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| <b>TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO</b>  | <b>ID CODE: 5954</b> |
| I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at <b>Dipartimento di Department of Physics Aldo Pontremoli</b> |                      |
| Scientist- in - charge: Prof. Guerra  |                      |

[Name and surname]

**CURRICULUM VITAE**

**PERSONAL INFORMATION**

|         |            |
|---------|------------|
| Surname | Nassima    |
| Name    | Benchtaber |

**PRESENT OCCUPATION**

|                         |                 |
|-------------------------|-----------------|
| Appointment             | Structure       |
| PhD/ Research assistant | IFISC INSTITUTE |

**EDUCATION AND TRAINING**

| Degree                            | Course of studies                                      | University                         | year of achievement of the degree |
|-----------------------------------|--|------------------------------------|-----------------------------------|
| Degree                            | Bachelor (licence) in Physics                          | IBN ZOHR University (Morocco)      | 2013                              |
| Specialization (Internship)       | Research assistant                                     | IBN ZOHR University (Morocco)      | 2019                              |
| PhD                               | Physics (Quantum transport at the nanoscale)           | Balearic Island University (Spain) | 2023                              |
| Master                            | Material sciences engineering, energy and environment. | IBN ZOHR University (Morocco)      | 2016                              |
| Degree of medical specialization  | -----  | -----                              | -----                             |
| Degree of European specialization | PHD  | Balearic Island University (Spain) | 2023                              |
| Other                             |  |                                    |                                   |

## REGISTRATION IN PROFESSIONAL ASSOCIATIONS

| Date of registration | Association  | City                    |
|----------------------|--|-------------------------|
| 1/09/2019            | Institute for Cross-Disciplinary Physics and Complex Systems | Palma de mallorca Spain |

## FOREIGN LANGUAGES

| Languages | level of knowledge |
|-----------|--------------------|
| English   | Very good          |
| French    | very good          |
| Spanish   | beginner           |
| chinese   | beginner           |

## AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

| Year               | Description of award   |
|--------------------|--|
| 1/2019 to 02/2023  | Predocctoral fellowship from Spanish governement and agence of scientific research |
| 02/2023 to 08/2023 | Postdoctoral fellowship from Spanish governement and agence of scientific research |
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## TRAINING OR RESEARCH ACTIVITY

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| Research stay at Optical engineering unit in shenzhen University ( China). Studing the DFT calculation of electron-phonon interactions in 2D materials |
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## PROJECT ACTIVITY

| Year      | Project  |
|-----------|--|
| 2021-2023 | TRANSPORTE CUANTICO Y TERMODINAMICA: NUEVAS AVENIDAS EN MATERIALES CUANTICOS |
| 2019-2021 | Transport in Quantum Materials at the Nanoscale                              |

## PATENTS

| Patent |
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## CONGRESSES AND SEMINARS

| Date | Title                                  | Place                        |
|------|--|------------------------------|
| 2023 | Graphene study 2023, graphene flagship | Obergurgl, Innsbruck Austria |

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| 2022 | NanoSpain conference "NanoSpain 2022"  | Madrid, Spain  |
| 2022 | Topological Materials: From Weak to Strong Correlations workshop   | Max Planck Institute for the Physics of Complex Systems, Dresden Germany |
| 2021 | The 11 th edition of Graphene Conference series, the largest European Event in Graphene and 2D Materials,"Graphene 2021" | Grenoble, France   |
| 2021 | Thermodynamics of quantum systems and processes school   | Como, Italy  |
| 2019 | The international winter school NLP 2019<br>10th Optoelectronics and Photonics Winter School NLP2019 Nonlinear Photonics | Andalo Italy   |
| 2018 | XXV International Summer School 'Nicolas Cabrera' Manipulating Light and Matter at the Nanoscale                         | Miraflores de la sierra Madrid Spain.                                    |

## PUBLICATIONS

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| Books                                      |
| [title, place, publishing house, year ...] |
| [title, place, publishing house, year ...] |
| [title, place, publishing house, year ...] |

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| Articles in reviews   |
| Nassima Benchtaber, David Sanchez, Llorenc , Serra. Trivial and topological bound states in bilayer ´ graphene quantum dots and ring, Physica Status Solidi B, April 2022.<br>Doi: <a href="https://doi.org/10.1002/pssb.202200023">https://doi.org/10.1002/pssb.202200023</a> .        |
| Nassima Benchtaber, David Sanchez, Llorenc , Serra. Geometry effects in topologically confined bilayer ´ graphene loops, New Journal of Physics, vol 24, 013001 (1-11) (2021).<br>DOI: 10.1088/1367-2630/ac434d.  |
| Nassima Benchtaber, David Sanchez, Llorenc , Serra. Scattering of topological kink-antikink states in ´ bilayer graphene, Physical Review B, vol 104, 155303 (1-9) (2021).<br>DOI: 10.1103/PhysRevB.104.155303  |
| Merieme Benaadad; Abdelhakim Nafidi; Samir Melkoud; Driss Barkissy; Nassima Benchtaber. Quan tum magneto transport properties of nanostructure multi quantum wells short wave Infrared detec tors. Journal of Physics: Conference Series (2021)<br>Doi: 10.1088/1742-6596/1743/1/012009 |
| Nassima Benchtaber, David Sanchez, Llorenc , Serra. Scattering of topological kink-antikink states in ´ bilayer graphene, Physical Review B, vol 104, 155303 (1-9) (2021).<br>DOI: 10.1103/PhysRevB.104.155303  |
| Nassima Benchtaber; Abdelhakim Nafidi; Driss Barkissy et al, Abderrazak Boutramineet al, Theoretical electronic band structures and transport in InAs/GaSb type II nanostructure superlattice for medium  |

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| infrared detection. J.Materials Today: Proceedings. Elsevier, 2019.<br>DOI:https://doi.org/10.1016/j.matpr.2019.08.069  |
| Nassima Benchtaber; Abdelhakim Nafidi; Samir Melkoud et al, Manifestation of electronic transport transitions in nanostructure HgTe/CdTe type III superlattice for terahertz detection. IEEE journal, 2019<br>DOI: 10.1109/ICCSRE.2019.8807707  |
| Barkissy, D.; Nafidi; A.Email Author; Boutramine, A.; Benchtaber, Electronic transport and band structures of GaAs/AlAs nanostructures superlattices for near-infrared detection. J.Applied Physics A Materials Science Processing 2017.<br>DOI: 10.1007/s00339-016-0629-z  |
| Driss Barkissy; Abdelhakim Nafidi; Abderrazak Boutramine; Nassima Benchtaber, Investigation in band structures of GaAs/Al <sub>x</sub> Ga <sub>1-x</sub> As nanostructures superlattices at high magnetic field and low temperatures. J. Applied Physics A-Materials Science Processing 2016.<br>DOI: 10.1007/s00339-016-0688-1 |

|                                 |
|---------------------------------|
| Congress proceedings            |
| [title, structure, place, year] |
| [title, structure, place, year] |
| [title, structure, place, year] |

OTHER INFORMATION

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Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

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Place and date: Morocco\_, \_09/11/2023