

**THE UNIVERSITY OF TEXAS**  
**College of Engineering**

**FULL NAME:** Atila Novoselac **TITLE:** Assistant Professor

**DEPARTMENT:** Department of Civil, Architectural, and Environmental Engineering

**EDUCATION:**

University of Belgrade	Mechanical Engineering	B.S.	1994
University of Belgrade	Mechanical Engineering	M.S.	2000
Pennsylvania State University	Architectural Engineering	Ph.D.	2005

**CURRENT AND PREVIOUS ACADEMIC POSITIONS:**

Pennsylvania State University	Postdoctoral Scholar	01/2005-07/2005
University of Texas at Austin	Assistant Professor	08/2005-Present

**OTHER PROFESSIONAL EXPERIENCE:**

University of Belgrade	Research Assistant	1995-1997
University of Belgrade	Research/Teaching Associate	1997-2000
Energy Institute, Belgrade	Consulting Engineer	1995-2000
Pennsylvania State University	Research Assistant	2000-2004

**HONORS AND AWARDS:**

Grant in Aid Fellowship for Graduate Students, ASHRAE	2001
Dean's Fellowship for Graduate Students, Pennsylvania State University	2001-2004
Gordon D. Kissinger Graduate Fellowship, Pennsylvania State University	2003
Jack and Laraine Beiter Excellence Endowment in Architectural Engineering, Pennsylvania State University	2004
Second Award for the Engineering at the Solar Decathlon Competition 2007, Internat. Competition in Design of Solar House	2008
Best Student Paper Award in 2007/2008 from the ISIAC, Received by Dr. Novoselac's PhD student Donghyun Rim	2008
American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) New Investigator Award	2010

**MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES:**

Member, American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)	2000-present
Member, Architectural Engineering Institute (AEI), institute of ASCE	2006-2008
The American Association for Aerosol Research (AAAR)	2008-present
International Society of Indoor Air Quality and Climate (ISIAQ)	2009-present

**PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES:**

ASHRAE	
Technical Committee 4.10: Indoor Environmental Modeling	2004-present
Technical Committee 5.3: Room Air Distribution	2005-present
Technical C. 4.3: Ventilation Requirement & Infiltration	2006-present
Technical Committee 4.7: Building Energy Modeling	2007-present

**PUBLICATIONS:**

*Refereed Archival Journal Publications*

- Stephens, B., Siegel, J.A., and Novoselac, A. (2010) The Effects of Filtration on Pressure Drop and Energy Consumption in Residential HVAC Systems. To appear in *HVAC&R Research Journal*.
- Lo, L.J. and Novoselac, A. (2010) Localized Air-conditioning with Occupancy Control in an Open Office. *Energy and Buildings*, doi:10.1016/j.enbuild.2010.02.003.
- Stephens, B., Siegel J.A., and Novoselac, A. (2010) Energy Implications of Filters in Residential and Light-Commercial Buildings. *ASHRAE Transactions*, 16 (1), OR-10-038.
- Rim, D. and Novoselac, A. (2010) Ventilation Effectiveness as an Indicator of Occupant Exposure to Indoor Particles. *Building and Environment*, 45 (5), 1214–1224.
- Kunkel, D.A., Gall, E.T., Siegel, J.A., Novoselac, A., Morrison, G.C., and Corsi, R.L. (2010) Passive Reduction of Human Exposure to Indoor Ozone, *Building and Environment*, 45 (2), 445-452.
- Novoselac, A. and Siegel, J. (2009) Impact of Placement of Portable Air Cleaning Devices in Multizone Residential Environments. *Building and Environment*, 44 (12), 2348-2356.
- Rim, D. and Novoselac, A. (2009) Transport of Particulate and Gaseous Pollutants in the Vicinity of a Human Body. *Building and Environment*, 44 (9), 1840-1849.
- Mukai, C., Siegel, J. and Novoselac, A. (2009) Effect of Airflow Characteristics and Surface Properties on Particle Resuspension. *Journal of Aerosol Science*, 7 (3), 291-301.
- Rim, D., Novoselac, A., and Morrison, G. (2009) The Influence of Chemical Interactions at the Human Surface on Breathing-zone Levels of Reactants and Products, *Indoor Air*, 19 (4), 324-334.
- Rim, D. and Novoselac, A. (2008) Transport of Particle and Gaseous Pollutants around Human Body under Natural and Forced Convection. *ASHRAE Transactions*, 114, (2), 130-142.
- Srebric, J., Yuan, J., and Novoselac, A. (2008). On-Site Experimental Validation of a Coupled Multi-zone and CFD model. *ASHRAE Transactions*, 114 (1), 273-281.
- Novoselac, A., Burley J. B., and Srebric J. (2006). New Convection Correlations for Cooled Ceiling Panels in Room with Mixed and Stratified Airflow. *International Journal of HVAC&R Research*, 12 (2), 281-294.
- Novoselac, A., Burley J. B., and Srebric J. (2006). Development of New and Validation of Existing Convection Correlations for Rooms with Displacement Ventilation Systems. *Energy and Buildings*, 38 (3), 163-173.
- Novoselac, A. and Srebric, J. (2003). Comparison of Air Exchange Efficiency and Contaminant Removal Effectiveness as IAQ Indices. *ASHRAE Transactions*, 109 (2), 339-349.
- Novoselac, A. and Srebric, J. (2002). A Critical Review on the Performance and Design of Combined Cooled Ceiling and Displacement Ventilation Systems. *Energy and Buildings*, 34 (5), 497-509.

