

**George Alanson Greene**  
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### **SUMMARY**

The career of Dr. George Alanson Greene has included significant and diverse contributions and accomplishments in scientific research, teaching and publishing. His research began with investigations into the safety of liquid metal breeder reactors, then were extended to investigations into the safety of light water, heavy water and research reactors, as well as pressurized water reactors of the former Soviet Union. He redirected his interests to research involving particle accelerators, where his interests and research include the high-temperature behavior of accelerator materials, proton activation and radiation damage in superconductors, cryogenic energy deposition and isotope production. His publishing activities as Associate Editor of the acclaimed serial publication Advances in Heat Transfer have provided a significant service to the scientific community. Dr. Greene has been a continuous member of the ASME and the Heat Transfer Division since 1974. He has served the ASME in several capacities over the years, such as chairman of technical sessions at national conferences, member of the K-8 Committee of the Heat Transfer Division, and a member of an ASME expert panel on thermophysical properties. He received his Ph. D. in 1980 from the State University of New York at Stony Brook. He was elected to the grade of Fellow of the ASME in October 2000.

Dr. Greene was the Group Leader of the Experimental Heat Transfer and Fluid Dynamics Group for 10 years, which numbered up to ten scientists, engineers and technicians actively pursuing research in nuclear reactor and accelerator technologies. He managed the day-to-day R&D activities of the group and was responsible for administering to schedules, budgets, presentations and program deliverables in a wide range of subjects to numerous sponsors. It was his responsibility to secure research funds, primarily through government sources, for the research and development activities of the group. He administered a budget of up to \$1.5M annually and was the principal technical/administrative representative to those funding agencies.

Dr. Greene has been an active teaching and research member of the faculty of the State University of New York at Stony Brook as an Adjunct Professor of Mechanical Engineering since 1984. He has taught core curriculum courses in mechanical engineering, such as Fluid Mechanics, Heat and Mass Transfer, and the Undergraduate Mechanical Engineering Laboratory course. He has supervised the thesis and dissertation research of 13 students, two of which were Ph.D. dissertations [M. Duignan, "Enhanced Convective and Film Boiling Heat Transfer by Surface Gas Injection" (1992); M. Capobianchi, "A New Technique for Measuring the Fickian Diffusion Coefficient in Binary Liquid Solutions" (1996)]. As an Adjunct Professor, he participated in the engineering accreditation activities of the Mechanical Engineering Department in both 1989 and 1996. He received one of the highest student-evaluations in the history of the Mechanical Engineering Department. He was co-principle investigator of a university research project and initiated an undergraduate co-op program between the Mechanical Engineering Department and the Brookhaven National Laboratory.

He has consulted for numerous industrial and government agencies, including the U.S. Nuclear Regulatory Commission, the U.S. Department of Energy, the DOE Advisory Committee on Nuclear Facility Safety, Sandia and Los Alamos National Laboratories, the Westinghouse

Savannah River Company, the DOE Office of New Production Reactors, the Korea Atomic Energy Research Institute and Facility Energy Services, Inc. of New Canaan, CN. He is the author, editor or contributor of over 120 publications.

### **PROFESSIONAL EXPERIENCE**

**1976 to Present:**      **BROOKHAVEN NATIONAL LABORATORY**  
Scientist, Mechanical Engineer  
Upton, New York 11973-5000

Scientist:	October 1983
Associate Scientist:	May 1981
Assistant Scientist:	January 1980
Engr. Associate:	February 1977
Research Associate:	June 1976

**1984 to Present:**      **STATE UNIVERSITY OF NEW YORK**  
Adjunct Professor of Mechanical Engineering  
Stony Brook, New York 11794-2300

Co-op Program Coordinator:	June 1992
Associate Professor:	November 1989
Assistant Professor:	November 1984

Taught courses in mechanical engineering and instructed undergraduate students in heat transfer, fluid mechanics, and laboratory research in the Department of Mechanical Engineering. Supported and supervised the research of thirteen students at the B.S., M.S. and Ph.D. levels. Supervised two Ph.D. dissertations. Participated in SUSB Engineering Accreditation activities in 1989 and 1996. Co-principal investigator of university research project. Initiated SUSB-BNL undergraduate co-op program in 1992.

