.
15. **F. Najmabadi**, "Fusion technologies," in **Encyclopedia of Applied Physics**, American Institute of Physics, Vol. 7, VCH Publishers, 1993, pp. 1-19.
16. **F. Najmabadi**, "Implications of the ARIES study for steady state tokamaks," *presentation at the 2nd International Workshop on Steady-State Devices*, Princeton Plasma Physics Laboratory, Princeton, NJ, January 5-7, 1993.
17. **F. Najmabadi**, "Towards an Attractive Fusion Reactor: Implications of the ARIES Study," *presentation at General Atomic Colloquium*, General Atomics, San Diego, CA, April 7, 1993. **colloquium**

18. **F. Najmabadi**, "Fusion energy advisory committee (FEAC) panel 7 report on IFE technologies and reactor studies," *presentation to Fusion Energy Advisory Committee*, April 15, 1993.
19. Contributing author, "US design support study for the ITER divertor," *McDonnell Douglas Aerospace report, MDC 93B0544 ITER/US/93/IV-PF-3*, October 1993.
20. S. Sharafat, A. El-Azab, and **F. Najmabadi**, "Comments on silicon-carbide design limits for fusion applications," *UCLA report UCLA-PPG-1471*, November 1993.
21. **F. Najmabadi**, "Fusion safety and licensing: suggestions from the utility advisory committee of fusion power plant studies program," *presentation to US Department of Energy Fusion Safety Steering Committee*, DOE, Germantown, MD, May 17, 1994.
22. A. Grossman, B. Merriman, L. Schmitz, and **F. Najmabadi**, "Numerical models of the gas-target divertor," *National Energy Research Supercomputer Center Buffer*, Vol. 19, 1995, pp. 8-10.
23. **F. Najmabadi**, R. W. Conn, and the ARIES Team, "The pulsed-tokamak fusion power plant-the pulsar study," *UC San Diego Report UCSD-ENG-003*, 1995.
24. **F. Najmabadi**, "Perspectives of fusion demo and its R&D needs," ITER Lecture, *presentation at the International Thermonuclear Experimental Reactor (ITER) Joint Work Site*, March 24, 1995. **lecture**
25. **F. Najmabadi**, "Fusion power plants based on reversed-shear tokamak plasmas," *presentation to TPX Program Advisory Council*, General Atomics, San Diego, CA, September 25, 1995. **invited presentation**
26. **F. Najmabadi**, "The STARLITE project: mission, requirements, and features of fusion demo." *Colloquium presentation at Lawrence Livermore National Laboratory, LLNL, Livermore, CA, October 24, 1995.* **colloquium**
27. R. Miller, **F. Najmabadi**, X. Wang, D. K. Sze, T. J. Dolan, P. R. Garabedian, J. F. Lyon, J. A. Rome, J. L. Johnson, L. A. El-Geubaly, I. N. Sviatoslavsky, D. A. Anderson, J. Crowell, H. Y. Khater, T. Kupiszewski, and O. R. Christianson, "The stellarator power plant study," *UC San Diego Report UCSD-ENG-004*, 1997.
28. **F. Najmabadi**, M. S. Tillack, R. L. Miller, T. K. Mau, B. J. Lee, X. Wang, D. K. Sze, M. Billone, D. A. Ehst, L. M. Waganer, *et al.*, "The starlite study: assessment of options for tokamak power plants," *UC San Diego report UCSD-ENG-005*, 1997.
29. **F. Najmabadi**, "The ARIES-RS Reversed-Shear Power tokamak Power Plant," *Colloquium presentation at General Atomics*, San Diego, CA, June 1997. **colloquium**
30. M. Tillack, **F. Najmabadi**, N. B. Morley, and R. Mori, "Inertial fusion chamber R&D needs – a white paper," *UCSD Report UCSD-ENG-090*, 1998.
31. **F. Najmabadi**, "Towards an attractive fusion power plant," *presentation at University Fusion Associates (FPA) Forum on Next Step Device*, U. Wisconsin, Madison, WI, April 27-May 1, 1998.
32. **F. Najmabadi**, "Magnetic Fusion Power Plants," *presentation at MFE-IFE Workshop*, Princeton Plasma Physics Laboratory, Princeton, NJ, September 14-16, 1998. **invited presentation**
33. R. W. Conn and **F. Najmabadi**, "Environmental, safety, and economics studies of magnetic fusion, including power plant design studies," *presentation to Secretary Energy Advisory Board (SEAB) Task Force on Fusion Energy*, Princeton Plasma Physics Laboratory, Princeton, NJ, April 28, 1999.
34. **F. Najmabadi et al.**, "Summary report of the energy issues working group," *presentation at 1999 Fusion Summer Study*, Snowmass, CO, July 12-23, 1999.
35. **F. Najmabadi**, "Impact of liquid wall on fusion systems," *presentation to National Research Council (NRC) Fusion Science Assessment Committee*, Seattle, Washington, November 17, 1999. **invited presentation**
36. **F. Najmabadi**, "Initial results from ARIES-IFE studies," *presentation at Heavy-ion IFE Workshop*, Lawrence Livermore National Laboratory, Livermore, CA, July 23-24, 2001.

37. D. T. Goodin, R. W. Petzoldt, A. Nikroo, E. Stephens, N. Siegel, N. B. Alexander, T. K. Mau, M. Tillack, **F. Najmabadi**, and R. Gallix, "Target survival during injection in an inertial fusion energy power plant," *General Atomics Report GA-A23870*, April 2002.
38. **F. Najmabadi**, M. S. Tillack, and A. R. Raffray, "High-average-power laser program optics and chamber studies: report on research performed during FY01," *UCSD report UCSD-ENG-094*, May 1, 2002.
39. M. S. Tillack, **F. Najmabadi**, and A. R. Raffray, "High-average-power laser program optics and chamber studies: report on research performed during FY02," *UCSD report UCSD-ENG-105*, October 1, 2003.
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