*Papers under Review:*

- Goldstein, K. and Novoselac, A. Convective Heat Transfer in Perimeter Building Zones with Linear Slot Ceiling Diffusers. Submitted to *HVAC&R Research Journal*.
- Rim, D. and Novoselac, A. Occupational Exposure to Hazardous Airborne Pollutants: Effects of Source Characteristics. Submitted to *Journal of Occupational and Environmental Hygiene*.
- Novoselac, A. and Srebric J. Experiment-based convection correlations for coarse grid CFD application. Submitted to *Building Simulation*.

*In preparation for Referred Archival Journals:*

- Rim, D. and Novoselac, Validation of Lagrangian Particle Tracking Modeling Methods for Building Pollutant Transport Analyses. In preparation for *HVAC&R Research Journal*.
- Lo, L.J. and Novoselac, A. Pressure Based CFD Boundary Conditions for natural ventilation Analyses. In preparation for *Journal of Wind Engineering & Industrial Aerodynamics*.
- Rivera L. and Novoselac, A. Effect of Wind Turbulence on the Accuracy of the Building Ventilation Rate Measurement. In preparation for *Building and Environment*.

- Clark J. and Novoselac A. Influence of Venetian Blinds on Convection Heat Transfer at Window Surfaces. In preparation for *International Journal of Heat and Mass Transfer*.
- Novoselac, A. Analysis and Comparison of Different Methods for Coupling of Building Heat Transfer and Fluid Flow Models. In preparation for *International Journal of Numerical Methods for Heat & Fluid Flow*.
- B. Refereed Conference Proceedings*
- Stephens B., Novoselac A., and Jeffrey. S.A. (2009) Impacts of HVAC filtration on Air-conditioner Energy Consumption in Residences. *Proceeding of ISIAQ's International Healthy Buildings Conference*, Syracuse, NY, September 13-17, 2009.
- Lo L.J. and Novoselac A. (2009) Ventilation Effects of Occupancy Based air Conditioning in Open Office Spaces. *Proceeding of ISIAQ's International Healthy Buildings Conference*, Syracuse, NY, September 13-17, 2009.
- Rim D. and Novoselac A. (2009) Inhalation Exposure Associated with Accessibility of Source. *Proceeding of ISIAQ's International Healthy Buildings Conference*, Syracuse, NY, September 13-17, 2009.
- Lo, L.J. and Novoselac, A. (2009) Localized Air-conditioning in an Open Office Space. *Proceeding of ROOMVENT 2009*, Busan, South Korea, May 24-27, 2009.
- Rim, D. and Novoselac, A. (2009) Evaluation of Ventilation Effectiveness as an Indicator of Exposure to Indoor Particles. *Proceeding of ROOMVENT 2009*, Busan, South Korea, May 24-27, 2009.
- Mukai, C., Siegel, J., and Novoselac, A. (2008) Effect of Airflow Characteristics on Indoor Particle Resuspension. *Proceeding of AAAR 27th Annual Conference*, Orlando, FL, October 20 – 24 2008.
