

**Modéliser et optimiser le processus de purification du silicium photovoltaïque
par solidification dirigée**

17MAG23

PUBLICATIONS ET CONFERENCES

1. Revues internationales référencées

- [1] Medelfef, A., Henry, D., Bouabdallah, A., Kaddeche, S., Boussaa, R. 2017. Effect of rotation on the stability of side-heated buoyant convection between infinite horizontal walls. *Phys. Rev. Fluids* 2, 093902, 1-29.
- [2] Cambonie, T., Moudjed, B., Botton, V., Henry, D., Ben Hadid, H. 2017. From flying wheel to square flow: Dynamics of a flow driven by acoustic forcing. *Phys. Rev. Fluids* 2, 123901, 1-21. (Oubli de référence au PHC Maghreb).
- [3] Medelfef, A., Henry, D., Bouabdallah, A., Kaddeche, S. 2019. Bifurcations from steady to quasi-periodic flows in a laterally heated cavity filled with low Prandtl number fluids. *J. Fluid Mech.* 861, 223-252.
- [4] Launay, G., Cambonie, T., Henry, D., Pothérat, A., Botton, V. 2019. Transition to chaos in an acoustically driven cavity flow. *Phys. Rev. Fluids* 4, 044401, 1-23.
- [5] Hamzaoui, I., Benzaoui, A., Henry, D., Zaidat, K., Hachani, L., Boussaa, R., Millet, S., Botton, V., Fautrelle, Y. 2019. A 2D1/2 model for natural convection and solidification in a narrow enclosure. *Int. J. Thermal Sciences* 140, 167–183.
- [6] Bouarab, S., Mokhtari, F., Kaddeche, S., Henry, D., Botton, V., Medelfef, A. 2019. Theoretical and numerical study on high frequency vibrational convection: influence of the vibration direction on the flow structure. *Phys. Fluids* 31, 043605, 1-10.
- [7] Bouarab, S., Mokhtari, F., Kaddeche, S., Henry, D., Botton, V., Medelfef, A. 2020. Effect of high frequency vibrations on PV silicon purification. *Journal of Crystal Growth* 529, 125298, 1-12.
- [8]. Benhamou, J., Jami, M., Mezrhab, A., Botton, V., Henry, D. 2020. Numerical study of natural convection and acoustic waves using the lattice Boltzmann method. *Heat Transfer* 49, 3779–3796.

[9]. Mokhtari, F., Kaddeche, S., Henry, D., Bouarab, S., Medelfef, A., Botton, V. 2020. Three-dimensional effect of high frequency vibration on convection in silicon melt. *Phys. Rev. Fluids* 5, 123501, 1-23.

[10]. El Ghani, N., Miralles, S., Botton, V., Henry, D., Ben Hadid, H., Ter-Ovanessian, B., Marcelin, S. 2021. Acoustic streaming enhanced mass transfer at a wall. *Int. J. Heat Mass Transfer* 172, 121090, 1-11.

[11]. Benhamou, J., Channouf, S., Jami, M., Mezrhab, A., Henry, D., Botton, V. 2021. Three-dimensional lattice Boltzmann model for acoustic waves emitted by a source. *International Journal of Computational Fluid Dynamics* 35, 850-871.

[12]. Benhamou, J., Jami, M., Mezrhab, A., Henry, D., Botton, V. 2023. Numerical simulation study of acoustic waves propagation and streaming using MRT-lattice Boltzmann method. *International Journal for Computational Methods in Engineering Science and Mechanics* 24, 62-75.

[13]. Medelfef, A., Henry, D., Kaddeche, S., Mokhtari, F., Bouarab, S., Botton, V., Bouabdallah, A. 2023. Linear stability of natural convection in a differentially heated shallow cavity submitted to high-frequency horizontal vibrations. *Phys. Fluids* 35, 084107, 1-20.

[14]. Benhamou, J., Vincent, B., Miralles, S., Jami, M., Henry, D., Mezrhab, A., Botton, V. 2023. Application of the lattice Boltzmann method to the study of ultrasound propagation and acoustic streaming in three-dimensional cavities : advantages and limitations. *Theoretical and Computational Fluid Dynamics* 37, 725-753.

2. Conférences internationales sans actes

[11] Launay, G., Cambonie, T., Henry, D., Potherat, A., Botton, V. 2017. Transition to chaos in an acoustic stirring cavity flow. 70th annual meeting of the APS Division of Fluid Dynamics, Denver, USA (November 19-21).

[12] Botton, V., Cambonie, T., Moudjed, B., Miralles, S., Henry, D., Ben Hadid, H. 2017. How to drive a square flow in a liquid: acoustic stirring. VII International Conference on Coupled Problems in Science and Engineering, Rhodes Island, Greece (June 12-14).