**1993 to Present:**      **ACADEMIC PRESS, INC.**  
Associate Editor of the Serial Publication, Advances in Heat Transfer  
San Diego, California 92101

Appointed to the technical editorial staff of the serial publication entitled Advances in Heat Transfer. Responsible for coordinating the publication of annual volumes in the book series, including recruitment of contributors, coordination of schedules with contributors, review of full-length manuscripts and coordination with the staff of Academic Press to insure the high technical quality and adherence with the publication schedule for the book series.

**1965 to 1969:**      **UNITED STATES ARMY**  
Officer and Company Commander of an armored cavalry company in the 11<sup>th</sup>  
Armored Cavalry Regiment in armed conflict in the Republic of South Vietnam.

## **EDUCATION**

STATE UNIVERSITY OF NEW YORK, Stony Brook, New York 11794-2300

1972 B.E.S. Cum Laude, Engineering Science (May 1972)

1974 M.S., Mechanical Engineering (December 1974)

Thesis: "A Hydrodynamic Study of the Starr-Edwards Model 2320 Aortic Heart Valve"

1980 Ph.D., Mechanical Engineering (November 1980)

Dissertation: "Experimental and Analytical Study of Natural Convection Heat Transfer of Internally Heated Fluids"

## **ADJUNCT ACADEMIC EXPERIENCE**

Academic Appointments:

Co-op Program Coordinator - SUNY Stony Brook (1992)

Adjunct Associate Professor - SUNY Stony Brook (1989)

Adjunct Assistant Professor - SUNY Stony Brook (1984)

Teaching Experience:

Heat and Mass Transfer, ESC 305

Fluid Mechanics, ESC 398

Mechanical Engineering Laboratory, ESC 317

University Research Supervision:

Supervised research of thirteen SUSB students

Supervised two Ph.D. dissertations

External examiner on six Ph.D. dissertation committees

## **CURRENT AREAS OF RESEARCH INTEREST**

Spallation Physics

Radiation Damage

High Temperature Chemistry

Cryogenic Heat Transfer

Film Boiling Heat Transfer

Enhanced Boiling and Steam Explosions

Multiphase Heat Transfer

Natural Convection

Transient Melt Spreading

Droplet and Bubble Dynamics

Hydrodynamics and Heat Transfer of Entrainment

Aerosol Decontamination and Transport

Volumetric Boiling Heat Transfer

Liquid Metal Heat Transfer

Mass Transfer

## **HONORS, ACHIEVEMENTS AND PROFESSIONAL AFFILIATIONS**

Elected to the grade of Fellow of the American Society of Mechanical Engineers.  
Distinguished Military Graduate, Officer Candidate School.  
Military Decorations: Silver Star (3), Bronze Star with V (4), Army Commendation Medal with V, Purple Heart (5), Vietnamese Cross of Gallantry, others.  
Adjunct Professor, SUNY Stony Brook.  
Licensed Professional Engineer (NY), Certificate No. 24514.  
Tau Beta Pi (Member since 1971).  
American Society of Mechanical Engineers (Fellow since 2000, Member since 1972).  
American Institute of Chemical Engineers (Member since 1989).  
Member, AIChE Multiphase Heat Transfer Technical Committee.  
Sigma Xi (Member since 1989).  
American Association for the Advancement of Science (Member since 1989).  
Consultant to USNRC, DOE Advisory Committee on Nuclear Facility Safety, OECD-CSNI, Facility Energy Services, Inc., New Canaan, CN, DOE Office of Nuclear Facility Safety, Sandia National Laboratory, Westinghouse Savannah River Company, DOE Office of New Production Reactors, Korea Atomic Energy Research Institute.  
Editor of the Book Series, Advances in Heat Transfer (Academic Press).