- Rim, D. and Novoselac, A. (2008) Inhalation Exposure and Accessibility of Source in the Vicinity of Human Body. *Proceeding of 18<sup>th</sup> Annual ISEA-ISEE Conference on Exposure and Health in a Global Environment*, Pasadena, CA, October 11-16, 2008.
- Rim, D. and Novoselac, A. (2008) Applicability of Age of Air as an Indicator of Exposure to Particles. *Proceeding of 18<sup>th</sup> Annual ISEA-ISEE Conference on Exposure and Health in a Global Environment*, Pasadena, CA, October 11-16, 2008.
- Rim, D. and Novoselac, A. (2008) Occupant exposure to resuspended particles from floor surfaces in typical indoor environments. *Proceeding of Indoor Air 2008 Conference*, Copenhagen, Denmark, August 17-22, 2008. Paper ID: 292.
- Kang, S.Y., Siegel, J. and Novoselac, A., (2008) Effective positioning of portable air cleaning devices in multizone residential buildings. *Proceeding of Indoor Air 2008 Conference*, Copenhagen, Denmark, August 17-22, 2008. Paper ID: 644.
- Lohaus, J.H., Novoselac A. and Siegel J.A. (2008) Particle resuspension from indoor flooring materials. *Proceeding of Indoor Air 2008 Conference*, Copenhagen, Denmark, August 17-22, 2008. Paper ID: 342.
- Kunkel, D., Corsi, R., Morrison, G., Novoselac, A., and Siegel, J. (2008) Passive Ozone Control Through Use of Reactive Indoor Wall and Ceiling Materials. *Proceeding of 2008 Air and Waste Management Association Annual Conference*, Portland, Oregon. June 24-26, 2008.
- Novoselac, A. and Rim, D. (2007) Airflow and Particulate Matters Distribution in Vicinity of a Human Body. *Proceeding of Roomvent 2007 Conference*, Helsinki, Finland, June 13-15, 2007.
- Rim, D. and Novoselac, A. (2007) Validation of Transient CFD Simulation of Gaseous Pollutant Flow in Indoor Environment. *McMAT 2007, A SME Applied Mechanics and Materials Conference*, Austin, TX, June 3-7, 2007.
- Novoselac, A. and Rim D. (2006) Effects of the Human Body's Thermal Plume on Pollutant Exposure in an Indoor Environment. *Proceedings of the Air and Waste Management Association / EPA Indoor Air Quality Solutions Conference*, Research Triangle Park, NC, July 17-19, 2006.
- Siegel, J.A., Novoselac, A., and Corsi, R.L. (2006) Indoor Environmental Science and Engineering: An Integrated Academic Program. *Proceedings of the Air and Waste Management Association Environmental Protection Agency Indoor Air Quality Solutions Conference*, Research Triangle Park, NC, July 17-19, 2006.
- Novoselac, A. and Srebric, J. (2003) Sensitivity Study of Parameters Influencing IAQ Indices.

*Proceedings of the 7th International Symposium on Ventilation and Contaminant Control*, Sapporo, Japan, Aug 5-8, 2003.

Novoselac, A. and Srebric, J. (2002) Influence of Different Pollutant Sources on Selection of Ventilation System in Offices with Cooled Ceiling. *Proceedings of Indoor Air 2002*, Monterey, CA, June 30-July 5, 2002.

