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Communication skills

- *English*: excellent understanding, speaking and writing;
- *French*: excellent understanding, speaking and writing;
- *Romanian*: mother's tongue;
- *German*: basic notions;
- *Verbal*: very good;
- *Writing*: excellent;
- *Conferencing*: broad experience in high and medium level scientific conferencing, teaching and general public presentations;

Education

Philosophiae Doctor candidate in Chemical Engineering Laval University, Québec, to finish
Master Degree in Chemical Engineering Laval University, Québec, 2000
Industrial chemistry engineer - State Diploma Technical University "Gheorghe Asachi",
Iasi, Romania, 1992

Experience

Adjunct faculty Chemical Engineering Department, Laval University,
Québec, 2004 – present

- Teach (in French) the course "Distillation and Extraction"
- Teach (in French) the course "Conception of Apparata and Instrumentation"

Research professional GIREF, Laval University,
Québec, 2000 – present

- Development of numerical simulators (Finite Element Method);
- Development of parallel algorithms for numerical simulators;
- Installation, configuration and support to users for a parallel machine of Beowulf category;
- Support for the members of a medium size research group in numerical simulation;
- Mentoring for graduate students in numerical simulation;
- Modeling of visco-elastic structures in large deformations;
- Modeling in fluid dynamics, flowing in porous and fractured media, electro-magnetism and structures;
- Modeling and numerics for Electrical Capacitance Tomography (inverse problem);
- Network administration (Unix/Linux and Windows).

Computing resources administrator Chemical Engineering Department, Laval University,
Québec, 1996 – 2000

- Administration of heterogeneous networks (Windows, Linux and Unix).

Research assistant Chemical Engineering Department, Laval University,
Québec, 1995 – 1999

- Numerical simulation of the dynamics of a chromatographic column;
- NNFit (<http://www.gch.ulaval.ca/nnfit/english>);
- Programming for pedagogic projects.

Freelance teacher and consultant 2001 – present

- Introductory courses in Linux, Unix;
- Linux consultancy;
- Scientific programming and development of graphic interfaces.

Teaching assistant Technical University "Gheorghe Asachi",
Iasi, Romania, 1993 – 1995

- All computer laboratory works for the course "Pascal programming for engineers".

Member of the KDE project 1996 – present

Member of KDE Core Team 1998 – 2002

Internet (<http://www.kde.org>)

- Programming of graphic interfaces (C++, Python), HTML publishing;
- Member of the core team and an official representative for Canada (until 2002);
- Programming manual co-author (see the list of publications);
- Spare time work (volunteer).

Scientific researcher Romanian Academy, Oenology Laboratory,
Iasi, Romania, 1992 – 1995

- Research concerning the chemical analysis of wines;
- Computer assisted automation of analyses.

A list of my publications is attached.

Skills

Very good development and handling of inter-human relations.

Scientific:

- Parallel programming in large scientific codes using MPI;
- Resolution of large algebraic systems on parallel computers using PETSc;
- Clustering: building, configuration and administration of BEOWULF clusters;
- Numerical analysis and numerical simulation;
- Solid knowledge of chemical engineering theory;
- Learn with ease new mathematical, scientific and engineering concepts;
- Acquire with ease new technologies in scientific analysis and computing.

Computing:

- Rich expertise in object oriented programming (C++, Python, Ruby, Java);
- Broad experience with code management tools: compilers, source managers (CVS, SVN etc.), bug trackers, documentation generators and more;
- Computer network administration (Unix, Linux, Windows);
- Programming of graphic interfaces (Trolltech Qt, KDE);
- Mastering of numerous computer programs for consumers, for development and scientific.
- Creation of scientific documentation (books, using word processors and \LaTeX);
- Generic programming: C, C++, HTML, \LaTeX , tcsh, bash, GUI, Unix programming;
- Experience with: Java, SQL, Matlab, Basic, Visual Basic, FORTRAN, Pascal;
- Applications: Maple, Matlab, Emacs, Word, Excel, PowerPoint, OpenOffice, Grams, SigmaPlot, Hyperchem (and many others).