## **OTHER PROFESSIONAL ACTIVITIES**

Participant/Analyst in USNRC NUREG-0956 study.  
Participant/Analyst in USNRC NUREG-1150 study.  
Participant/Analyst in USNRC Containment Loads Working Group.  
Participant in USNRC Containment Performance Working Group.  
Participant in USNRC Source Term Review Study (1/87).  
Member/Co-author of USNRC Mark I BWR Task Group Report.  
Organizer, 1985 USNRC-FRG Core Melt Meeting, Shelter Island, NY.  
Participant, USNRC-FRG Core Melt Meetings (1984-1986).  
Participant, USNRC Severe Fuel Damage Meetings (1987-1989).  
Participant, USNRC Water Reactor Safety Meetings (1982-1988).  
Participant/Analyst/Report Author for OECD-CSNI International Severe Reactor Accident Analysis Exercise.  
Severe Accident Source Term Analyst for USNRC-DOE during Chernobyl Accident.  
Author of Mark I BWR Containment Melt-Through Study.  
Author of CRBR-LMFBR Core Meltdown Transition Phase Study.  
Participant, USDOE Deterministic Severe Accident Criteria Panel for the New Production Reactor.  
Member, Brookhaven Lecture Committee.  
Member, Brookhaven Employee Survey Steering Committee.  
Member, AS&T Safety Committee.  
Member, C-AD Experimental Safety Review Committee.

**PUBLICATIONS ROADMAP FOR  
NUCLEAR REACTOR AND PARTICLE ACCELERATOR TECHNOLOGY  
ACTIVITIES**

**[CV cross-reference: M = monograph, J = journal, C = conference, R = report]**

Liquid Metal Fast Breeder Reactor Studies: These experiments and technology assessments provided the USNRC with the technical bases for evaluating the core disruptive phase of an unmitigated undercooling accident in a LMFBR-type reactor.

- Core-Disruptive-Accident Transition Phase Technology Assessment [R5]
- Heat Transfer From Volumetrically Heated Liquids [M2, J1-3, C1-2, C4-5, C7, R1-4]
- Fluid Dynamics of Volumetrically Boiling Liquids [C3, C6, C8]

Light Water Reactor Severe Accident Studies: These activities supported USNRC severe accident risk rulemaking for LWR's under severe accident conditions with an emphasis on molten core-concrete interactions and debris coolability.

- Reactor Performance Studies [J9, C14, C17, C20, R7-10, R12-14]
- Reactor Safety Risk Studies: NUREG-0956, NUREG-1150 [contributor]
- Film Boiling and Melt Coolability [J4, J8, J14-15, J17, J19, C12-13, C15, C19, R18]
- OECD-CSNI International Standard Problem-24 for Core-Concrete Interactions [R15-16]
- Mark I BWR Containment Failure Study [M3, C16, R11]
- Editor of Special Volume in Advances in Heat Transfer in Nuclear Reactor Safety [M9]
- Core-Concrete Phenomenology [M4, J5-7, J10-13, J16, C9-11, C18, C22, R6, R17]

DOE Research and Heavy Water Reactor Studies: These activities provided the DOE and its contractors with an understanding of the behavior of aluminum-fueled reactors under accident conditions and expert assistance in reviewing the readiness to resume reactor operations.

- Member, DOE Independent Review Panel for Restart of K-Reactor [internal reports]
- Transient Melt Spreading Experiments for K-Reactor and HFBR [C21]
- Behavior of Molten Lithium-Aluminum in Water [C23-24]
- Molten Jet Breakup and Debris Coolability [J18, R19-21]
- Large-Scale Molten Aluminum-Water Quench Tests for ATR [internal report]
- Deterministic Severe Accident Study Panel for DOE Office of New Production Reactors

FSU Reactor Safety Improvement Activities: These activities were intended, as part of a much larger international effort, to assist the countries of the former Soviet Union to improve nuclear reactor operations through improved safety analyses and hardware upgrades.