Srebric, J. and Novoselac, A. (2002) Design of Low-Energy Cooling System by Using Coupled Energy Simulation and Computational Fluid Dynamics. *Proceedings of Roomvent 2002*, Copenhagen, Denmark, September 8–11, 2002.

#### **SOFTWARE:**

Novoselac A. Building Energy and Air Flow (BEAF) Simulation Software. The Pennsylvania State University, PA 2001-2005.

#### **RECENT ORAL PRESENTATIONS:**

Goldstein, K. and Novoselac, A. (2010) Convective Heat Transfer In Rooms With Ceiling Slot Diffusers. Presented at ASHRAE Seminar entitled “Load Calculations Methodologies for Unique Construction Types” Orlando, FL., January 27, 2010.

Novoselac A. and Goldstein, K. (2010) Influence of Venetian Blinds on Convection Heat Transfer at Window Surfaces. Presented at ASHRAE Seminar entitled “Load Calculations Methodologies for Unique Construction Types.” Orlando, FL., January 27, 2010.

Novoselac, A. and Siegel, J.A. (2010) Simulating Particle Transport for Analysis of Portable Air Cleaning Devices. Presented at ASHRAE Seminar entitled “Modeling of Particle Transport in Indoor Environment for Air Quality Analyses.” Orlando, FL., January 26, 2010.

Novoselac, A. (2009) Human Exposure to Indoor Pollutants: Effects of Source Characteristics and Ventilation System. Invited speaker to Environmental Engineering Lecture Series at TAMUK, TX, November 18, 2009.

Novoselac, A. (2009) Pressure and Pollutant Control in High Rise Residential Buildings. Presented at GS Construction Corporate Quarter, Seoul, South Korea, May 28, 2009.

Novoselac, A. (2009) Airflow and Energy Analyses for Development and Implementation of Sustainable Building Technology. Presented at Samsung Corporate Quarter, Seoul, South Korea, May 28, 2009.

Lo, L.J. and Novoselac, A. (2009) Localized Air-conditioning in an Open Office Space. Presented at ROOMVENT conference in Busan, South Korea, May 24-27, 2009.

Rim, D. and Novoselac, A. (2009) Evaluation of Ventilation Effectiveness as an Indicator of Exposure to Indoor Particles. Presented at ROOMVENT conference in Busan, South Korea, May 24-27, 2009.

Novoselac, A. (2009) The Influence of Chemical Interactions at the Human Surface on Breathing-zone Levels of Reactants and Products. Presented at the ASHRAE seminar “Modeling Techniques for Personal Ventilation”, ASHRAE 2009 Winter meeting, Louisville, Kentucky, Jun 20-24, 2009.

Novoselac, A. (2009) Architectural Engineering and Building Environmental System Group at UT. Presented at CAEE Alumni Meeting “The 50th Reunion for 1959”. Austin, TX, April 30, 2009

Novoselac, A. (2009) How do sources relate to human exposure? Guest speaker at the “Building America Expert Meeting”, US Department of Energy meeting in Chicago, IL, January 23, 2009.

Novoselac, A. (2008) Advanced Tools for Building Simulation. Guest speaker at the Seminar in Sustainable Design at the UT School of Architecture, Austin, TX, October 29, 2008.

Mukai, C., Siegel, J., and Novoselac, A. (2008) Effect of Airflow Characteristics on Indoor Particle Resuspension. Presented at AAAR 27th Annual Conference, Orlando, FL, October 22, 2008.

Kang, S.Y., Siegel, J. and Novoselac, A. (2008) Effective positioning of portable air cleaning devices in multizone residential buildings. Presented at Indoor Air 2008 Conference, Copenhagen, Denmark, 19 August 2008.

Rim, D. and Novoselac, A. (2008) Occupant exposure to resuspended particles from floor surfaces in typical indoor environments. Presented at Indoor Air 2008 Conference, Copenhagen, Denmark, 20 August 2008.

