

# Hamza ICHOU, Doctor in nano-physics and nano-measurement.

✉ Ichou.hamzaqm@gmail.com

📍 47 rue Henri Dunant, 51170 FISMES

☎ +33 625524751

## Education

---

- 2018 – 2022 **PhD at the " University of Toulouse III".** Option : Nano-physics, Nano-component, and nano-measurements.  
Thesis title: *Towards nano-electrodes on wide gap semiconductors: Graphene on SiC, Silicene on Graphene, and Au/AlN/SiC*
- 2017 – 2018 **PreDoc. University of Sherbrooke - Canada**  
Subject title: *Development of an AlGaN-based HEMT transistor: Etching and nanofabrication.*
- 2016 – 2017 **Master 2 (ranking : 2/14) . Faculty of technical sciences Le Mans, France.**  
Master : *Physics of nanomaterials (PNANO).*
- 2015 – 2016 **Master 1 (ranking 1/40: 15.94/20) . Faculty of Sciences Dhar El Mehraz, Fez.**  
Master : *Physics of new nanomaterials and renewable energies (PNOMER).*
- 2014 – 2015 **Master 1 (12.13/20) . Faculty of Sciences, Rabat.**  
Master 1 : *Advances in quantum physics: Application to information theory (APQ).*
- 2013 – 2014 **Bachelor (ranking : 16/20). Faculty of Sciences Dhar El Mehraz, Fez.**  
Speciality : *Physique des matériaux..*
- 2011 – 2013 **DEUG (ranking : 15.89/20). Faculty of Sciences Dhar El Mehraz, Fez.**  
Speciality : *Physical and chemical matter sciences.*
- 2011 **Experimental science baccalaureate.(12/20)**  
Speciality : *Sciences PC.*
- 2009 – 2011 **DUT, Technology High School (12/20) in Fez.**  
Option : *Thermal and energy engineering GTE.*
- 2009 **Experimental science baccalaureate.(14/20)**  
Speciality: *Sciences de la vie et la terre (SVT).*







## Scientific skills

---

- 2018 – 2022 **Molecular Beam epitaxy (MBE) for AlN technology.**
- Non-contact Atomic force microscopy (nc-AFM).**
- 2017 – 2018 **Dry Etching under plasma for microfabrication of HEMT transistors.**
- 2016 – 2017 **Microfabrication techniques in clean room : Photolithography, Spin Coater.**

## Internships and professional experiences

---

- 2019 – 2023  **Online teaching experience:** Be in Sciences.
- Online Lectures on physics (Quantum mechanics, statistical physics, classical mechanics, thermodynamics & fluid mechanics). Level: L1 L2 L3.
  - Online Lectures on mathematics (Calculus and integrals, Differential equations, real numbers). Level L1.
  - Team management.
  - Site web : <https://beinsciences.org/>
- 2020 – 2023  **Web Developer & content creator:** Website development and content creation of several educational websites among them:
- [www.beinbac.com](http://www.beinbac.com)
  - [www.encg-maroc.com](http://www.encg-maroc.com)
  - [www.beinsciences.org](http://www.beinsciences.org)
- 2016 – 2017  Internship Master 2 **CINAM** in Marseille, France.
- Subject: Epitaxial growth by molecular beams of Mn<sub>5</sub>Ge<sub>3</sub> on Germanium substrates: Applications in spintronics.
- 2014 – 2015  Teacher at a private high school in Fez, Morocco.
- Support course in physics. Baccalaureate standard.
  - 6 Hours/Week.
- 2010 – 2011  Stage DUT **TEPHSOL** in Fez, Morocco.
- 4 months.
  - Sizing of photovoltaic cells and solar pumps.
- 2009 – 2010  Internship **LASAMIR** in Sidi Kacem, Morocco.
- Subject "Energy study of fuel storage".
  - 1 mois.

## Scientific Production

---

### Posters and oral communications c

- 1 **Hamza Ichou**, Alchaar, M., Dujardin, E., Joachim, C., & Martrou, D. (Eds.). (2021a). *Journées gdr - mbe growth and coupled nc-afm/kpfm : Characterization of 2d materials under uhv environment : Graphene and silicene*. Toulouse, France.
- 2 **Hamza Ichou** & Martrou, D. (2020). *Mbe growth and nc-afm/kpfm characterization of 2d materials under uhv environment: Graphene and silicene*. Nanotech, Paris.

## Books(in progress)

- 1 Ichou, H., Khalfaoui, Y. E., & Arrousse, N. (2023). *Recueil d'exercices en mécanique du point*. en ligne.
- 2 Khalfaoui, Y. E., Ichou, H., & Arrousse, N. (2023). *Recueil d'exercices en mécanique du solide*. en ligne.

