

EXTENDED CURRICULUM VITAE

PERSONAL:

Name: Alejo Sánchez Alías
Place and date of birth: Spain. April 11, 1951
Citizenship: Spanish/Venezuelan (Naturalized 1978)
U.S. Status: Permanent resident.

HOME ADDRESS:

- 813 S Main St
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EDUCATION:

- Ph.D. Mechanical Engineering The University of Iowa 1991
- M.Sc Mechanical Engineering The University of Iowa 1983
- Engineering Mechanical Engineer Universidad de los Andes, (Venezuela) 1977

LANGUAGES:

Fluent in both spoken and written English (near-native) and Spanish (native).

PROFESSIONAL ASSOCIATIONS OF WHICH IS AND/OR HAS BEEN A MEMBER:

- The American Society of Mechanical Engineers (ASME)
- Venezuelan College of Engineers (CIV)
- Association of Professors, Universidad de los Andes (APULA)

TEACHING POSITIONS:

2002-present	Retired Professor	Universidad de los Andes, Venezuela.
1993-2002	Full Professor	Universidad de los Andes.
1992-1993	Associate Professor	Universidad de los Andes.
1991-1992	Adjunct Professor	Universidad de los Andes.
1989-1991	Research Assistant	The University of Iowa.
1984-1991	Assistant Professor	Universidad de los Andes.

1979-1984	Instructor Professor	Universidad de los Andes.
1977-1979	Professor on contract	Universidad de los Andes.
1974-1977	Teaching Assistant	Universidad de los Andes.

OTHER ORGANIZATIONAL/ADMINISTRATIVE POSITIONS:

2003-2012	Vice President of the Iowa Institute S.R.L. (Language Academy, now closed, for the teaching of English and Spanish as Second Languages). Mérida, Venezuela.		
2002-2003	Coordinator in Europe of the Mechanical Inspection during the fabrication of the Public Transportation System for the City of Mérida. In representation of “Unidad de Asesoría de Proyectos de Innovación Tecnológica (UAPIT)”;		With duties in Spain, Holland and Germany.
2001-2002	Coordinator of the Mechanical Inspection of the Public Transportation System for the City of Mérida. Unidad de Asesoría de Proyectos de Innovación Tecnológica (UAPIT). In Mérida, Venezuela.		
2000-2002	Member of the Directing Council for UAPIT (Unidad de Asesoría de Proyectos de Innovación Tecnológica). College of Engineering, Universidad de los Andes.		
2000-2002	Coordinator of the Doctorate program in Applied Mathematics. College of Engineering, Universidad de Los Andes.		
2000-2002	Member of the Comisión on Physics and Mathematics. Consejo de Desarrollo Científico, Humanístico y Tecnológico (CDCHT), Universidad de Los Andes).		
1999-2000	On Sabbatical leave.		
1997-2000	Coordinator of the Fluid Dynamics Section. National Center for Scientific Calculations (CECALCULA).		
1996-2002	Director of the Computational Thermal Sciences Section. National Center for Scientific Calculations (CECALCULA).		
1997-1999	Founder and Coordinator of the Research Group in “Computational Thermal Sciences,”. Universidad de Los Andes.		
1995-1998	Chairman of the Graduate Programs Division. College of Engineering, Universidad de Los Andes.		
1992-1993	Chairman, Department of Thermal Sciences. Mechanical Engineering School, Universidad de los Andes.		
1985-1987	Chairman, Department of Thermal Sciences. Mechanical Engineering School, Universidad de los Andes.		

1985-1986	Faculty Council Member. College of Engineering, Universidad de los Andes.
1978-1981	Coordinator of School-Industry Relations. Mechanical Engineering School, Universidad de los Andes.
1978-1981	Head of the Heat Transfer, Refrigeration, and Air Conditioning Laboratory. Mechanical Engineering School, Universidad de los Andes.

RESEARCH INTERESTS:

- Heat Transfer.
- Electronic Cooling.
- Thermal Systems Optimization.
- Parallelization Techniques applied to CFD/Thermal-related Software.
- Radiative Heat Transfer.
- Atmospheric/Cloud Radiation and Remote Sensing.
- Solar Energy.
- Alternative Energy Sources.

