Associate Professor: Moaaz Korany Seliem Hassan.

Curriculum Vitae

Personal Data:

Full Name: Moaaz Korany Seliem Hassan
Date of Birth: 24/2/1976, Beni-Suef.
Nationality: Egyptian.
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ACADEMIC CAREER AND EXPERIENCES:

1- July 1999–July 2005: Demonstrator at Geology Department, Faculty of Science, Beni-Suef branch, Cairo University
2- August 2005: Assistant lecturer at Geology Department, Faculty of Science, Beni-Suef University.
3- Vesting Scholar in Materials Research Institute (MRI), The Pennsylvania State University, University Park, PA 16802, USA, in period, (25-2-2009 to 25-8-2012).
4. April 2013, Lecturer at Geology Department, Faculty of Science, Beni-Suef University.
5. July 2018, Associated Professor at Faculty of Earth Sciences, Beni-Suef University, Egypt.

Research Interests:

1- Synthesis, characterization, and applications of advanced ceramics and geoploymers.

2- Synthesis of new types of clay minerals, porous materials and Nanocomposites.

3- Water purification using natural and synthetic materials (adsorption and degradation)

4- Kinetics, isotherm, thermodynamic, and statistical physics modeling

5. Recycling of industrial/agricultural solid wastes for Environmental applications

Funded Projects

USA (Pennsylvania State University)

- **Synthetic and Modified Clays for Remediation of Soils and Water.**
- **Synthesis of hybrid organosilicas for uptake of perchlorate from water**
- **Organo-clays nanocomposites: Synthesis, characterization and applications for oxyanions adsorption.**

Egypt

Title	Finance Authority	Year
Water treatment by flaky graphite and active carbon synthesized from El Maghara coal deposits.	Beni-Suef University	2015
Synthetic Organosilicas, Rice Husk Composites and Organoclays Nanocomposites for Water treatment.	Beni-Suef University	2015
Multidisciplinary approach for modified Egyptian bentonite clays: Preparation, characterization and preliminary evaluation for different potential applications	Italy-Egypt Project)	2016
Nanocomposites and porous materials: Synthesis, characterization and their suitability for different applications	(Finland-Egypt project).	2017
Post treatment of Desalinated water using a low coast of local natural materials	STDF	2018
Organic-inorganic hybrid nanocomposites: Synthesis, characterization, and potential applications. (STDF Project).	STDF	2018
preparation of new sorbent materials from agricultural waste and natural materials through	Higher Education Ministry	2018
the re-use of cans bottles in purification and treatment of contaminated water	Higher Education Ministry	2018
Pharmaceutical uptake from wastewater by metal-bearing natural materials: Case study, (Hospital of Beni-Suef University).	Beni-Suef University	2019
Effective removal of wastewater contaminates using magnetic nanoparticles impregnated onto CTAB/H_2O_2–clays: Statistical physics modeling (Bayad Al–Arab, East Beni–Suef)	Beni-Suef University	2020
Utilizing Natural and Modified Egyptian Metal Oxides Ores as Low-cost Adsorbents and Catalysts in Wastewater Purification (Under Evaluation)	France-Egypt Project	2020

Activity

- Head of Mineral Technology and Environmental Application Laboratory (META Lab), Faculty of Earth Science, Beni-Suef University.
- Coordinator of Engineering Geology Program
- Guest Editor in Water Journal, SI, MDPI
- Associate Editor for Biomaterials and Bio-Inspired Materials

Teaching:

- Industrial Minerals and Rocks
- Clay Minerals
- Applied Mineralogy
- Economic Geology
- Synthetic Materials
- Porous Materials
- Minerals and Rocks
- Minerals in Water Treatment
- Raw Materials in Environmental Applications

International Patents

United States Patent
Patent No. 11,332,389 B1
Title: Recyclable multifunctional composite for metal ions removal from water
Date May, 2022

Some of recent Publications

M Mobarak, EA. Mohamed, AQ. Selim, L Sellaoui, A Ben Lamine, A Ertod, AB Petriciolete, **Moaaz K. Seliem**: Surfactant–modified serpentine for fluoride and Cr(VI) adsorption in single and binary systems: Experimental studies and theoretical modeling. Chemical Engineering Journal 369 (2019) 333–343.