## Published Articles

- 1 Al-Zaqri, N., Karamia, A., **Hamza Ichou**, Arrousse, N., & Warad, I. (2023). Economical way to protect mild steel in acidic medium: Combined experimental and theoretical studies. *Surface Engineering and Applied Electrochemistry*, 59(3).
- 2 Arrousse, N., Dioukhane, K., Haldhar, R., Salim, R., hachmia Ech-chihbi, E., Ichou, H., Alami, A., Kim, S.-C., Gaye, M. L., & Taleb, M. (2023). Electrochemical, theoretical, and surface adsorption studies of tetrazoles analogues of amino acids in acidic media. *Materials Today Communications*, 34, 105265. <https://doi.org/https://doi.org/10.1016/j.mtcomm.2022.105265>
- 3 Arrousse, N., Fernine, Y., Haldhar, R., Elyor Berdimurodov, a. H. I., Al-Zaqri, N., Koudad, M., & Seong-Cheol Kim, a. M. T. (2023). Corrosion protection studies of different alloys in 1m hcl by benzimidazole derivative: Combined molecular dynamic simulations/dft, *Journal of Environmental Chemical Engineering*, 11, 109642. <https://doi.org/https://doi.org/10.1016/j.rechem.2023.100996>.
- 4 Nadia, A., Khadim, D., Rajesh, H., Rajae, S., **Hamza Ichou**, Anouar, A., Seong-Cheol, K., Lamine, G. M., Mustapha, T., et al. (2023). Electrochemical, theoretical, and surface adsorption studies of tetrazoles analogues of amino acids in acidic media. *Materials Today Communications*, 43, 105265.
- 5 Okeke Pamela I., H. I. e. a., Nleonu Emmanuel C. (2023). Chrysophyllum albidum extract as a new and green protective agent for metal, *Research Square*. <https://doi.org/10.21203/rs.3.rs-3302642/v1>
- 6 Soukaina, E., Al-Zaqri, N., Warad, I., **Hamza Ichou**, Yassine, K., Guenoun, F., & Bouachrine, M. (2023). Novel antiproliferative inhibitors from salicylamide derivatives with dipeptide moieties using 3d-qsar, molecular docking, molecular dynamic simulation and admet studies. *Journal of Molecular Structure*, 1282, 135219. <https://doi.org/https://doi.org/10.1016/j.molstruc.2023.135219>
- 7 **Hamza Ichou**, Arrousse, N., & Berdimurodov, E. (2023a). Exploring the advancements in physical vapor deposition coating: A review. *Coating*.
- 8 **Hamza Ichou**, Mohanad, A., Bulent, B., Adrien, M., Roy, D., Erik, D., & David, M. (2023b). Structural identification of graphene films and nanoislands on 6h-sic (0001) by direct height measurement. *Nanotechnology*, 34(16). <https://doi.org/10.1088/1361-6528/acb2d0>
- 9 Emmanuel, C. N., Rajesh, H., Kelechi, G. U., Christopher, C. O., Anderson, U. E., Pamela, I. O., Oke, O. M., **Hamza Ichou**, Nadia, A., Seong-Cheol, K., et al. (2022). Theoretical study and adsorption behavior of urea on mild steel in automotive gas oil (ago) medium. *Lubricants*, 10(7), 157. <https://doi.org/https://doi.org/10.3390/lubricants10070157>
- 10 **Hamza Ichou**, Alchaar, M., Dujardin, E., Joachim, C., & Martrou, D. (2021b). Mbe growth and coupled nc-afm/kpfm characterization of 2d materials under uhv environment : Graphene and silicene.
- 11 Asmae, B., Rajesh, H., Rajae, S., Elhachmia, E.-c., **Hamza Ichou**, Fadoua, E.-H., Seong-Cheol, K., El Ibrahimy, B., Savas, K., & Mustapha, T. (2015). An effective and smart corrosion inhibitor in acidic environment: Experimental & theoretical studies. *Korean Journal of Chemical Engineering*, 40(1). <https://doi.org/https://doi.org/10.1007/s11814-022-1246-5>

## Summer school

- 1 Agay, France. (2019). Ecole d'été ganex.

## SKILLS

---

- Langues
- Arabic: Mother Tongue
  - French: Level C1
  - English: Level B2 (TOEIC Certificate)
  - Spanish: Level B1
- Graphisme
- Adobe illustrator, Adobe Photoshop
- Codage
- C,  $\LaTeX$
- Web Dev
- HTML, CSS, Wordpress.
- Other Skills
- Word, Excel, Powerpoint, Mendeley, Zootero

## HONORS and AWARD

---

### Awards and achievements

- 2016
- Award of excellence USMBA 2016**, Master PNOMER.

### Organization and Participation of scientific conference

- 2023
- Organization certificate.** Scientific day at the Faculty of Dhar El Mehraz.

### Organization and Participation of a scientific event

- 2021
- Participation certificate.** Nano-Race in Toulouse, 2nd Edition.