

MAIN TECHNICAL PUBLICATIONS

Marcel Lacroix

Winter 2024

Books

- L1. Cengel, Y., Boles, M., Kanoglu, M., Lacroix, M., '*Thermodynamique: Une approche pragmatique*', 3^{ème} Édition, McGraw-Hill-Chenelière, ISBN 978-2-7650-7900-2, 872 pages, 2019;
(<https://cheneliere.ca/10865-livre-thermodynamique-3e-edition-une-approche-pragmatique.html>)
- L2. Lacroix, M., '*Questions d'énergie*', Presses Internationales Polytechnique, ISBN 978-2-553-01708-7, 132 pages, Septembre 2016;
(<http://www.presses-polytechnique.ca/fr/questions-d-energie>)
- L3. Lacroix, M., '*Parlez-moi du nucléaire*', Presses Internationales Polytechnique, ISBN 978-2-553-01704-9, 220 pages, Mars 2016;
(<http://www.presses-polytechnique.ca/fr/parlez-moi-du-nucleaire>)
- L4. Cengel, Y., Boles, M., Lacroix, M., '*Thermodynamique: Une approche pragmatique*', 2^{ème} Édition, McGraw-Hill-Chenelière, ISBN 978-2-7651-0691-3, 785 pages, 2014;
(<http://www.cheneliere.ca/8670-livre-thermodynamique-2e-edition-une-approche-pragmatique.html>)
- L5. Lacroix, M., '*Le nucléaire démystifié*', Éditions Multi-Concept inc., ISBN 978-2-9813212-0-6, 208 pages, 2012.
- L6. Lacroix, M., '*L'énergie au quotidien*', Éditions MultiMondes, ISBN 978-2-89544-179-3, 203 pages, 2011; (<http://multim.com/titre/index.php?ID=349>)
- L7. Cengel, Y., Boles, M., Lacroix, M., '*Thermodynamique: Une approche pragmatique*', McGraw-Hill-Chenelière, ISBN 978-2-7651-0511-4, 768 pages, 2008.
- L8. Lacroix, M., "*Modeling of Latent Heat Storage Systems*", in Thermal Energy Storage Systems and Applications, Wiley, UK, edited by I. Dincer and M.A. Rosen, 2002, ISBN 0-471-49573-5, Chapter 7, pp. 303-335.

Peer-refereed articles in technical journals

- A1. El-Hassnaoui, A., Lacroix, M., "Real Time Prediction of Protective Bank Profile inside a Cylindrical Electric Arc Furnace using Inverse Artificial Neural Networks", Applied Thermal Engineering, submitted for publication, 31 pages, March 2024.
- A2. El-Hassnaoui, A., Lacroix, M., "An Innovative Inverse Model for Predicting the Minimum Protective Bank inside a Cylindrical Electric Arc Furnace", Applied Thermal Engineering, submitted for publication, 24 pages, November 2023.
- A3. Hafid, M., Lacroix, M., Hebbir, N., "Inverse Heat Transfer Prediction of the Thermal Parameters of Tumors during Cryosurgery", International Journal of Thermal Sciences, vol. 192, (2023), 108453.
- A4. Hashemzadeh, P., Désilets, M., Lacroix, M., Jokar, A., "Online State Estimation of Li-ion Batteries using Continuous-Discrete Nonlinear Kalman Filters based on a Nonlinear Simplified Electrochemical Model", Electrochimica Acta, accepted for publication, 40 pages, February 2024.
- A5. Hafid, M., Hebbir, N., Lacroix, M., Joly, P., "CFD Modelling of a Turbulent CH₄/H₂/N₂ Jet Diffusion Flame with Detailed Chemistry", Journal of Heat and Mass Transfer, published on line, 15 August 2022, 16 pages.
- A6. Hafid, M., Hebbir, N., Lacroix, M., Joly, P., "Simulating of Non-Premixed Turbulent Combustion Using a Presumed Probability Density Function Method", Journal of Heat and Mass Transfer, published on line, 26 May 2022, 13 pages.
- A7. Hashemzadeh, P., Désilets, M., Lacroix, M., Jokar, A., "Investigation of the P2D and of the Modified Single-Particle models for Predicting the Non-Linear Behavior of Li-ion Batteries", Journal of Energy Storage, vol. 52, pp. 1-16, 2022.
- A8. Dupuy, T., Jaeger, M., Lacroix, M., Oukacine, F., Prusek, T., "Multiscale Modeling of the Effects of Fouling Deposits in Steam Generators", Nuclear Engineering and Design, submitted for publication, 19 pages, October 2022.
- A9. Dupuy, T., Prusek, T., Oukacine, F., Lacroix, M., Kaiss, A., Clerc, J.P., Jaeger, M., "Fractal Description of Fouling Deposits in Boiling Heat Transfer Modelling", International Journal of Heat and Mass Transfer, vol. 145, pp. 1-12, December 2019.
- A10. Lacroix, M., "Le scientifique et le catastrophisme dans les débats de société qui touchent des enjeux scientifiques et technologiques", Bulletin du Centre sur l'enseignement et l'apprentissage des sciences de l'Université de Sherbrooke, no. 5, Avril 2018, pages 28-34.
- A11. Hafid, M., Lacroix, M., "Fast Inverse Prediction of the Freezing Front in Cryosurgery", Journal of Thermal Biology, vol. 69, pp. 13-22, 2017.
- A12. Hafid, M., Lacroix, M., "Prediction of the Thermal Parameters of a High-Temperature Metallurgical Reactor using Inverse Heat Transfer", International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering, vol. 10, no. 6, pp. 913-919, 2016.

