

# Abderrahim AYAD

# Doctor in Geosciences

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## Educations

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- **2021: Phd (Doctor of Philosophy)** in Geosciences, Abdelmalek Essaâdi University, Tangier.  
*Supervisor:* Dr. Saad Bakkali, Department of Earth Sciences, Abdelmalek Essaâdi University, Tangier, Morocco.  
*Thesis title:* “Fractal analysis of the geoelectrical signatures of the disturbances of phosphate series of Sidi Chennane (Ouled Abdoun-Central Morocco)”.
- **2015: MSC (Master of Science)** in Mineral prospecting, Hassan 1<sup>er</sup> University, Settat.
- **2022 - till date:** Student in **English language Studies**, Faculty of Letters and Human Sciences, Sultan Moulay Slimane University, Beni Mellal.
- **2013: B.S. (Bachelor of Science)** in Mineral Resources, Hassan 1<sup>er</sup> University, Settat.
- **2010: High-School diploma/degree**, Ibno Tofail School, Oued Zem.

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## Publications

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- A. Ayad, S. Bakkali (2022) Multifractal Classification of Disturbed Areas of the Sidi Chennane Phosphate Deposit, Morocco. *Economic and Environmental Geology*. 55(3), 1-9.
- A. Ayad, S. Bakkali (2022) Using the mass-radius method to quantify the disturbed zones in Sidi Chennane mine through geo-electrical images. *International Journal of Mining and Geo-Engineering*, 56(3);
- A. Ayad (2022) Prospecting for polymetallic mineralization in Middle Morocco using fractal mapping. *Arabian Journal of Geosciences*. 15(312): 1-12;
- A. Ayad, S. Bakkali (2019) fractal assessment of the disturbances of phosphate series using lacunarity and succolarity analysis on geoelectrical images (Sidi Chennane, Morocco). *Complexity* 2019: 1-12.
- A. Ayad, M. Amrani & S. Bakkali (2019) quantification of the disturbances of phosphate series using the box-counting method on geoelectrical images (Sidi Chennane, Morocco). *International Journal of Geophysics* 2019(3): 1-12.
- A. Ayad, S. Bakkali (2018) assessment of the geoelectrical anomalies of the disturbances of phosphate series using the triangular prism surface area method (Sidi Chennane -Morocco). *Proceedings of the 2<sup>nd</sup> Conference on Geophysics for Mineral Exploration and Mining*. September 09, 2018, Porto, Portugal.
- A. Ayad, S. Bakkali (2018) analysis of the magnetic anomalies of buried archaeological ovens of Aïn Kerouach (Morocco). *International Journal of Geophysics* 2018(7): 1-8.
- A. Ayad, S. Bakkali (2017) interpretation of potential gravity anomalies of Ouled Abdoun phosphate basin (Central Morocco). *Journal of Materials and Environmental Science* 8(9): 3391-3397.

## Manuscripts under review

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- A. Ayad. "Using fractal dimension approach to delineate potential groundwater recharge sites in Smaâla area (Central Morocco)". *Journal of African Earth Sciences*. Manuscript ID: AES11117.
- A. Ayad. "The economic impact of the derangements on phosphate mining process in Sidi Chennane, Morocco". *Journal of Mining and Environment*. Manuscript ID: JME-2210-2236 .