- Reactor Confinement Leakage Improvements [R31]
- High-Level Post-Accident Confinement Radiation Monitor System [R32]
- Dukovany Reactor Probabilistic Risk Assessment [report issued by SAIC]

Accelerator Target Materials Studies: These experiments were designed to evaluate the behavior of accelerator target materials when severely overheated due to unanticipated transients or accidents.

- Tungsten Target Vaporization Experiment [J28, R37]
- Inconel 718 Oxidation at High Temperature [J27, R35]
- Thermal Radiative Emissivity of Oxidized Inconel [J26, R34]
- Vaporization of Mercury From Lead at Low Concentrations [J23, J29, C27, R36]
- Tungsten Aerosol Behavior in Condensing Environments [work in progress]
- Vaporization of Activated Tungsten in Steam [future work]

Accelerator Design and Safety Studies: These activities were intended to provide either safety performance guidance in the development of high power accelerator concepts or baseline design information for proposed systems.

- SNS EIS and Safety Audit Calculations [internal report to BNL SNS team]
- APT Environmental Impact Study (EIS) [contributor, C26, R27]
- APT Conceptual Design Report (CDR) [contributor, C28]
- APT Preliminary Safety Analysis Report [contributor]
- Programmatic EIS for Tritium Resupply [contributor, R22-23, R25-26]
- 70 MeV Cyclotron Isotope Research Center CDR [Editor and contributor, R38]
- HFBR CW Spallation Source Working Group [BNL Working Group report]

Proton Accelerator Experiments: Accelerator experiments were performed at both the AGS and Saturne accelerators to evaluate the effects of proton irradiation on accelerator materials, such as activation, spallation, radiation damage and energy deposition in superconducting materials.

- APT Proton-Activation Experiment at AGS [J22, C25, C29, R24, R28, R29]
- APT Neutron Production Experiments at Saclay [R30]
- APT Cryogenic Radiation Damage Experiment: E-945A [J30, R33]
- PRAD Cryogenic Energy Deposition Experiment: E-945B [report in preparation]
- Irradiation Effects on Resistivity of Superconducting Niobium [J24-25, C30]

Future Collaborations: It is intended to continue these accelerator activities and to broaden the scope of accelerator activities in the areas indicated below, most if not all of which will continue to use the cyclotron and synchrotron facilities at BNL.

- FY2001 LDRD: Development of a multipurpose cryogenic radiation effects facility
- Isotope Production: Target cross-section measurements [with D. Schlyer]
- Muon Collider: Radiation damage in materials [with K. McDonald]
- NASA Radiobiology: Low-Z shielding of heavy ions [with B. Sutherland]
- ATW: Technology development [with LANL]
- PRAD: AGS experiments and steering committee [with LANL and LLNL]

## SELECTED LECTURES AND PRESENTATIONS

1. Tenth Water Reactor Safety Meeting, October 1982, Gaithersburg, MD: "BNL Program in Support of LWR Degraded Core Accident Analysis."
2. Eleventh Water Reactor Safety Meeting, October 1983, Gaithersburg, MD: "BNL Severe Accident Sequence Experiments and Analysis Program."
3. Twelfth Water Reactor Safety Meeting, October 1984, Gaithersburg, MD: "BNL Severe Accident Sequence Experiments and Analysis Program."
4. NRC-FRG Core Meltdown Research Meeting, October 1985, Shelter Island, NY: "Analysis of Fission Product Source Term and Core-Melt Concrete Interaction Experiments Using the CORCON and VANESA Codes."
5. Thirteenth Water Reactor Safety Meeting, October 1985, Gaithersburg, MD: "BNL Severe Accident Sequence Experiments and Analysis."
6. Gordon Research Conference on High Temperature Chemistry, July 1986, Wolfboro, NH: "Quiescent World of Molten Core-Concrete Interactions."
7. USNRC-FRG Core Meltdown Research Meeting, October 1986, Cologne, FRG: "Separate Effects Studies Related to Core-Concrete Interactions and Aerosol Behavior," and "Experiments on Core-Concrete Interactions and Fission Product Release."
8. Fourteenth Water Reactor Safety Meeting, October 1986, Gaithersburg, MD: "Thermal-Hydraulics Studies on Molten Core-Concrete Interactions."
9. Severe Fuel Damage Meeting, May 1987, Washington, DC: "Recent Results on Interlayer Processes in Molten Core-Concrete Interactions."
10. Severe Fuel Damage Meeting, October 1987, Washington, DC: "Impact of Core-Concrete Interactions on Mark I BWR Containment Behavior."
11. Severe Fuel Damage Meeting, April 1988, Washington, DC: "MCCI Phenomenology: Melt Spreading and Lateral Heat Transfer."
12. Sixteenth Water Reactor Safety Meeting, October 1988, Gaithersburg, MD: "Experimental Studies on Melt Spreading, Bubbling Heat Transfer, and Coolant Layer Boiling."
13. Severe Fuel Damage Meeting, October 1988, Washington, DC: "Experiments on Melt Spreading and Bubbling Heat Transfer."

