| Date | 09/05/2023 |
|---|---|

**Personal Data**

| | | | |
|---|---|---|---|
| Name | Yahya Moubarak MEZIANI | | |
| Passport | X9911368R | Edad | 48 |
| Researcher identification | Researcher ID | F-6376-2010 | |
| | ORCID code | 0000-0001-5193-7993 | |

**Actual Professional position**

| | | | |
|---|---|---|---|
| Entity | Salamanca University | | |
| Dept./Center | Science Faculty, Dept. of Applied Physics | | |
| Address | Plaza de la Merced s/n | | |
| Phone | +34 677 565 451 | Email: | meziani@usal.es |
| Position | Associate Professor | Started on | 07/6/2013 |
| Espec. cód. UNESCO | 2203 | | |
| Keywords | Nanotechnology, semiconductor devices, Terahertz, plasma waves, Terahertz spectroscopy, Quantum Hall effect, Magnetoresistance. Metrology, 2d materials, Graphene, h-BN | | |

**A.2. Formation**

| Licenciatura/Grado/Doctorado | University | Año |
|---|---|---|
| MS. | Mohammed I University, Morroco | 1997 |
| Ph.D | Montpellier 2 University, France | 2001 |

**A.3. Impact factor of publications:**

**Yahya Moubarak Meziani**

WOS citation report, May 2023

| 20 H-index | Publications | Times Cited | | |
|---|---|---|---|---|
| | 109 Total | 2159 Total | 1934 Without self-citations | 19.82 Average per item |

**Description**

Yahya Meziani is currently an associate professor at the department of applied physics, Salamanca University. From 2006 till 2008, he was assistant professor with the Research Institute of Electrical Communication (RIEC), Tohoku University, Japan. From March. 2005 till Feb. 2006, he was a JSPS (Japanese Society for the Promotion of Science) research fellow at RIEC, Tohoku University, Japan. From July 2001 till Mar. 2005 he was working as a research scientist at Groupe d'Etude des Semiconducteurs (GES), Montpellier 2 University, France.
Dr. Meziani has been conducting research on Quantum Hall effect phenomenon and its application for the conservation of the Ohm unit. He developed with STMicroelectronics a new method for characterization of the new generation of sub-micron silicon transistors. He is involved in the development of new electronic devices that can emit and/or detect terahertz radiation at room temperature. He has been supervising about 30 M.S. students at Tohoku University, Montpellier 2 University, and Salamanca University. He is author and co-author of more than 70 scientific publications and participates in more than 100 international conference as speaker and invited speaker. He was member of IEICE-Japan and society of physics-France.

**Most relevant works**

**C.1. Publications**


[1] J. Calvo-Gallego, J. A. Delgado-Notario, O. V. Minin, El Hadj Abidi, M. Ferrando-Bataller, K. Fobelets, J. E. Velázquez-Pérez, I. V. Minin and **Y. M. Meziani** 'Resolution Enhancement of Terahertz Imaging Systems Below the Diffraction Limit by Using the Terajet Effect' Optics & Laser Technology,164,109540,2023, https://doi.org/10.1016/j.optlastec.2023.109540.

[2] J.A. Delgado-Notario, W. Knap, V. Clericò, J. Salvador-Sánchez, J. Calvo-Gallego, T. Taniguchi, K. Watanabe, T. Otsuji, V. V. Popov, D. V. Fateev, E. Diez, J.E. Velázquez-

Pérez, and **Y.M. Meziani**, 'Enhanced terahertz detection of multigate graphene nanostructures' Nanophotonics 11, 519 (2022).

[3] A. Rehman, J.A.D. Notario, J.S. Sanchez, **Y.M. Meziani**, G. Cywiński, W. Knap, A.A. Balandin, M. Levinshtein, and S. Rumyantsev, 'Nature of the 1/f Noise in Graphene, Direct Evidence for the Mobility Fluctuations Mechanism' Nanoscale 14, 7242 (2022).