HONORS/AWARDS/RECOGNITION:

- Member of the Scientific Committee for the VI International Congress in "Numerical Methods in Engineering and Applied Sciences," CIMENICS 02, Caracas, Venezuela, 2002.
- Awarded distinction in the Program for the Promotion of Researchers (PPI), Consejo de Investigaciones Científicas y Tecnológicas (CONICIT), Venezuela, 1992-2000.
- Member of the Scientific Committee for the IV International Congress in "Numerical Methods in Engineering and Applied Sciences," CIMENICS 98, Pto. Ordaz, Venezuela, 1998.
- Coordinator of the Technical Committee for the "Segundo Congreso Nacional de Ingeniería Mecánica," Mérida, Venezuela, 1997.
- Coordinator of the Technical Committee for the III International Congress in "Numerical Methods in Engineering and Applied Sciences," CIMENICS 96, Mérida, Venezuela, 1996.
- Awarded distinction in the Program for the Recognition of Researchers (PEI), Universidad de Los Andes, 1995-2002.
- Invited Speaker for the II Semana de Ingeniería Mecánica, San Cristobal, 1995.
- Member of the Organizing Committee for "The Third Caribbean Congress on Fluid Dynamics and The Third Latin-American Symposium on Fluid Mechanics," Caracas, 1995.
- Plaque of recognition for "Valuable collaboration in the fostering of Education," Universidad Nacional Experimental del Tachira, UNET, 1995.
- Invited Speaker in the Universidad Nacional Experimental del Táchira, UNET, 1995.

- Public recognition from the Mechanical Engineering School, Universidad de Los Andes, for "Achievements and successes in the field of research," 1994.
- Invited Speaker in the Colloquium in Applied Mathematics, San Diego State University, 1992.

EXPERIENCE AS REVIEWER/REFEREE FOR:

- Journal of Heat Transfer.
- Journal of Thermophysics and Heat Transfer.
- Consejo Nacional de Investigaciones Científicas y Tecnológicas (Conicit), Venezuela.
- Consejo de Desarrollo Científico, Humanístico y Tecnológico (CDCHT), Universidad de Los Andes, Venezuela.
- Revista Técnica de Ingeniería, Universidad del Zulia, Venezuela.

SUBJECTS TAUGHT:

- Theory:**
- Thermal Systems Design
 - Heat Transfer
 - Numerical Methods
 - Fluid Mechanics
 - Thermodynamics
 - Descriptive Geometry

- Laboratories:**
- Energy Conversion
 - Heat Transfer
 - Refrigeration and Air Conditioning
 - Turbomachinery

INVITED LECTURES/ PRESENTATIONS IN CONFERENCES:

- "La Informática en Ing. Mecánica: Desarrollo y Comercialización de Software Aplicado," Seminar in the Mechanical Engineering School, Universidad de Los Andes, Mérida, 2001.
- "Sabático en el Caribe" Seminar in the Mechanical Engineering School, Universidad de Los Andes, Mérida, 2000.
- "Intercambio Radiante en Coordenadas Cilíndricas: Paralelización del Método de las Ordenadas Discreta Mediante Pase de Mensajes," XIII Congreso Nacional de Ingeniería Mecánica, Tarrasa, Spain, 1998.
- "Radiative Transfer Computations in cylindrical Coordinates: A Parallel Implementation of the Discrete Ordinates Method," VII Congreso Latinoamericano de Transferencia de Calor y Materia, Salta, Argentina, 1998.