- A13. Jokar, A., Désilets, M., Lacroix, M., Zaghbi, K., "Mesoscopic Modeling and Parameter Estimation of a Lithium-Ion Battery based on LiFePO_4 /Graphite", Journal of Power Sources, vol. 379, pp. 84-90, 1 March 2018.
- A14. Trabelsi, S., Hafid, M., Poncet, S., Lacroix, M., Poirier, M., "Rheology of Ethylene-and Propylene-Glycol Ice Slurries: Experiments and ANN Model", International Journal of Refrigeration, vol. 82, pp. 447-460, 2017.
- A15. Hafid, M., Lacroix, M., "An Inverse Heat Transfer Algorithm for Predicting the Thermal Properties of Tumors during Cryosurgery", International Journal of Medical, Health, Biomedical, Bioengineering and Pharmaceutical Engineering, vol. 11, No. 6, pp. 298-306, 2017.
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- A17. Rajabloo, B., Jokar, A., Désilets, M., Lacroix, M., " An Inverse Method for Estimating the Electrochemical Parameters of Lithium-ion Batteries, Part II: Implementation", Journal of Electrochemical Society, 164 (2), pp. A99-A105, 2017.
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- A19. Hafid, M., Lacroix, M., "An Inverse Heat Transfer method for Predicting the Thermal Characteristics of a Molten Material Reactor", Applied Thermal Engineering, vol. 108, pp. 140-149, 2016.
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- A21. Hafid, M., Lacroix, M., "Inverse Heat Transfer Analysis of a Melting Furnace using Levenberg-Marquardt Method", International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering, vol. 10, no. 7, pp. 1196-1203, 2016.
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- A26. Blais, M., Désilets, M., Lacroix, M., " Optimization of the Cathode Block Shape of an Aluminum Electrolysis Cell", in press, Journal of Applied Thermal Engineering, vol. 58, no. 1-2, pp. 439-446, September 2013.
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- A34. Marois, M.A., Désilets, M., Lacroix, M., " Prediction of a 2-D Solidification Front in High Temperature Furnaces by an Inverse Analysis ", Numerical Heat Transfer, Part A, vol. 59, pp. 151-166, 2011.
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- A44. Cliche, A., Lacroix, M., "Optimization of Ice Making in Laminar Falling Films", Energy Conversion and Management, vol. 47, issues 15-16, pp. 2260-2270, 2006.
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Peer-refereed articles in the proceedings of international conferences