[4] I.V. Minin, J. Calvo-Gallego, J.E. Velázquez-Pérez, J. Salvador-Sánchez, J.A. Delgado-Notario, K. Fobelets, M. Ferrando-Bataller, O.V. Minin, and **Y.M. Meziani** 'Responsivity enhancement of a strained silicon field-effect transistor detector at 0.3 THz using the terajet effect' Opt. Lett. 46, 3061 (2021).

[5] M. Lapuerta, J. Rodríguez-Fernández, R. Patiño-Camino, A. Cova-Bonillo, E. Monedero, and **Y. M. Meziani**, "Determination of optical and dielectric properties of blends of alcohol with diesel and biodiesel fuels from terahertz spectroscopy," *Fuel*, vol. 274, p. 117877, Aug. 2020.

[6] I. V. Minin, O. V. Minin, J. A. Delgado-Notario, J. Calvo-Gallego, J. E. Velázquez-Pérez, M. Ferrando-Bataller, and **Y. M. Meziani**, "Improvement of a Terahertz Detector Performance Using the Terajet Effect in a Mesoscale Dielectric Cube: Proof of Concept," Phys. Status Solidi - Rapid Res. Lett., 2020, 1900700, doi: 10.1002/pssr.201900700.

[7] J. A. Delgado Notario, V. Clericò, E. Diez, J. E. Velázquez-Pérez, T. Taniguchi, K. Watanabe, T. Otsuji, and **Y. M. Meziani**, "Asymmetric dual-grating gates graphene FET for detection of terahertz radiations," APL Photonics, vol. 5, no. 6, p. 066102, Jun. 2020.

[8] V. Clericò, J. A. Delgado Notario, M. Saiz-Bretín, A. V. Malyshev, **Y. M. Meziani**, P. Hidalgo, B. Méndez, M. Amado, F. Domínguez-Adame, and E. Diez, "Quantum nanoconstrictions fabricated by cryo-etching in encapsulated graphene," *Sci Rep*, vol. 9, no. 1, pp. 13572–7, Sep. 2019. doi: 10.1038/s41598-019-50098-z.

[9] J. A. Delgado-Notario, J. E. Velazquez-Perez, **Y. M. Meziani**, and K. Fobelets, "Sub-THz imaging using non-resonant HEMT detectors," *Sensors (Switzerland)*, vol. 18, no. 2, p. 543, 2018, doi: 10.3390/s18020543.

[10] Y. Kurita, G. Ducoumau, D. Coquillat, A. Satou, K. Kobayashi, S. B. Tombet, **Y. M. Meziani**, V. V. Popov, W. Knap, T. Suemitsu, and T. Otsuji, "Ultrahigh sensitive sub-Terahertz detection by InP-based asymmetric dual-grating-gate high-electron-mobility transistors and their broadband characteristics," *Appl. Phys. Lett.*, vol. 104, no. 25, pp. 251114–5, Jun. 2014, doi: 10.1063/1.4885499.

[11] **Y.M. Meziani**, E. Garcia-Garcia, J.E. Velazquez-Pereza, D. Coquillat, N. Dyakonov, W. Knap, I. Grigelionis, K. Fobelets Terahertz Imaging Using Strained-Si MODFETs as Sensors Solid-State Electronics, vol. 83, pp 113-117 (2013)

[12] T. Watanabe, S. B. Tombet, Y. Tanimoto, Y. Wang, H. Minamide, H. Ito, D. Fateev, V. Popov, D. Coquillat, W. Knap, **Y. Meziani**, and T. Otsuji. Ultrahigh sensitive plasmonic terahertz detector based on an asymmetric dual-grating gate HEMT structure Solid-State Electronics, vol. 78, no. C, pp. 109–114, 2012.

[13] C. Drexler, N. Dyakonova, P. Olbrich, J. Karch, M. Schafberger, K. Karpierz, Y. Mityagin, M. B. Lifshits, F. Teppe, O. Klimenko, **Y. M. Meziani**, W. Knap, and S. D. Ganichev, "Helicity sensitive terahertz radiation detection by field effect transistors," J. Appl. Phys., vol. 111, no. 12, p. 124504, 2012.