14. OECD-CSNI Core-Concrete Interaction Standard Problem Analysis Review, January 1989, Upton, NY: "Blind Analysis of SURC-4 Molten Core-Concrete Interaction Experiment with CORCON-MOD 2.04 and VANESA-MOD 1.01."
15. SUNY Stony Brook, March 1989, Stony Brook, NY: "Spreading of High Temperature Melts Over Dry and Water Flooded Surfaces."
16. Severe Fuel Damage Meeting, April 1989, Idaho Falls, ID: "Recent Progress in Research on Melt Spreading Phenomena."
17. Rensselaer Polytechnic Institute, December 1989, Troy, NY: "Spreading of Metallic Core Melt Simulants Over Flooded Horizontal Surfaces."
18. HWR-NPR DSAC Meeting, April 1991, Albuquerque, NM: "Erosion/Corrosion of 316L Stainless Steel by Molten Aluminum."
19. HWR-NPR DSAC Meeting, April 1991, Albuquerque, NM: "Boiling Heat Transfer, Debris Coolability, and Explosive Interactions From a Stratified Configuration."
20. HWR Steam Explosion Review Meeting, August 1991, Aiken, SC: "Interactions Between Molten Li/Al Alloy and Water to Simulate LCRC Conditions."
21. Lehigh University, November 1991, Bethlehem, PA: "Heat, Mass, and Momentum Transfer in Multi-Fluid Bubbling Pools With Application to Nuclear Safety."
22. ASME-WAM, December 1991, Atlanta, GA: "Thermophysical Property Data in Engineering Design."
23. Sandia National Laboratory, December 1991, Albuquerque, NM: "Debris Fragmentation/Coolability and Steam Explosions for Aluminum Fuel Reactors."
24. SUNY Stony Brook, May 1992, Stony Brook, NY: "Two Decades of Research with Professor T. F. Irvine, Jr."
25. KAERI, June 1994, Taejon, South Korea: "Effects of Explosive and Benign Molten Metal-Water Interactions: Debris Sizes and Heat Flux."
26. KAERI, June 1994, Taejon, South Korea: "Subcooled and Gas-Flux Enhanced Film Boiling: Effects on Debris Formation and Coolability."
27. KAERI, June 1994, Taejon, South Korea: "Spreading of Molten Metals Under Water."