- C1. Dupuy, T., Prusek, T., Oukacine, F., Lacroix, M., Jaeger, M. "A Methodology for Predicting the Fouling of Steam Generators and its impact on their performance", 18th International Topical Meeting on Nuclear Reactor Thermal Hydraulics, Portland, USA, August 18-23, 2019.
- C2. Dupuy, T., Prusek, T., Oukacine, F., Lacroix, M., Jaeger, M. "Thermal and Fractal Modeling of Fouling Deposits in Steam Generators", 27th International Conference on Nuclear Engineering, Tsukuba, Ibaraki, Japan, May 19-24, 2019.
- C3. Hafid, M., Lacroix, M., "An Inverse Heat Transfer Algorithm for predicting the Thermal Properties of Tumors during Cryosurgery", 19th International Conference on Biophysical and Biomedical Engineering, Paris, France, June 25-26, 2017.
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- C5. Jokar, A., Rajabloo, B., Désilets, M., Lacroix, M., "An On-Line Electrochemical Parameter Estimation Study on Lithium-Ion Batteries using Neural Network", Pacific Rim Meeting on Electrochemical and Solid-State Science, Honolulu, Hawaii, October 2-7, 2016.
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- C17. Marois, M.A., Bertrand, C., Désilets, M., Coulombe, M.M., Lacroix, M., " Comparison of two numerical methods for predicting side ledges in aluminum electrolysis cells", TMS 2009 Annual Meeting, Proceedings of Light Metals, February 15-19, pp. 563-568, San Francisco, California, USA.
- C18. Marois, M.A., Lacroix, M. " Analysis of the squeeze-flow between a heat sink and a flip-chip", Canadian Society for Mechanical Engineering Forum 2008, organized by the University of Ottawa, Ottawa, Canada, June 5- June 8, 2008.
- C19. Ahmed-Hared, I., Dirion, J.L., Salvador, S., Lacroix, M., " Optimization of the Pyrolysis of Phosphoric Acid Impregnated Wood in an Electrically Heated Rotary Kiln", 17th International Symposium on Analytical and Applied Pyrolysis, organized by the Hungarian Academy of Sciences, Budapest, Hungary, May 21st to May 26th 2006.
- C20. Ait Hammou, Z., Lacroix, M., " A New Thermal Storage System for the Management of both solar and electric Energy", 20th Canadian Congress of Applied Mechanics, organized by McGill University, Montréal, Canada, May 30th to June 2nd 2005.
- C21. Groulx, D., Lacroix, M., " Study of Close Contact Melting of Ice from a Sliding Heated Plate", 20th Canadian Congress of Applied Mechanics, organized by McGill University, Montréal, Canada, May 30th to June 2nd 2005.
- C22. Tadrari, O., Lacroix, M., " Prediction and Control of Protective Banks in Electric Arc Furnaces by Inverse Heat Transfer", 20th Canadian Congress of Applied Mechanics, organized by McGill University, Montréal, Canada, May 30th to June 2nd 2005.