- [13] Medelfef, A., Henry, D., Bouabdallah, A., Kaddeche, S. 2018. Bifurcation analysis of laterally heated buoyant convection in low-Prandtl number fluids. 12th European Fluid Mechanics Conference (EFMC12), Vienna, Autriche (September 9-13).
- [14] El Ghani, N., Miralles, S., Botton, V., Ter-Ovanesian, B., Marcelin, S., Henry, D. 2018. Experimental modeling of mass transfer phenomena by electrochemical methods in the presence of acoustic streaming. 12th European Fluid Mechanics Conference (EFMC12), Vienna, Autriche (September 9-13).
- [15] Hamzaoui, I., Botton, V., Henry, D., Millet, S., Benzaoui, A. 2018. A 2D1/2 model for solid-liquid phase change simulations. 12th European Fluid Mechanics Conference (EFMC12), Vienna, Autriche (September 9-13).
- [16] Launay, G., Cambonie, T., Henry, D., Pothérat, A., Botton, V., Miralles, S., Ben Hadid, H. 2019. On the dynamics of an acoustically-driven cavity flow. 8th International Symposium on Bifurcations and Instabilities in Fluid Dynamics (BIFD 2019), Limerick, Ireland (July 16-19).

3. Revues nationales

4. Conférences et manifestations nationales

- [17] Medelfef, A., Henry, D., Bouabdallah, A., Boussaa, R., Kaddeche, S., Botton, V. 2017. A three dimensional numerical study of rotating buoyant convection in a side heated cavity. 23ème Congrès Français de Mécanique, Lille, France (28 août-1 septembre).
- [18] Hamzaoui, I., Boussaa, R., Botton, V., Henry, D., Millet, S., Benzaoui, A., Bouabdallah, A., Ben Hadid, H. 2017. Convection naturelle dans une cavité confinée : une modélisation 2D1/2. 23ème Congrès Français de Mécanique, Lille, France (28 août-1 septembre).
- [19] Bouarab, S., Mokhtari, F., Kaddeche, S., Hamrani, A., Merah, A., Haddad, F. 2017. Résolution d'un problème de convection naturelle en 2D et 3D par la méthode spectrale. 23ème Congrès Français de Mécanique, Lille, France (28 août-1 septembre).
- [20] Haddad, F., Mokhtari, F., Kaddeche, S. 2017. Etude de l'instabilité thermo-convective dans un bain HEM du saphir avec et sans rayonnement interne. 23ème Congrès Français de Mécanique, Lille, France (28 août-1 septembre).
- [21] El Ghani, N., Botton, V., Miralles, S., Allouche, M.H., Marcelin, S., TerOvanesian, B., Henry, D. 2017. Modélisation expérimentale du transfert de masse en croissance cristalline par des méthodes électrochimiques en présence d'ultrasons. 13ème Congrès de Mécanique, Meknès, Maroc (11-14 avril).

- [22] Medelfef, A., Henry, D., Bouabdallah, A., Kaddeche, S., Boussaa, R. 2017. Stabilité de la convection naturelle due à un gradient de température horizontal dans un fluide en rotation uniforme. 13ème Congrès de Mécanique, Meknès, Maroc (11-14 avril).
- [23] Cambonie, T., Henry, D., Botton, V., Moudjed, B., Ben Hadid, H. 2017. Generation of a square flow by acoustic streaming. 13ème Congrès de Mécanique, Meknès, Maroc (11-14 avril).
- [24] Hamzaoui, I., Millet, S., Botton, V., Henry, D., Benzaoui, A. 2019. Modèles 2D1/2 pour le changement de phase solide-liquide. 14ème Congrès de Mécanique, Rabat, Maroc (16-19 avril).
- [25] Benhamou, J., Mezrhab, A., Botton, V., Jami, M. 2019. Effect of thermal convection on the propagation of acoustic waves using lattice Boltzmann simulations. 14ème Congrès de Mécanique, Rabat, Maroc (16-19 avril).
- [26] Botton, V., Cambonie, T., Henry, D., Miralles, S., Moudjed, B., Ben Hadid, H. 2019. Generation of a square flow by acoustic streaming. 14ème Congrès de Mécanique, Rabat, Maroc (16-19 avril).
- [27] Channouf, S., Benhamou, J., Jami, M., Mezrhab, A., Botton, V., Henry, D. 2019. Heat transfer effect on the non-wetting liquid drop by using the Shan-Chen LBM model. 24ème Congrès Français de Mécanique, Brest, France (26-30 août).