

# Curriculum Vitae Sylvain Leduc



## Personal details

**First name** Sylvain  
**Last name** Leduc  
**Nationality** French  
**Date, place of birth** 16<sup>th</sup> February 1977, Le Mans, France

**Address** International Institute for Applied Systems Analysis,  
A-2361 Laxenburg, Austria

**Tel** (+43)-2236-807-267  
**Fax** (+43)-2236-807-599  
**E-mail** leduc@iiasa.ac.at

## Education

- 2009** Doctoral thesis, Luleå University of Technology, Sweden.  
*Subject: Development of an Optimization Model for the Location of Biofuel Production Plants.*
- 2004** Licentiate degree, Luleå University of Technology, Sweden.  
*Subject: Study of the Reduction of Particle Emissions and Borate Black Liquor Gasification in Bioenergy Systems.*
- 2000** Bachelor of science degree, École Supérieure de l'Énergie et des Matériaux, ESEM (High engineering school of energy and material), Orléans, France.  
*Subject: Modeling of the mixer in the T-pipe 321/327.*
- 1996** Senior High school degree, Lycée Montesquieu, Le Mans, France.

## Languages

**French** Mother tongue  
**English** Fluent  
**Swedish** Fluent  
**German** Good knowledge

## Computing

**Operative System** Windows, UNIX  
**Programming** Matlab, GAMS, Pascal, Fortran, C, HTML  
**Software** Computational Fluid Dynamics (CFD): FLUENT, CFX  
GIS: ArcMap  
Mechanical: I-deas  
Process Engineering: ASPENplus

## Professional experience

### August 2007 - present

Research scholar at the International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria.

### March 2002 - July 2007

PhD student at the Division of Energy Engineering, Luleå University of Technology, Sweden.

### October 2000 - February 2002

Military service (Coopération pour le service militaire français), at the Division of Energy Engineering, Luleå University of Technology, Sweden.

### April - September 2000

Engineer internship for the nuclear power plant at Sydkraft, Oskarshamn, Sweden. Luleå University of Technology, Sweden.

## Publications

### Journals

1. Schmidt, J., Leduc, S., Dotzauer, E., Kindermann, G., Schmid, E. (2010). Cost-effective CO<sub>2</sub> emission reduction through heat, power and biofuel production from woody biomass: A spatially explicit comparison of conversion technologies. *Applied Energy*, 87 (7): 2128-2141.
2. Leduc, S., Starfelt, F., Dotzauer, E., Kindermann, G., McCallum, I., Obersteiner, M., Lundgren, J. (2010). Optimal location of lignocellulosic ethanol refineries with polygeneration in Sweden. *Energy*, 35 (6): 2709–2716.
3. Leduc, S., Lundgren, J., Franklin, O., Dotzauer, E. (2010). Location of a biomass based methanol production plant: A dynamic problem in northern Sweden. *Applied Energy*, 87 (1): 68–75.
4. Leduc, S., Natarajan, K., Dotzauer, E., McCallum, I., Obersteiner, M. (2009). Optimizing Biodiesel Production in India. *Applied Energy*, 86 (1): 125-131.
5. Schmidt, J., Leduc, S., Dotzauer, E., Kindermann, G., Schmid, E. (2009). Biofuel Production in Austria Considering the Use of Waste Heat: a Study on Costs and Potentials of Greenhouse Gas Reduction. *Jahrbuch der Österreichischen Gesellschaft für Agrarökonomie*, 18 (3): 107-116.
6. Leduc, S., Schmid, E., Obersteiner, M., Riahi, K. (2009). Methanol Production by Gasification Using a Geographically Explicit Model. *Biomass and Bioenergy*, 33 (5): 745-751.
7. Leduc, S., Schwab, D., Dotzauer, E., Schmid, E., Obersteiner, M. (2008). Optimal Location of Wood Gasification Plants for Methanol Production with Heat Recovery. *International Journal of Energy Research*, 32 (12): 1080-1091.
8. Leduc, S., Fredriksson, C., Hermansson, R. (2006). Particle-tracking Option in Fluent Validated by Simulation of a Low-pressure Impactor. *Advanced Powder Technology*, 17 (1): 99-111.

### Conferences

1. Wu, Y., Leduc, S. Bioenergy Production in the Forest Market of Southern US. International Energy Workshop (IEW), 21-23 June 2010, Stockholm, Sweden.
2. Schmidt, J., Leduc, S., Dotzauer, E., Kindermann, G., Schmid, E. Potentials for Biomass fired Combined Heat and Power Plants considering the Spatial Distribution of Biomass Supply and

- Heat Demand: an Austrian Case Study. 10<sup>th</sup> IAEE European Conference Energy, Policies and Technologies for Sustainable Economies, 7-10 September 2009, Vienna, Austria.
3. Schmidt, J., Leduc, S., Dotzauer, E., Kindermann, G., Greigeritsch, T., Schmid, E. Potentials of Bioenergy Production in the Austrian Forest Market. International Scientific Conference: The European Forest-based Sector: Bio-responses to Address New Climate and Energy Challenges? 6-8 November, 2008, Nancy, France.
  4. Schmidt, J., Leduc, S., Dotzauer, E., Kindermann, G., Schmid, E. Optimizing the Supply Chain of Biofuel Production Including the Use of Waste Heat: an Austrian Case Study. ÖGA Tagung 2008 - Österreichische Gesellschaft für Agrarökonomie, 18 - 19 September 2008, Vienna, Austria.
  5. Leduc, S., Schwab, D., Dotzauer, E., Schmid, E. Obersteiner, M. Optimal Location of Wood Gasification Plants under Poly-Production. IGEC-III, 3<sup>rd</sup> International Green Energy Conference, 18-20 June 2007, Västerås, Sweden.
  6. Leduc, S., Lundgren, J., Schmid, E., Dotzauer, E. Optimal Location for a Biomass Based Methanol Production Plant: Case Study in Northern Sweden. 15<sup>th</sup> European Biomass Conference and Exhibition, 7-11 May 2007, Berlin, Germany.
  7. Obersteiner, M., Leduc, S. The Geography of 2<sup>nd</sup> Generation Biofuel Potentials in Africa. GFSE-6 Africa is Energizing Itself, 29 November - 1 December 2006, Vienna, Austria.
  8. Leduc, S., Wang, C., Westerberg, M. Sweden in the Forefront for a Green Society: a Review on Policy Activities for Greenhouse Gas Emission Reduction. GHGT-8, 8<sup>th</sup> International Conference on Greenhouse Gas Control Technologies, 19-22 June 2006, Trondheim, Norway.
  9. Leduc, S., Ji, X., Yan, J. A Feasibility Study of Black Liquor Booster Gasification with Borate Autocausticizing. ECOS 2005, 18<sup>th</sup> International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, 20-22 June 2005, Trondheim, Norway.

## Reports

1. Rametsteiner E., Nilsson S., Böttcher H., Havlik P., Kraxner F., Leduc S., Obersteiner M., Rydzak F., Schneider U., Schwab D. and Willmore L. (2007) Study of the Effects of Globalization on the Economic Viability of EU Forestry. Final Report of the AGRI Tender Project: AGRI-G4-2006-06, EC Contract Number 30-CE-0097579/00-89, 291 pp. Available at: [http://ec.europa.eu/agriculture/analysis/external/viability\\_forestry/index\\_en.htm](http://ec.europa.eu/agriculture/analysis/external/viability_forestry/index_en.htm).
2. Fredriksson, C., Hermansson, R., Leduc, S. Förbättrad Utformning av Sekundär Förbränningszon i Vedpanna. Technical Report 2002, TPS-02-46.