[14] V. V. Popov, D. V. FATEEV, T. Otsuji, **Y. M. Meziani**, D. Coquillat, and W. Knap Plasmonic terahertz detection by a double-grating-gate field-effect transistor structure with an asymmetric unit cell Appl. Phys. Lett., 99, no. 24, 243504 (2011).

[15] **Y. M. Meziani**, E. Garcia, E. Velazquez, E. Diez, A. El Moutaouakil, T. Otsuji and K. Fobelets Strained silicon modulation field-effect transistor as a new sensor of terahertz radiation, Semicond. Sci. Technol. 26, 105006 (4pp) (2011).

[16] W. Knap, S. Nadar, H. Videlier, S. Boubanga-Tombet, D. Coquillat, N. Dyakonova, F. Teppe, K. Karpierz, J. Łusakowski, M. Sakowicz, I. Kasalynas, D. Seliuta, G. Valusis, T. Otsuji, **Y.M. Meziani**, A. El Fatimy, S. Vandenbrouk, K. Madjour, D. Théron, and C. Gaquière. Field Effect Transistors for Terahertz Detection and Emission J Infrared Milli Terahz Waves 32(5), 618-628 (2011)

[17] A. El Fatimy, N. Dyakonova, **Y. Meziani**, T. Otsuji, W. Knap, S. Vandenbrouk, K. Madjour, D.Théron, and C. Gaquiere, M. A. Poisson, S. Delage, P. Pristawko, and C. Skierbiszewski AlGaN/GaN high electron mobility transistors as a voltage-tunable room temperature Terahertz sources J. Appl. Phys.107, 024504 (2010).

[18] D. Coquillat, S. Nadar, F. Teppe, N. Dyakonova, S. Boubanga-Tombet, W. Knap, T. Nishimura, T. Otsuji, **Y. M. Meziani**, G. M. Tsymbalov, and V. V. Popov Room temperature detection of sub-terahertz radiation in double-grating-gate transistors Optic Express 18(6), 6024-6032 (2010)

**C.2. Projects**

**- Title:** Transistores FET basados en Si y materiales 2d avanzados para tecnología super-Terahercios
**PIs:** J. E. Velázquez; Y. M. Meziani Num of Researchers: 6
**Fund donor:** Ministerio de ciencia e Innovación & FEDER.
**Reference:** PID2021-126483OB-I00 **Period:** 2022 - 2025 **Budget:** 118.701 €

**- Title:** Desarrollo de nuevos sensores ópticos y de nuevas técnicas de caracterización en los espectros visible y de Terahercios (SA121P20)
**PIs:** Y. M. Meziani Num of Researchers: 6
**Fund donor:** Consejería De Educación Y Cultura De La Junta De Castilla Y León & Feder.
**Reference:** SA121P20 **Period:** 2022 - 2025 **Budget:** 264.000 €

**- Title:** NUEVA GENERACION DE TRANSISTORES FET PARA TECNOLOGIA DE THZ
**PIs:** J. E. Velázquez; Y. M. Meziani Num of Researchers: 6
**Fund donor:** MINISTERIO DE ECONOMIA Y COMPETITIVIDAD.
**Reference:** RTI2018-097180-B-I00 **Period:** 01/01/2018 - 31/12/2021 **Budget:** 118.701 €

**- Title**: Tecnologías basadas en materiales híbridos avanzados: Grafeno, Materiales 2D y Aislantes topológicos
**PI:** Enrique Diez No de investigadores/as: 9
**Fund donor**: CONSEJERIA DE EDUCACIÓN
**Reference**: *SA256P18* **Period**: 2019 – 2021 **Budget**: 120.000 €

**- Title:** Desarrollo de sensores de THz para aplicaciones de imagen y seguridad
**PIs:** J. E. Velázquez; Y. M. Meziani Num of Researchers: 6
**Fund donor:** MINISTERIO DE ECONOMIA Y COMPETITIVIDAD.
**Reference:** TEC2015-65477-R **Period:** 01/01/2016 - 31/12/2018 **Budget:** 139.029 €