- Lohaus, J.H., Novoselac A. and Siegel J.A. (2008) Particle resuspension from indoor flooring materials. Presented at Indoor Air 2008 Conference, Copenhagen, Denmark, 21, August 2008.
- Novoselac, A. (2008) Integration of Photovoltaic Systems in High-rise Buildings. Presented at Samsung Corporate Quarter, Seoul, South Korea, May 14, 2008.
- Novoselac, A. (2008) Solar Decathlon Competition Experience. Renewable Technology Seminar, Seoul National University, Seoul, South Korea, May 16, 2008.
- Novoselac, A. (2008) Building Energy and Indoor Environmental Research. Presented at Daewoo Engineering and Construction Head Office, Jung-gu, South Korea, May 17, 2008.
- Novoselac, A. (2008) Indoor Environmental Science and Engineering Program at UT at Austin. Presentation for Students and Faculty of Hanyang University, Mechanical Engineering Hanyang University, South Korea, May 17, 2008.
- O'Brien, W. and Novoselac, A. (2008) Building Models as a Teaching Tool. Faculty Innovation Seminars, University of Texas at Austin, April 15, 2008.
- Novoselac, A. (2007) Indoor Environmental Science and Engineering. The Academy of Distinguished Alumni Meeting at CEER, University of Texas at Austin, November 10, 2007.
- Novoselac, A. and Lee, E. (2007) Validation of Different Modeling Methods for Natural Ventilation. ASHRAE seminar "Natural ventilation: Modeling and Measurements", Long Beach, CA, June 23-27, 2007.
- Novoselac, A. and Rim, D. (2007) Airflow and Particulate Matters Distribution in Vicinity of a Human Body", ROOMVENT Conference in Helsinki, Finland, June 13-15, 2007.
- Rim, D. and Novoselac A. (2007) Validation of Transient CFD Simulation of Gaseous Pollutant Flow in Indoor Environment. ASME Applied Mechanics and Materials (McMAT) Conference, Austin, TX, June 3-7, 2007.
- Novoselac A., Srebric J. and Vukovic, V. (2006) Simplified Physical and Simulation Modeling of Building Occupants. Presentation at ASHRAE seminar "Experimental and CFD Benchmark Studies of Indoor Flow around Thermal Manikins", ASHRAE 2006 winter meeting, Chicago, IL, January 21-25, 2006.
- Novoselac, A., Siegel, J.A., and Corsi, R.L. (2006) UT Indoor Air Quality Research Program. Presentation at Program for Indoor Environmental Solutions meeting at the University of Texas at Austin, March 31, 2006.
- Novoselac, A., Siegel, J.A., and Corsi, R.L. (2006) Human Exposure Study. Presentation at Texas Indoor Environmental Quality Institute Meeting at the University of Texas at Tyler, April 3, 2006.
- Novoselac, A., Siegel, J., (2006) Indoor Air Quality laboratory at UT Austin. Presentation and tour for participants of "Home Performance Conference 2006", ACI, in Austin, TX, May 22-26, 2006.
- Novoselac, A. and Rim, D. (2006) Effects of the Human Body's Thermal Plume on Pollutant Exposure in an Indoor Environment. Presented at the Indoor Environmental Quality Conference in Durham, NC, July 17-19, 2006.
- Siegel, J.A., Novoselac, A., and Corsi, R.L. (2006) Indoor Environmental Science and Engineering: An Integrated Academic Program. Presentation at the Air and Waste Management Association, Environmental Protection Agency Indoor Air Quality Solutions Conference, Raleigh-Durham NC, July 19, 2006.