- "Cálculo de Intercambio de Calor por Radiación en Coordenadas Cilíndricas y su Implementación en un Ambiente de Programación Paralela," Seminar in the Mechanical Engineering School, Universidad de Los Andes, Mérida, 1998.
- "The Discrete Ordinates Method in Cylindrical Coordinates: A New Solution Procedure Based on The Existence of Sets of Independent Directions," Simulación con Métodos Numéricos: Nuevas Tendencias y Aplicaciones, Sociedad Venezolana de Métodos Numéricos, Caracas, Venezuela, 1998.
- "La Experiencia de la División de Postgrados de la Facultad de Ingeniería," Primeras Jornadas Nacionales sobre Los Estudios de Postgrado: Fuentes de Financiamiento, Mérida, 1997.
- "Drástica Disminución en los Requerimientos de Memoria del Método de las Ordenadas Discretas," II Congreso Nacional de Ingeniería Mecánica, Mérida, Venezuela, 1997.
- "About the Importance of Radiative Cooling in Electronic Packaging," International Symposium on Radiation Transfer, Kusadasi, Turkey, 1995.
- "Mixed Convection and Radiation in a Partitioned Enclosure with a Moving Wall," The Third Caribbean Congress on Fluid Dynamics and The Third Latin-American Symposium on Fluid Mechanics, Caracas, Venezuela, 1995.
- "Modelaje del Intercambio Radiante por el Método de las Ordenadas Discretas," II Semana de Ingeniería Mecánica, Universidad Nacional Experimental del Tachira (UNET), San Cristobal, 1995.
- "Modelaje de Problemas Conjugados de Transferencia de Calor," II Semana de Ingeniería Mecánica, Universidad Nacional Experimental del Tachira (UNET), 1995.
- "Efectos Combinados de Radiación y Convección mixta en el Enfriamiento de Componentes Electrónicos," XI Congreso Nacional de Ingeniería Mecánica, Valencia, Spain, 1994.
- "ANDISORD4©: un Modelo General Para el Cálculo de Intercambio Radiante," I Congreso Iberoamericano de Ingeniería Mecánica, Madrid, Spain, 1993.
- "Surface Radiation Exchange in Multi-Dimensional Arrays of Electronic Components," 6th International Symposium on Transport Phenomena (ISTP-6) in Thermal Engineering, Seoul, South Korea, 1993.
- "Application of a Three-Dimensional Radiative Transfer Model to Nonhomogeneous Clouds," 104th Session of the Iowa Academy of Sciences, Haferman, J. L., Sánchez, A., Krajewski, W. F., and Smith, T. F., 1992.
- "Application of the Discrete Ordinates Method to 3-D Cloud Radiative Transfer," 11th Conference on Clouds and Precipitation, Montreal, Canada, 1992.
- "Radiative Transfer with the Discrete Ordinates Method," San Diego State University, SDSU, 1992.

- "Use of 3-D Atmospheric Radiation Modeling for Satellite Remote Sensing of Rainfall," 1991 Spring Meeting of the American Geophysical Society, Baltimore, USA, 1991.

PUBLICATIONS:

1999- On Sabbatical Leave, Work in Europe and Retirement in 2002.

Guillén, P., Sánchez, A., and Torres, C., 1998, "Solución de la Ecuación de Transferencia Radiante en Medio Participante Haciendo uso de Computación Paralela en una Origin 2000," Proceedings of The X Jornadas Científico Técnicas de Ingeniería, MFC-1/6, Maracaibo, Venezuela.

Sánchez, A., Guillén, P., and Torres, C., 1998, "Intercambio Radiante en Coordenadas Cilíndricas: Paralelización del Método de las Ordenadas Discreta Mediante Pase de Mensajes," Anales de Ingeniería Mecánica, Revista de la Asociación Española de Ingeniería Mecánica, Proceedings of The XIII Congreso Nacional de Ingeniería Mecánica, Año 12, Vol. 4, pp. 629-936, Tarrasa, Spain.

Alarcón, G., Torres, C., Sánchez, A., and Azuaje, C., 1998, "Modelo Mecánico para la Transición de Patrones de Flujo Multifásico en Tuberías para Todos los Ángulos de Inclinación," Proceedings of The VII Congreso Latinoamericano de Transferencia de Calor y Materia –LATCYM 98-, Vol. IV, pp. 905-910, Salta, Argentina.