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- C56. Benmadda, M., Lacroix, M., "Numerical Simulation of Natural Convection-Dominated Melting from a Finned Vertical Wall", CFD95 Third Annual Conference of the CFD Society of Canada, Banff, Alberta, Canada, June 25-27, 1995, vol. 2, pp. 15-22, organized by the CFD Society of Canada.
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- C60. Lacroix, M., "Numerical Simulation of Conjugate Heat Transfer during the Melting of a PCM", Thirteenth IASTED International Conference on Modelling, Identification and Control, Grindelwald, Switzerland, February 21-23 1994, pp. 450-452, organized by the International Association of Science and Technology for Development - IASTED.
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- C70. Lacroix, M., "Simulation of Natural Convection melting of a Pure Metal from Below", 1st International Conference on Computational Modelling of Free and Moving Boundary Problems, Southampton, UK, July 2-4, 1991, pp. 121-131, organized by the Computational Mechanics Institute, Southampton, UK.
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- C76. Lacroix, M., "Analysis of Natural-Convection-Dominated Melting Heat Transfer inside an Inclined Rectangular Enclosure", 5th International Symposium on Numerical Methods in Engineering, Lausanne, Switzerland, September 1989, abstracts, pp. 699-704, organized by the Computational Mechanics Institute, Southampton, UK.
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- C81. Lacroix, M., Camarero, R., Tapucu, A., "A Third-Order Upwind Scheme for Turbulent Thermohydraulic Flows", 2nd International Conference on Numerical Methods for Non Linear Problems, April 9-13, 1984, Barcelona, Spain.
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- C83. Lacroix, M., "L'énergie nucléaire - Ses avantages et son fonctionnement", Mario Explore, Podcast, Novembre 2023, <https://www.youtube.com/watch?v=ynWmhXrlmgk>
- C84. Lacroix, M., "Transition to Renewable Energies: A Reality Check", Invited speaker, 18th International Conference on Renewable Energies and Power Quality (ICREPQ'20), Granada, Spain, April 1st-3, 2020.
- C85. Lacroix, M., " Au-delà du nucléaire", Conférencier invité, Rencontre scientifique intrafacultaire : Les débats scientifiques dans la société, Université de Sherbrooke, Canada, 14 septembre 2017.
- C86. Lacroix, M., " Qu'attend-on de la transition vers les énergies renouvelables ?", Conférencier invité, Forum Environnement et Développement Durable en Estrie, Sherbrooke, Canada, 20 juin au 22 juin 2017.
- C87. Lacroix, M., " Prédiction du front de congélation par transfert de chaleur inverse : application à la cryothérapie", Conférencier invité, 25^{ème} Congrès de la Société Française de Thermique, Marseille, France, 30 mai au 2 juin 2017.
- C88. Lacroix, M., "Can renewable energy meet the energy needs of the present world?", Invited speaker, École Centrale Marseille, 19 October 2016, Marseille, France.
- C89. Lacroix, M., "Transition to renewable energy sources: A reality check", Keynote speaker, 5th International Conference and Exhibition on Clean Energy, Montréal, August 22-24, 2016, Canada.
- C90. Lacroix, M., "Energy, Health and Wealth ", Invited speaker, International Conference on Materials & Energy, La Rochelle, May 17-20, 2016, France.
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- C92. Lacroix, M., "Les obstacles à la transition aux énergies renouvelables ", Conférencier invité, International Conference on Materials & Energy, ICOME 15, 17-22 May 2015, Tétouan, Morocco.
- C93. Lacroix, M., "Réacteurs nucléaires et radio-isotopes : Quel avenir? ", Conférencier invité, Hôpital Maisonneuve Rosemont, Semaine de l'imagerie médicale, 4 novembre 2013, Montréal, Canada.
- C94. Lacroix, M., "Qu'attendons-nous au juste des énergies renouvelables? ", Conférencier invité, Université Laval, 18 juin 2013, Québec, Canada.
- C95. Lacroix, M., "La transition aux énergies renouvelables sera-t-elle possible? ", Conférencier invité, Université de Lorraine, 16 mai 2013, Metz, France.
- C96. Lacroix, M., "L'énergie au quotidien ", Conférencier invité, Université de Lorraine, 14 mai 2013, Metz, France.

- C97. Lacroix, M., "La production électronucléaire : Pourquoi et comment ", Conférencier invité, Université de Sherbrooke, 28 septembre 2012, Sherbrooke, Canada.
- C98. Lacroix, M., "La transition aux énergies renouvelables : Rêves, réalité et défis ", Conférencier invité, Université de Sherbrooke, 7 septembre 2012, Sherbrooke, Canada.
- C99. Lacroix, M., "Les difficultés de la transition aux énergies renouvelables au Québec ", Conférencier invité, Congrès régional du Conseil de Recherche du Canada, 23-24 mai 2012, Sherbrooke, Canada.
- C100. Lacroix, M., "Réacteurs nucléaires et production de radio-isotopes ", Conférencier invité, XXXI^{ème} colloque de l'Association des médecins en médecine nucléaire du Québec, 18-20 mai 2012, Rimouski, Canada.
- C101. Lacroix, M., "Et si les énergies renouvelables n'étaient pas ce que l'on croit ", Conférencier invité, Institut Français du Pétrole, 24 avril 2012, Paris, France.
- C102. Lacroix, M., "Energy, Health and Wealth ", Conférencier invité, IFP-Engineering School, 23 avril 2012, Paris, France.
- C103. Lacroix, M., "Radio-isotopes et applications ", Conférencier invité, École Centrale Marseille, 20 avril 2012, Marseille, France.
- C104. Lacroix, M., "Le corps humain : une machine thermique efficace? ", Conférencier invité, Lycée Turgot, 4 avril 2012, Limoges, France.
- C105. Lacroix, M., "Les défis de la transition aux énergies renouvelables : mythes et réalité ", Conférencier invité, Centre Européen de la Céramique, Université de Limoges, 4 avril 2012, Limoges, France.
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