## Conference presentations

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- A. Ayad, S. Bakkali (2018) Static correction for seismic data acquired from Boujdour and Tarfaya-Laayoune areas (South of Morocco). *2<sup>nd</sup> General Assembly for the African Seismological Commission, Al Hoceima 2018*, 23 Avril 2018.
- A. Ayad, S. Bakkali (2018) Digital diagnosis of the disturbances of phosphate series using the succolarity analysis (Sidi Chennane, Morocco). *1<sup>er</sup> journée doctorale en sciences et technologies de l'information. ENSA Tanger*. 12 Mai 2018.
- A. Ayad, S. Bakkali (2018) Automated quantification of the disturbances of phosphate series using the lacunarity analysis (Sidi Chennane, Morocco). *2<sup>eme</sup> congrès International sur le permien et le trias. FS Ben msik*. 25-27 Avril 2018.
- A. Ayad, S. Bakkali (2018) 3D fractal analysis of the disturbances of Sidi Chennane phosphate deposit (Ouled Abdoun, Morocco). *Journées doctorales en sciences et technologies. ENSA Tetouan*. 02-03 Mai 2018.
- A. Ayad, S. Bakkali (2018) Multifractal characterization of the visual spatial pattern of the disturbances of phosphates series through the geoelectrical maps (Sidi Chennane, Morocco). *19<sup>eme</sup> journée de la recherche scientifique (JR19). Faculté Ousoul Edine*. 09-10 Mars 2018. (Le premier prix, branche « Biologie-Chimie-Géologie »).
- A. Ayad, S. Bakkali (2017) Using the box-counting method to analyse the disturbances of phosphate serie of Sidi Chennane (central Morocco). *2nd IGCP638 International colloquium. Bibliothèque universitaire Md Sekkat*. 07-12 November 2017.
- A. Ayad, S. Bakkali (2017) Analyse fractale des anomalies géoélectriques des perturbations de la serie phosphatee de Sidi Chennane (Ouled Abdoun, Maroc). *Colloque International des jeunes chercheurs. FS Tétouan*, 18-19 Décembre 2017.
- A. Ayad, S. Bakkali (2017) Analyse des données archéomagnétiques du site médiéval d'Aïn Kerouach. *Deuxième édition de la rencontre nationale des jeunes géologues. Faculté des sciences d'Eljadida*. 05-07 Octobre 2017.
- A. Ayad, S. Bakkali (2017) Validation des anomalies géoélectriques des dérangements de la série phosphatée de Sidi Chennane (Maroc central). *Deuxièmes Journées Jeunes Chercheurs en Géosciences. Complexe My Rachid, Bouznika*. 21-22 Avril 2017.
- A. Ayad, S. Bakkali (2016) Apport du signal analytique à circonscrire les anomalies des zones de dérangements du bassin d'Ouled Abdoun (Maroc central). *Deuxième semaine sur l'environnement RSE 2016. Rencontre scientifique : Eau, énergie et matériaux. Faculté des sciences de Ben M'sik*. 23 Mai 2016.
- A. Ayad, S. Bakkali (2016) Filtrage des données de résistivité électrique des «dérangements» de Sidi Chennane par la méthode de LOESS. *Première rencontre nationale des jeunes géologues. Faculté des sciences d'Eljadida*. 27-28 Mai 2016.

## Academic Experiences

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- **September, 2019 - till date:** Teacher of Life and Earth Sciences at High School, Khouribga.
- **May, 2022 - June, 2022:** Temporary professor of Sedimentary, Igneous and Metamorphic Petrology, Polydisciplinary Faculty of Khouribga - Sultan Moulay Slimane University (**24 hours**).
- **November, 2021- December 2021:** Temporary professor of Topographic map, Polydisciplinary Faculty of Khouribga - Sultan Moulay Slimane University (**60 hours**).
- **April 2018- May, 2018:** Temporary professor of Topographic map-Petrology, Faculty of Sciences and Techniques - Abdelmalek Essaâdi University, Tangier (**68 hours**).

## Professional Internships

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- **September 15 to October 14, 2016:** Practical internship - OCP Group of phosphate (Khouribga), Processing Department - Methods and planning services, Daoui point B;
- **February 16 to June 16, 2015:** Practical internship - National Office of Hydrocarbons and Mines (Rabat), Oil Exploration Department - Petroleum Geophysics Division;
- **April 15 to May 15, 2013:** Practical internship - OCP Group of phosphate (Khouribga), Processing, Methods and Planning Department, Daoui Point B;
- **July 23 to August 20, 2012:** Practical internship - OCP Group of phosphate (Khouribga), Extraction Department - Sidi Chennane Exploitation Department.

## Peer-reviews (*Web of Sciences Academy graduate*)

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- International Journal of Environment and Climate Change (**10 reviews**);
- Journal of Geography, Environment and Earth Science International (**9 reviews**);
- International Conference on Geosciences and Remote Sensing (GeoRS) (**7 reviews**);
- Physical Science International Journal (**3 reviews**);
- Asian Journal of Geological Research (**2 reviews**);
- Advances in Science, Technology and Engineering Systems Journal (**1 review**);
- Asian Basic and Applied Research Journal (**1 review**);
- Asian Journal of Geographical Research (**1 review**);
- Asian Research Journal of Current Science (**1 review**);
- Athens Journal of Sciences (**1 review**);
- Current Journal of Applied Science and Technology (**1 review**);
- Journal Of Engineering Research And Sciences (**1 review**);
- Journal of Applied Physical Science International (**1 review**);
- Journal of Scientific Research and Reports (**1 review**);
- Physics and Chemistry of the Earth (**1 review**);
- World Journal of Geomatics and Geosciences (**1 review**).

## Languages

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- **Arabic**
- **French**
- **English**