**COURSES:**

ARE 346N:	Building Environmental Systems	Fall 05, Spr 07, Spr 08, Fall 08, Spr 10
ARE 383:	Energy Simulation in Building Design	Spring 06, Spring 07, Spring 09
ARE 372:	Modeling of Air and Pollutant Flows in Buildings	Fall 06, Fall 07, Fall 08
ARE 389H	HVAC Design	Spring 08, Spring 10
ARE F383	Indoor Air Quality: Filed Measurements	Summer 08
CE 397	Selected Topics in Sustainability (one of 7 lecturers)	Spring 09

**GRANTS AND CONTRACTS:**

**Individual:**

Title	Agency	Grant Total	Grant Period
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Atila Novoselac  
Civil, Architectural and Environmental Engineering

Revised March, 2010

Transport of Particulate Contaminants in Buildings with Natural Ventilation Systems	ASHRAE New Invest. Award	\$150,000	09/10-08/13
CFD Resource Decision in Particle Transport Modeling	ASHRAE	\$121,200	08/10-06/12
Inhalation Exposure to Pollutants in the Sleeping Microenvironment	ASHRAE	\$10,000	07/10-07/11
Design Procedure for Stack Pressure Control in High Rise Residential Buildings - Phase One	GS Construction Co.	\$106,000	04/09-08/10
Heat Transfer Modeling on Window Surfaces	ASHRAE	\$10,000	07/09-07/10
Airflow with Localized Air-Conditioning in Open Offices	ASHRAE	\$10,000	07/09-07/10
Occupational Exposure to Hazardous Airborne Pollutants: Effect of Source Characteristics	SWCOEH (NIOSH)	\$10,000	12/08-06/09
The Influence of Tile Floor Finish on Building Thermal Performance and Energy Consumption in Buildings	Dal-Tile Corporation	\$19,000	01/09-12/09
Transport and Fate of Ambient Ultrafine Particles in Buildings	NIST	\$72,450	02/09-01/10
Development of Internal Surface Convection Correlations for Energy and Load Calculation Methods	ASHRAE	\$168,200	08/08-08/11
Integration of Photovoltaic panels into High Rise Buildings	Samsung Construction Co.	\$70,000	09/07-12/08
Transport of Particulate Contaminants in Buildings with Natural Ventilation - SRA Grant	Graduate School, UT at Austin	\$20,000	06/07-09/07
Indoor Air Quality and Human Exposure to Particles	ASHRAE	\$9,000	01/07-10/08

**Joint:**

Co-Investigators	Title	Agency	Grant Total	Grant Period
Kerry Kinney Jeffrey Siegel	Green Building, Sustainability, and Energy Efficiency in the UTest House - Faculty Innovation Grant	College of Eng., UT at Austin	\$15,000	09/09-09/10
Jeffrey Siegel	Modeling and Measuring Energy Consequence of Filtration in Residential and Light Commercial Buildings	ASHRAE	\$159,000	07/07-06/09
William O'Brien	Building Models as a Teaching Tool - Faculty Innovation Grant	College of Eng., UT at Austin	\$15,000	09/07-09/08
Michael Garrison	Solar Decathlon Project 2007	Department of Energy (DOE) & UT Co-op	\$131,000	10/05-10/07

**Ph.D. STUDENTS - GRADUATED:**

Donghyun Rim

**Ph.D. STUDENTS IN PROGRESS:**

James Lo, Jordan Clark, Brandon Boor, Hogan Win

**POSTDOCTORAL RESEARCHERS:**

Seok Youn Kang

**M.S. STUDENTS - GRADUATED:** (\* coadvised)

Eon Lee, Aziz Hussaini, Catherine Mukai\*, Donna Kunkel\*, Brent Stephen\*, Samuel Covey,  
Kate Goldstein

**M.S. STUDENTS - IN PROGRESS:**

Bonggil Jeon

**UNDERGRADUATE RESEARCHERS:**

Joeny Bui - McNair Scholar, Luis Rivera - TREX Program, Leila Alderman - BDP Program

**VITA:** *(One paragraph that can be used for general purposes)*

Dr. Novoselac Atila received his Ph.D. from Penn State University in architectural engineering. He joined the University of Texas at Austin faculty in 2005. Dr. Novoselac's area of expertise includes numerical simulation and measurements of airflow and pollutant distribution in buildings, conservation of energy, and improvement of indoor air quality. His current research interests encompass modeling of pollutant transport, assessing human exposure to pollutants, development and experimental validation of models for building thermal and airflow analyses, energy and ventilation systems in high rise buildings.