28. Sung Kyun Kwan University, June 1994, Suwon, South Korea: "An Integrated Approach to the Modeling of Debris Formation and Mechanisms of Cooling Under Severe Accident Conditions in Nuclear Power Reactors."
29. Los Alamos National Laboratory, February 1995, Los Alamos, NM: "Global Scaling Analysis of the APT Target-Blanket Cavity Flood System."
30. Los Alamos National Laboratory, March 1996, Los Alamos, NM: "Experimental Determination of Limits to Formation and Retention/Decontamination of Tungsten Aerosols."
31. Los Alamos National Laboratory, August 1997, Los Alamos, NM: "High Temperature Oxidation of Inconel-718 in Air for Evaluation as Clad for the APT Spallation Target."
32. Westinghouse Savannah River Company, October 1997, Aiken, SC: "Behavior of APT Target and Blanket Materials Under High Temperature Oxidizing Conditions."
33. Defense Nuclear Facilities Safety Board, November 1997, Washington, DC: "Molten Metal-Water Interactions During Postulated Beyond-Design-Basis-Accident Conditions in APT."
34. APT Thermal Hydraulics Working Group, November 1997, Albuquerque, NM: "Summary of Experimental Research Program in FY1998."
35. Brookhaven National Laboratory, DAT Division Review, January 1998, Upton, NY: "Safety and Thermal Hydraulics Experiments."
36. Los Alamos National Laboratory, March 1998, Los Alamos, NM: "Potential for an Energetic Melt-Water Interaction in the APT Target/Blanket Cavity."
37. Los Alamos National Laboratory, April 1998, Los Alamos, NM: "APT Materials Safety Experiments."
38. Los Alamos National Laboratory, June 1998, Los Alamos, NM: "Vaporization of Tungsten at High Temperatures in Steam."
39. Los Alamos National Laboratory, November 1998, Los Alamos, NM: "Experimental Results on Thermal Radiation Emissivity of Spallation Target Materials and Blanket Source Term."
40. Brookhaven National Laboratory, November 2000, Upton, NY: "Mercury Jet Targetry for E-951."
41. Brookhaven National Laboratory, December 2000, Upton, NY: "Energy Deposition in Cryogenic Structures Downstream of a 24 GeV/c Proton Spallation Target."

\* = **Key Publication**

**THESES, DISSERTATIONS, BOOKS AND MONOGRAPHS**

1. Greene, G. A., "A Hydrodynamic Study of the Starr-Edwards Model 2320 Aortic Heart Valve," M.S. Thesis, SUNY Stony Brook (December 1974).
2. Greene, G. A., "Experimental and Analytical Study of Natural Convection Heat Transfer of Internally Heated Liquids," Ph.D. Dissertation, SUNY Stony Brook (November 1980).
3. Greene, G. A., "Mark I Containment Drywell: Impact of Core/Concrete Interactions on Containment Integrity and Failure of the Drywell Liner," in Source Term Evaluation for Accident Conditions, International Atomic Energy Agency, Vienna (1986).
- \*4. Greene, G. A., "Heat, Mass, and Momentum Transfer in a Multifluid Bubbling Pool," in Advances in Heat Transfer, v. 21, Academic Press, San Diego, CA (1991).
5. Greene, G. A., T. F. Irvine, Jr., J. P. Hartnett and Y. I. Cho, editors, Advances in Heat Transfer, v. 25, Academic Press, San Diego, CA (1994).
6. Greene, G. A., T. F. Irvine, Jr., J. P. Hartnett and Y. I. Cho, editors, Advances in Heat Transfer, v. 26, Academic Press, San Diego, CA (1995).
7. Greene, G. A., T. F. Irvine, Jr., J. P. Hartnett and Y. I. Cho, editors; W. J. Yang, H. Taniguchi and K. Kudo, authors; Advances in Heat Transfer - Radiative Heat Transfer by the Monte Carlo Method, v. 27, Academic Press, San Diego, CA (1995).
8. Greene, G. A., T. F. Irvine, Jr., J. P. Hartnett and Y. I. Cho, editors; D. Poulikakos, volume editor; Advances in Heat Transfer - Transport Phenomena in Materials Processing, v. 28, Academic Press, San Diego, CA (1996).
- \*9. Greene, G. A., editor, Advances in Heat Transfer - Heat Transfer in Nuclear Reactor Safety, v. 29, Academic Press, San Diego, CA (1997).
10. Greene, G. A., T. F. Irvine, Jr., J. P. Hartnett and Y. I. Cho, editors, Advances in Heat Transfer, v. 30, Academic Press, San Diego, CA (1997).
11. Greene, G. A., T. F. Irvine, Jr., J. P. Hartnett and Y. I. Cho, editors, Advances in Heat Transfer, v. 31, Academic Press, San Diego, CA (1998).