**- Title**: Nuevas Tecnologías Basadas en Grafeno y Nanoestructuras Semiconductoras
**PI:** Enrique Diez No de investigadores/as: 9
**Fund donor**: CONSEJERIA DE EDUCACIÓN
**Reference**: *SA045U16* **Period**: 23/03/2016 - 30/09/2018 **Budget**: 119.999 €

**- Title**: Japan-Spain International Collaborative Research on Terahertz Sensing Devices
**PI:** Y. M. Meziani Num of Researchers: 2
**Reference:**H29/A10 **Period**: 20/04/2014 - 15/03/2021 **Budget**: 20.000 €
**- Title:** Nanoestructuras electrónicas en grafeno y otros ,ateriales y sus aplicaciones en tecnologia de terahercios.
**PI:** Enrique Diez Fernández Num of Researchers: 6
**Funding entity:** Junta de Castilla y León (Consejería de Educación)
**Reference:** SA226U13 **Period:** 2013-2016 **Budget:** 30.000 €

**- Title:**Simulación y desarrollo de dispositivos semiconductores para aplicaciones en THz
**PI:** J. E. Velázquez Pérez Num of Researchers: 2
**Fund donor:** Ministerio De Economia Y Competitividad
**Reference:** TEC2012-32777 **Period:**01/02/2013 - 31/12/2015 **Budget:** 106.821 €

**- Title:** FETs nanométricos basados en Si: Funcionamiento en muy altas frecuencias y aspectos térmicos
**PI:** J. E. Velázquez Pérez Num of Researchers: 2
**Fund donor:** MICINN
**Reference:** TEC2008-02281**Period:** 01/01/2009 - 30/06/2012 **Budget:** 127 897 €

**- Title:** Sala Blanca de Nanotecnología de la Universidad de Salamanca
**PI:** Enrique Diez Num of Researchers: 6
**Fund donor:** MICINN (Programa INNPLANTA PCT-420000-2010-008)
**Reference:** PCT-420000-2010-008 **Period:** 01/06/2010 - 30/06/2012 **Budget:**670.000 €

**- Title:** Nuevas Tecnologías criogénicas aplicadas a Nanodispositivos Electrónicos de Grafeno
**PI:** Enrique Diez Num of Researchers: 6
**Fund donor:** Junta De Castilla Y León –
**Reference:** SA049A10-2 **Period:** 01/01/2010 - 31/12/2012 **Budget:** 40 000 €

**- Title:** Simulación de FETs nanométricos basados en Si: Funcionamiento en terahercio y transporte térmico
**PI:** J. E. Velázquez Pérez Num of Researchers: 4
**Fund donor:** JUNTA DE CASTILLA Y LEÓN
**Referenc:** SA061A09 **Period:** 01/01/2009 - 31/12/2011 **Budget:** 41.000€

- **Title:** Diseño y construcción de un refrigerador que alcance 3K sin utilizar líquidos criogénicos
**PI:** E. Diez Num of Researchers: 5
**Fund donor:** Ministerio de Ciencia e Innovación
**Reference:** PPT-310000-2008-3 y PPT-31000-2009-6 **Period:** 01/01/2008-30/06/2010
**Budget:** 219.500 €

**- Title:** New devices for detection of Terahertz radiations / Dispositivos innovadores para la detección de radiación en el rango de THzs (ICTS-ISOM UPM -Madrid)
**PI:** Y. M. Meziani
**Fund donor:** MEC **Period:** Desde 16/11/2009 Hasta 23/11/2009

**- Title:** Estudio de factibilidad de la fabricación de un MOSFET de grafeno
**PI:** Y. M. Meziani
**Fund donor:** Programa GICSERV: 7a convocatoria (MICINN) - Instituto De Microelectrónica De Barcelona (IMB-CNM)
**Period:** Desde: 17/01/2012 Hasta 20/01/2012