Sánchez, A., Guillén, P., and Torres, C., 1998, "Radiative Transfer Computations in cylindrical Coordinates: A Parallel Implementation of the Discrete Ordinates Method," Proceedings of The VII Congreso Latinoamericano de Transferencia de Calor y Materia –LATCYM 98-, Vol. IV, pp. 984-989, Salta, Argentina.

Guillén, P., Sánchez, A., and Torres, C., 1998, "Un Algoritmo Paralelo para el Método de las Ordenadas Discretas en Coordenadas Cilíndricas," Simulación con Métodos Numéricos: Nuevas Tendencias y Aplicaciones, eds. Prado, O., Rao, M, and Cerrolaza, M., pp. TM87-94, Sociedad Venezolana de Métodos Numéricos, Caracas, Venezuela.

Sánchez, A., Guillén, P., and Torres, C., 1998, "The Discrete Ordinates Method in Cylindrical Coordinates: A New Solution Procedure Based on The Existence of Sets of Independent Directions," Simulación con Métodos Numéricos: Nuevas Tendencias y Aplicaciones, eds. Prado, O., Rao, M, and Cerrolaza, M., pp. TM95-102, Sociedad Venezolana de Métodos Numéricos, Caracas, Venezuela.

Campo, A., and Sánchez, A., 1998, "Convective Heat Transport of High-Pressure Flows Inside Active, Thick Walled-Tubes with Isothermal Outer Surfaces: Usage of Nusselt Correlation Equations for Inactive, Thin Walled-Tubes," Journal of Applied Thermal Engineering, Vol. 18, Nos 3-4, pp. 157-169.

Byun, K. H., Smith, T. F., and Sánchez, A., 1997, "View Factors for an Infinite Rectangular Duct Enclosing a Transparent Medium by the Discrete-Ordinates Method," KSME International Journal, Vol. 11, No. 3, pp. 331-338.

- Sánchez, A., and Guillén, P., 1997, "Drástica Disminución en los Requerimientos de Memoria del Método de las Ordenadas Discretas," Proceedings of The II Congreso Nacional de Ingeniería Mecánica, pp. 401-404, Mérida, Venezuela.
- Sánchez, A., Guillén, P., Muñoz, D. A., Ramírez, C. M., and Campo, A., 1996, "Combined Convection-Radiation Effects in the Entry Region of Parallel Plate Channels: A preliminary Study," Numerical Methods in Engineering Simulations, eds. Cerrolaza, M., Gajardo, C, and Brebbia, C. A., pp. 35-43, Computational Mechanics Computations, Southampton Boston, UK.
- Sánchez, A., Rosales, R., Jiménez, de P. I., and Campo, A., 1995, "About the Importance of Radiative Cooling in Electronic Packaging," Radiative Transfer – I-, ed. M. Pinar Menguc, pp. 693-703, Begell House, New York.
- Byun, K. H., Smith, T. F., and Sánchez, A., 1995, "View Factors of a Rectangular System Enclosing a Transparent Media by Discrete-Ordinates Method," Proceedings of The Third Caribbean Congress on Fluid Dynamics and The Third Latin-American Symposium on Fluid Mechanics, Vol. 1, in alphabetical order, USB, Caracas.
- Sánchez, A., Jimenez, de P. I., and Campo, A., 1995, "Mixed Convection and Radiation in a Partitioned Enclosure with a Moving Wall," Proceedings of The Third Caribbean Congress on Fluid Dynamics and The Third Latin-American Symposium on Fluid Mechanics, Vol. 1, in alphabetical order, USB, Caracas.
- Sánchez, A., and Rosales, R., 1994, "Efectos Combinados de Radiación y Convección en el Enfriamiento de Componentes Electrónicos Generadores de Calor Colocados en Canales Bidimensionales," Solución de Problemas en Ingeniería con Métodos Numéricos, eds. Cerrolaza, M., and Guillén, A., Vol. 1, pp. TC 31-40, Sociedad Venezolana de Métodos Numéricos, Caracas.
- Sánchez, A., Rosales, R., Jimenez, de P. I., and Campo, A., 1994, "Efectos Combinados de Radiación y Convección mixta en el Enfriamiento de Componentes Electrónicos," Anales de Ingeniería Mecánica, Revista de la Asociación Española de Ingeniería Mecánica, Actas del XI Congreso Nacional de Ingeniería Mecánica, Año 10, Vol. 2, pp. 723-732, Spain.
- Sánchez, A., Smith, T. F., and Krajewski, W., 1994, "Three-Dimensional Atmospheric Radiation Model Based on the Discrete-Ordinates Method," Journal of Atmospheric Research, Vol.33, pp. 283-308.
- Sánchez, A., Smith, T. F., and Krajewski, W., 1994, "Dimensionality Issues in Modeling with the Discrete Ordinates Method," J. Heat Transfer, Vol. 116, No. 1, pp. 257–260.
- Sánchez, A., Morales, J. C., and Campo, A., 1993, "Application of the Discrete Ordinates Method to Buoyancy Induced Radiating Fluids in a Square Enclosure with Moving Walls," General Papers in Radiative Heat Transfer, eds. (not available), ASME, HTD–Vol. 257, pp. 25-32.