12. Greene, G. A., T. F. Irvine, Jr., J. P. Hartnett and Y. I. Cho, editors, Advances in Heat Transfer, v. 32, Academic Press, San Diego, CA (1999).
13. Greene, G. A., T. F. Irvine, Jr., J. P. Hartnett and Y. I. Cho, editors, Advances in Heat Transfer, v. 33, Academic Press, San Diego, CA (1999).
14. Greene, G. A., T. F. Irvine, Jr., J. P. Hartnett and Y. I. Cho, editors, Advances in Heat Transfer, v. 34, Academic Press, San Diego, CA (2000).
15. Greene, G. A., T. F. Irvine, Jr., J. P. Hartnett and Y. I. Cho, editors, Advances in Heat Transfer, v. 35 (in press), Academic Press, San Diego, CA (2000).

## JOURNAL ARTICLES AND REFEREED PAPERS

1. Greene, G. A., N. Abuaf, O. C. Jones, Jr. and C. E. Schwarz, "Heat Removal Characteristics of Volume Heated Boiling Pools with Inclined Boundaries in Bubbly Flow Regime," ASME Paper No. 79-HT-99, 18th National Heat Transfer Conference (August 1979).
2. Greene, G. A., N. Abuaf and O. C. Jones, Jr., "Correlation of Local Heat Flux from Inclined Volume Heated Pools in Bubbly Flow," ASME Paper No. 80-HT-91, 19th National Heat Transfer Conference (August 1980).
3. Greene, G. A., T. F. Irvine, Jr. and O. C. Jones, Jr., "Experimental and Analytical Study of Natural Convection Heat Transfer of Internally Heated Fluids," Proceedings Seventh International Heat Transfer Conference, 2, pp. 135-140, Munich, FRG (September 1982).
4. Greene, G. A. and T. F. Irvine, Jr., "Film Boiling of R11 on Liquid Metal Surfaces," Proceedings Eighth International Heat Transfer Conference, 4, pp. 2049-2054, San Francisco, CA (July 1986).
- \* 5. Greene, G. A., J. C. Chen and M. T. Conlin, "Onset of Entrainment Between Immiscible Liquid Layers Due to Rising Gas Bubbles," Int. J. Heat Mass Transfer, 31(6), pp. 1309-1317 (June 1988).
6. Greene, G. A., C. Finfrock and S. B. Burson, "Phenomenological Studies on Molten Core-Concrete Interactions," Nucl. Engr. Des., 108(1,2), pp. 167-177 (June 1988).
7. Greene, G. A. and T. F. Irvine, Jr., "Heat Transfer Between Stratified Immiscible Liquid Layers Driven by Gas Bubbling Across the Interface," 25th National Heat Transfer Conference, HTC v. 3, pp. 31-36 (August 1988).
8. Duignan, M. R., G. A. Greene and T. F. Irvine, Jr., "Measurements of the Film Boiling Bubble Parameters on a Horizontal Plate," Int. Com. Heat Mass Transfer, 16(3), pp. 355-366 (March 1989).
9. Burson, S. B., G. A. Greene, D. R. Bradley, J. E. Brockmann, E. Copus and D. A. Powers, "USNRC Research Program on Molten Core Debris Interactions in the Reactor Cavity," Nucl. Engr. Des., 115(2,3), pp. 305-314 (July 1989).
10. Greene, G. A., "Heat Transfer from a Liquid Pool in the Bubbly Flow Regime to a Vertical Boundary," 26th National Heat Transfer Conference, AIChE Symposium Series 269, v. 85, Philadelphia, PA (August 1989).