Hobby

Psychopedagogy, psychosociology, jazz and classical music, violin and guitar playing, science-fiction, photography.

Other

- Prize "Meritory member of the personnel" from the students' association in the Chemical Engineering Department at the *Gala of Student Merits 1999* at 24th Festival of the science and engineering, for the quality of offered services and for the nature of the human relations I developed during my work as an IT system administrator (Laval University, Québec, February 1999).

Publications

1. Fortin, A., Benmoussa, K., **Tibirna, C.**, "A reformulation of the Lesaint-Raviart method for advection equations", *Communications in Numerical Methods in Engineering*, 2009, published online, available from <http://doi.wiley.com/10.1002/cnm.1228>
2. **Tibirna, C.**, Edouard, D., Fortin, A. and Larachi, F., "Usability of ECT for quantitative and qualitative characterization of trickle-bed flow dynamics subject to filtration conditions", *Chemical Engineering and Processing*, 45, 2006, pp. 538-545
3. Sweet, D., Granroth, K., **Tibirna, C.**, Faure, D., Sand, E., Westerfeld, S., Nolden, R., Marjamaki, D., Bar-Joseph, C., "KDE 2.0 Development", SAMS/McMillan Publishing, 2000
4. Odageriu, Gh., Cotea, V.V., Barboiu, B.-Al., **Tibirna, C.**, "Modificarea continutului de aminoacizi din vin ca urmare a fermentatiei malolactice", *Cercetari Agronomice în Moldova*, 1-2(101), 1994, p. 209
5. Tibirna, Mihaela, **Tibirna, C.**, Chiriac, C.I., "Proprietatile fotocromice si aplicatiile polimerilor pe baza de spiropirani", *Revista de Materiale Plastice* (4), 1994

Conferences and Symposia

1. **Tibirna, C.**, Edouard, D., Fortin, A. and Larachi, F. *Usability of ECT for Quantitative and Qualitative Characterization of Trickle-Bed Flow Dynamics Experiencing Filtration Conditions*, Fifth International Workshop on Advances in Signal Processing for Non-Destructive Evaluation of Materials (Vth IWASPNDDEM), August 2-4, Québec, Canada, 2005, 6 p.
2. Kenny, G., Therrien, R., Fortin, A., **Tibirna, C.**, *Large-scale mass transport modelling in discretely-fractured porous media*, 5th Joint CGS/IAH Groundwater Specialty Conference, October 24-27, Québec, Canada, 2004, 8 p.
3. Kaliaguine, S., Lacroix, R., **Tibirna, C.**, "Numerical simulation of chromatographic columns with bidispersed fillings", presented at 15th Canadian Symposium of Catalysis, Québec, Canada, 17-20 May 1998
4. **Tibirna C.**, Gorduza V., Gorduza E.-V., "Corelarea unor date clinice si biochimice pe baza prelucrării matematice pe calculator", in "Tendinte si prioritati în sinteza si aplicarea colorantilor", First National Symposium of Colorants' Chemistry, Iasi, 1992, pp.263-281
5. Gorduza, Valeria, **Tibirna, C.**, Tarabasanu, C., "Corelari cuanto-chimice structura -culoare pentru antociani", presented during the "Romanian Academic Days", Timisoara (20-25 May 1995)