**- Title:** Sistema español de espectroscopía y formación de imagen en Terahercios
**PI:** Y. M. Meziani
**Fund donor:** Ministerio de Ciencia e Innovación - PPT-120000-2009-4
**Reference:** PPT-120000-2009-4 **Period:** 01/06/2009-30/04/2011 **Budget:** 250 250 €

**- Title:** Refrigeración en el milikelvin sin helio liquid
**PI:** E. Diez Num of Researchers: 4
**Fund donor:** MICINN
**Reference:** PCT-310000-2009-3 **Period:** 01/01/2009 - 30/06/2011 **Budget:** 353 000€

**C.3. Contracts with companies**

**- Title:** Sistema de inspección de células solares usando tecnología de Terahercios (Art. 83)
**PI:** Y.M. Meziani **Entity**: GRUPO UNISOLAR, S.A. (SOLIKER)
**Period**: 16/02/2011- 15/10/2012 **Budget**: 12000 €
**- Title**: Investigación y desarrollo de nuevas tecnologías de generación de energía basadas en células fotovoltaícas de lámina delgada (ATON)
**PI**: E. Diez **Entity**: Contract art. 83 with GRUPO UNISOLAR, S.A. (SOLIKER), Proyecto ATON-CDTI-CEN2009/1009

**Period**: 01/09/2009-31/12/2012 **Budget**: 70.000€

- **Title:** Cesión del uso de Oscilador de Titanio Zafiro entre el CLPU y la Universidad de Salamanca
**PI:** Y. M. Meziani
**Entity:** Center de Láseres Pulsados Ultracortos Ultraintesos – Universidad de Salamanca
Starting date: 25/11/2011

**C.4. Patents**

**Title:** A Terahertz Conversion Apparatus
**Inventores/autores/obtentores:** Yahya Moubarak Meziani; Velázquez, J. E.; Wocjeich Knap; Taiichi Otsuji; Dominique Coquillat; Frderic Teppe; V.V. Popov
**Type:** International **Reference:** PCT/JP2010/0070
**Date:** 03/12/2010

**C.6 Miembro de comités internacionales**
- Member of the program committee of INMIC2014 (2014 IEEE 17th International Multi-Topic Conference (INMIC)), Dec 8th-10th, Pakistan

- Member of International Advisory Committees of EMN Open Access Week, September 22-25, 2015 at Chengdu, China

- Member of the Organizing Committee of the *19th International Conference on Electron Dynamics in Semiconductors, Optoelectronics and Nanostructures* (EDISON'19), 29 June - 2 July 2015, Salamanca, Spain.

- Member of the international advisory board of the 4th International Conference on Millimeter Wave and Terahertz Technologies (MMWaTT 2016), 20-22 December 2016, Tehran, Iran.

- Member of the Organizing Committee of the *12th Spanish Conference on Electron Devices* (CDE2018), 14-16 November 2016, Salamanca, Spain

**C.7 Reviewer**

Reviewer for the journals: Physical Review Letter, Journal of Applied Physics, Applied Physics Letters, Solid State Electronics, Semiconductor Science and Technology, Journal of Physics: Condensed Matter, Chinese optic letter, Journal of Physics D: Applied Physics, Scientific report.

**C.8 Awards**
- Awarded the fellowship from the Japanese Society for the Promotion of Science (JSPS) in 2005.

- The paper "*Ballistic and pocket limitations of room temperature mobility in nanometer Si MOSFETs."* Appl. Phys. Lett. **87**, 053507 (2005) has been selected for the August 8, 2005 issue of Virtual Journal of Nanoscale Science & Technology. The Virtual Journal, which is published by the American Institute of Physics and the American Physical Society in cooperation with numerous other societies and publishers, is an edited compilation of links to articles from participating publishers, covering a focused area of frontier research. You can access the Virtual Journal at http://www.vjnano.org.

- Best presentation at International Workshop on Terahertz Science, Nanotechnologies and Applications, July 16-22, 2016, Erice, Italia.