- Sánchez, A., 1993, "ANDISORD4©: un Modelo General Para el Cálculo de Intercambio Radiante," Proceedings of The I Congreso Iberoamericano de Ingeniería Mecánica, Vol. 2, pp. 391-398, Madrid.
- Sánchez, A., Bravo, R., and Smith, T. F., 1993b, "Surface Radiation Exchange in Multi-Dimensional Arrays of Electronic Components," Transport Phenomena in Thermal Engineering, eds. Lee, J. S., Chung, S. H., and Kim, K. H., Vol. 2, pp.1174-1179, Bell House Inc., New York.
- Sánchez, A., Bravo, R., and Smith, T. F., 1993, "Surface Radiation Exchange in Multi-Dimensional Arrays of Electronic Components," Proceedings of The 6th International Symposium on Transport Phenomena (ISTP-6) in Thermal Engineering, Vol. 1, pp.267-272, Seoul, Korea.
- Haferman, J. L., Krajewski, W. F., Smith, T. F., and Sánchez, A., 1993, "Radiative Transfer for a Three-Dimensional Raining Cloud," J. Applied Optics, Vol. 32, No. 15, pp. 2795-2802.
- Sánchez, A., Smith, T. F., and Krajewski, W., 1992a, "Application of the Discrete Ordinates Method to 3-D Cloud Radiative Transfer," Proceedings of The 11th Conference on Clouds and Precipitation, Vol. 2, pp. 817-820, Montreal, Canada.
- Sánchez, A., Smith, T. F., and Krajewski, W., 1992, " Dimensionality Issues in Modeling with the Discrete Ordinates Method," Developments in Radiative Transfer, eds. Thynell, S. T., Modest, M. F., Burmeister, L. C., Hunt, M. L., Tong, T. W., Skocypec, R. D., Yuen, W. W., and Fiveland, W. A., ASME, HTD-Vol. 203, pp. 145-152.
- Sánchez, A., and Smith, T. F., 1992, "Surface Radiation Exchange for Two-Dimensional Rectangular Enclosures Using the Discrete-Ordinates Method," J Heat Transfer, Vol. 114, pp. 465-472.
- Sánchez, A., Krajewski, W., and Smith, T. F., 1992, "A General Purpose Radiative Transfer Model for Application to Remote Sensing in Multi-Dimensional Systems," IIHR Report No. 355, Iowa Institute of Hydraulic Research, The University of Iowa.
- Bravo, R. H., Sánchez, A., Chen, C. J., and Smith, T. F., 1992, "Convection and Radiation Heat Transfer Analysis in Three-Dimensional Arrays of Electronic Chips," Proceedings of the InterSociety Conference on Thermal Phenomena in Electronic Systems, pp. 149-154.
- Sánchez, A., 1991, "A General Purpose Radiative Transfer Model for Application to Remote Sensing in Multi-Dimensional Systems," Ph. D. Thesis, The University of Iowa.
- Sánchez, A., Smith, T. F., and Krajewski, W. F., 1991, "Three-Dimensional Radiative Heat Transfer in a Polydispersion with Collimated Incident Source," Eds. W. A. Fiveland, A. L. Crosbie, A. M. Smith, and T. F. Smith, Fundamentals of Radiation Heat Transfer, HTD-Vol. 160, A.S.M.E., pp. 27-36.