6. Tarabasanu, C., **Tibirna, C.**, Gorduza, Valeria, "*Modelarea echilibrelor multiple din solutii de antociani, dependent de pH*", presented at the National Conference of Chemists and Colorists – Bucarest, Roumanie (June 1995)
7. Cotea, V.V, Odageriu, Gh., **Tibirna, C.**, Barboiu, B.-Al., "*Puterea invertazica a musturilor obtinute din diferite soiuri cultivate în podgoria Copou-Iasi*", presented at the Scientific Symposium of the professors of the Agronomic University Iasi on 19 May 1994. To appear in the journal "Lucrari stiintifice" of the Agronomic University Iasi (1994)
8. Sauciuc, J., Cotea D.V., Odageriu Gh., Cotea, V.V., Barboiu, B.-Al., **Tibirna, C.**, "*Suprasaturarea vinurilor in hidrogenotartrat acid de potasiu*", Scientific Symposium of the professors of the Agronomic University Iasi - 20 May 1994. To appear in the journal "Lucrari stiintifice" of the Agronomic University Iasi (1994)
9. Cotea, D.V., Sauciuc, J., Cotea, V.V., Odageriu, Gh., **Tibirna, C.**, Barboiu, B.-Al., "*La température de saturation des vins en hydrogencarboxylate de potassium*", Scientific Symposium of the professors of Agronomic University Iasi, 20 May 1994. Published in the journal "Lucrari stiintifice" of the Agronomic University Iasi (1994)
10. **Tibirna, C.**, Cotea, V.V., Barboiu, B.-Al., "*TARTPLUS*" - program pentru calcularea excesului de tartrat acid de potasiu si a temperaturii de saturare a vinurilor, poster presentation to the Scientific Symposium of the professors of Agronomic University Iasi , 19 May 1994. Published in the journal "Cercetari Agronomice în Moldova" (1), 1995
11. Cotea, V.V., Odageriu, Gh., **Tibirna, C.**, Trif, D., Barboiu, B.-Al., "*Continutul de aminoacizi din vinuri spumante mentinute timp îndelungat pe drojdie*", poster presentation to the Scientific Symposium of the professors of Agronomic University Iasi , 19 May 1994. Published in the journal " Lucrari stiintifice" of the Agronomic University Iasi (1994)
12. **Tibirna, C.**, "*Obiectivarea observatiilor asupra culorii vinului*", presented at the Scientific Symposium of the Agronomic University Iasi (5-10 May 1995)
13. Cotea, V.D., Cotea, V.V., Odageriu, Gh., **Tibirna, C.**, Bilius, I., Carja, N., "*Studiul unor procedee de producere a vinurilor licoroase*", presented at the Scientific Symposium of the professors of the Agronomic University Iasi, 21 May 1995. Published in the journal "Lucrari stiintifice" of the Agronomic University Iasi (1995)
14. Cotea, V.V., Cotea, V.D., Carja, N., Bilius, I., Odageriu, Gh., **Tibirna, C.**, "*Raportul glucoza/fructoza la vinurile demidulci si dulci de Cotnari*", presented at the Scientific Symposium of the professors of the Agronomic University Iasi, 21 May 1995. Published in the journal "Lucrari stiintifice" of the Agronomic University Iasi (1995)
15. Patras, Antoanela, **Tibirna, C.**, Cotea, V.V., Odageriu, Gh., "*Aspecte privind cinetica echilibrelor formelor tautomere ale antocianilor influentate de pH*", presented at the Scientific Symposium of the professors of the Agronomic University Iasi, 21 May 1995. Published in the journal "Lucrari stiintifice" of the Agronomic University Iasi (1995)
16. Odageriu, Gh., Cotea, V.V., Trif, D., **Tibirna, C.**, "*Stabilitatea fata de precipitarea tartrica a unor vinuri materie prima pentru spumare*", presented at the Scientific Symposium of the professors of the Agronomic University Iasi, 21 May 1995. Published in the journal "Lucrari stiintifice" of the Agronomic University Iasi (1995)
17. **Tibirna, C.**, Cotea, V.V., Odageriu, Gh., Patras, Antoanela, "*Obiectivarea observarii culorii vinurilor printr-o metoda moderna*", presented at the Scientific Symposium of the professors of the Agronomic University Iasi, 21 May 1995. Published in the journal "Lucrari stiintifice" of the Agronomic University Iasi (1995)