11. Greene, G. A., J. C. Chen and T. F. Irvine, Jr., "Heat Transfer Between Stratified Liquids with Bubbling Across the Interface," Proceedings Ninth International Heat Transfer Conference, 3, pp. 467-472, Jerusalem, Israel (August 1990).
12. Duignan, M. R., G. A. Greene and T. F. Irvine, Jr., "Heat Transfer from a Horizontal Bubbling Surface to an Overlying Water Pool," Chemical Engineering Communications, 87, pp. 185-194 (1990).
- \*13. Greene, G. A., J. C. Chen and M. T. Conlin, "Bubble Induced Entrainment Between Stratified Liquid Layers," Int. J. Heat Mass Transfer, 34(1), pp. 149-157 (January 1991).
- \*14. Duignan, M. R., G. A. Greene and T. F. Irvine, Jr., "Film Boiling Heat Transfer to Large Superheats from a Horizontal Flat Surface," J. Heat Transfer, 113(1), pp. 266-268 (February 1991).
15. Duignan, M. R., G. A. Greene and T. F. Irvine, Jr., "The Effect of Surface Gas Injection on Film Boiling Heat Transfer," 28th National Heat Transfer Conference, ASME-HTD v. 192, San Diego, CA (August 1992).
- \*16. Greene, G. A., T. F. Irvine, Jr., T. Gyves and T. Smith, "Drag Relationships for Liquid Droplets Settling in a Continuous Fluid," AIChEJ, 39(1), pp. 37-41 (January 1993).
- \*17. Duignan, M. R., G. A. Greene and T. F. Irvine, Jr., "The Effect of Surface Gas Injection on Film Boiling Heat Transfer," J. Heat Transfer, 115(4), pp. 986-992 (November 1993).
18. Greene, G. A., D. H. Cho, M. L. Hyder and D. K. Allison, "Rapid Quenching of Molten Lithium - Aluminum Jets in Water," Nucl. Engr. Des., 148(2,3), pp. 317-326 (July 1994).
19. Greene, G. A. and T. F. Irvine, Jr., "The Effect of Water Subcooling on Film Boiling Heat Transfer From Vertical Cylinders," Proceedings Tenth International Heat Transfer Conference, 5, pp. 75-80, Brighton, UK (August 1994).
20. Capobianchi, M., G. A. Greene, T. F. Irvine, Jr. and N. K. Tutu, "A New Technique for Measuring the Fickian Diffusion Coefficient in Binary Liquid Solutions," International Journal of Experimental Thermal and Fluid Science, 18, pp. 33-47 (January 1998).
21. Lee, S. R., T. F. Irvine, Jr. and G. A. Greene, "A Computational Analysis of Natural Convection in a Vertical Channel With a Modified Power Law Non-Newtonian Fluid," Proceedings Eleventh International Heat Transfer Conference, 3, pp. 367-372, Kyongju, KR (August 1998).
22. Laird, C. E., D. H. Mullins, D. B. McGibney, J. Swartz, R. W. Kamau, C. L. Snead, Jr., M. S. Zucker, T. E. Ward, E. M. Franz and G. A. Greene, "Activation by Protons in Range-Thick Lead and Tungsten Spallation Targets," Nucl. Sci. Engr., 130, pp. 320-339 (November 1998).

23. Czajkowski, C. J., S. Usmani and G. A. Greene, "Effects of Mercury on Thermally Sprayed Aluminum Coatings," J. Materials Characterization, 43 (2/3), pp. 187-194 (August 1999).
24. Snead, C. L., Jr., A. Hanson, G. A. Greene, A. Ghosh, C. J. Czajkowski, K. C. D. Chan, T. E. Ward and H. Safa, "Resistivity-Changes in Superconducting Cavity-Grade Nb Following High-Energy Proton Irradiation," J. Materials Characterization, 43(2/3), pp.159-168 (August 1999).
25. Snead, C. L., Jr., A. Hanson, G. A. Greene, A. Ghosh, C. J. Czajkowski, K. C. D. Chan, T. E. Ward and H. Safa, "Beam Spill and Irradiation Effects in Niobium," accepted for publication by J. Materials Characterization (1999).
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