- Sánchez, A., Krajewski, W., and Smith, T. F., 1991, " Use of 3-D Atmospheric Radiation Modeling for Satellite Remote Sensing of Rainfall," Proceedings of The 1991 Spring Meeting of the American Geophysical Society, Volume of Abstracts, pp. 117, Baltimore.
- Sánchez, A., Smith, T. F., and Krajewski, W., 1990a, "ANDISORD3 Program Listing. A Three-Dimensional Radiation Model," Technical Report ME-TFS-90-011, The University of Iowa, Iowa City, Iowa.
- Sánchez, A., and Krajewski, W. F., 1990, "ANDISORD: A Computer Program for Atmospheric and Engineering Radiative Transfer Applications," Proceedings of the 3rd. Brazilian Thermal Science Meeting, pp. 69-74, Itapema, Brazil.
- Sánchez, A., House, J., and Smith, T. F., 1990, "Combined Natural Convection and Radiation in a Rectangular Enclosure in the Presence of a Polydispersion and a Non-Participating Gas," Proceedings of The 3rd. Brazilian Thermal Science Meeting, pp. 107-112, Itapema, Brazil.
- Sánchez, A., Smith, T. F., and Krajewski, W., 1990, "ANDISORD2 Program Listing. A Two-Dimensional Radiation Model," Technical Report ME-TFS-90-005, The University of Iowa.
- Sánchez, A., Krajewski, W., and Smith, T. F., 1990, "Statistical Framework for Validation of Satellite-Based Global Precipitation Estimation; Part I: An Atmospheric Radiation Model — The Plane Layer Case," Progress report prepared for Grant NA89AA-D-AC195 for National Oceanic and Atmos. Admin (NOAA).
- Sánchez, A., 1985, "Solar Performance of a Solar Assisted House in Iowa City," Proceedings of The Congress Coben 85, Jose Dos Santos, Brazil.
- Sánchez, A., 1983, "Solar Performance of a Solar Assisted House in Iowa City," M. Sc. Thesis, The University of Iowa.
- Sánchez, A., 1983, "Solar Energy and its Importance for an Oil-Producing Country. The Case of Venezuela," Proceedings of The Energy 83 Congress, Hamburg, Germany.

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FUNDED RESEARCH PROJECTS:

- Coordinator of: "Microwave Assisted Oil Recovery," Project AS-17-01, Instituto de Tecnología Venezolana para el Petróleo (INTEVEP), PDVSA.
- Coordinator of: "Intercambio Radiante en Coordenadas Cilíndricas en la Presencia de Fuentes Colimadas de Energía," Project I-387-92-B, Consejo de Desarrollo Humanístico y Tecnológico (C.D.C.H.), Universidad de los Andes.
- Participant in: "Statistical Framework for Validation of Satellite-Based Global Precipitation Estimation; Part I: An Atmospheric Radiation Model — The Plane Layer Case," Grant NA89AA-D-AC195, National Oceanic and Atmos. Admin (NOAA).

NEWSPAPER ARTICLES:

- "La legión olvidada: Los españoles en Venezuela," *Elche News*, Elche, 27 julio, 2016.
- "¿Quien le puso Topes a mi Computadora?" Alejo Sánchez,. *Diario "TalCual"*, Caracas, 3 de Septiembre 2004.
- "Propuesta Institucional Centro Nacional de Cálculo Científico: CeCalcULA. Universidad de los Andes," Coauthors: Luis Nuñez, Alejo Sánchez, Florencio Plachco, José Silva, Wilmer Olivares and Francisco Hidrobo. *Diario "Frontera"*, Mérida, Marzo 1996.

HOBBIES:

Sailing. More than 10000 miles in 8 years. Cruised most of the Caribbean, including Panama and Colombia and has sailed across the North Atlantic from Venezuela to Holland.

Photography, Chess and Cartooning.