EA. Mohamed, AQ. Selim, AM. Zayed, S Komarneni, M Mobarak, **Moaaz K. Seliem**: Enhancing adsorption capacity of Egyptian diatomaceous earth by thermochemical purification: Methylene blue uptake. Journal of Colloid and Interface Science (2019).

M Mobarak, EA. Mohamed, AQ. Selim, MF. Eissa, **Moaaz K. Seliem.** Experimental results and theoretical statistical modeling of malachite green adsorption onto MCM–41 silica/rice husk composite modified by beta radiation. Journal of Molecular Liquids 273 (2019) 68–82.

M Mobarak, EA. Mohamed, AQ. Selim, FM Mohamed, L Sellaoui, A Petriciolet, **Moaaz K. Seliem**. Statistical physics modeling and interpretation of methyl orange adsorption on high–order mesoporous composite of MCM–48 silica with treated rice husk. Journal of Molecular Liquids 285 (2019) 678–687.

EA. Mohamed, AQ. Selim, SA. Ahmed, L Sellaoui, A Petriciolet, A Ertoe, L Zichao, L Yanhui, **Moaaz K. Seliem**: H2O2-activated anthracite impregnated with chitosan as a novel composite for Cr(VI) and methyl orange adsorption in single-compound and binary systems: Modeling and mechanism interpretation. Chemical Engineering Journal 380 (2020) 122445.

Essam A. Mohamed, Mohamed Mobarak, Rajeev Kumar, M.A. Barakat, Adrián Bonilla-Petricioletd, **Moaaz K. Seliem**, Ali Q. Selim. Novel hybrid multifunctional composite of chitosan and altered basalt for barium adsorption: Experimental and theoretical studies. Colloids and Surfaces A 593 (2020) 124613.

Moaaz K. Seliem, M. Barczak, Ioannis Anastopoulos, D.A. Giannakoudakis, A novel nanocomposite of activated serpentine mineral decorated with magnetic nanoparticles for rapid and effective adsorption of hazardous cationic dyes: Kinetics and equilibrium studies, Nanomaterial Journal, MDPI, 2020.

Z. Li, H. Hanafy, L. Zhanga, L. Sellaoui, M. Nettoe, M.L.S.Oliveira, **Moaaz K. Seliem**, G. Luiz Dottoe,Adrian Bonilla-Petricioleti, Q. Lia, Adsorption of Congo red and methylene blue dyes on an ashitaba waste and a walnut shell-based activated carbon from aqueous solutions: Experiments and physical interpretations. Chemical Engineering Journal (2020).

Mohamed A. Barakat, Rajeev Kumar, **Moaaz K. Seliem**, Ali Q. Selim, Mohamed Mobarak, Ioannis Anastopoulos, Dimitrios Giannakoudakis, Mariusz Barczak, Adrián Bonilla-Petriciolet, Essam Abdelrahman Mohamed, Exfoliated Clay Decorated with Magnetic Iron Nanoparticles for Crystal Violet Adsorption: Modeling and Physicochemical Interpretation, Nanomaterial Journal, MDPI, 2020.

M. A. Barakat, Ali Q. Selim, Mohamed Mobarak , Rajeev Kumar, Ioannis Anastopoulos, Dimitrios A. Giannakoudakis, Adrián Bonilla-Petriciolet , Essam A. Mohamed, **Moaaz K. Seliem**, Sridhar Komarneni. Experimental and theoretical studies of methyl orange uptake by Mn–rich synthetic mica: Insights into manganese role in adsorption and selectivity Nanomaterial Journal, MDPI, 2020.

Rajeev Kumara, M.A. Barakat, Md Abu Taleba, **Moaaz K. Seliem**, A recyclable multifunctional graphene oxide/SiO2@polyanilinemicrospheres composite for Cu(II) and Cr(VI) decontamination from wastewater, Cleaner Production Journal (2020).

Md. Abu Taleb, Rajeev Kumar, Awad A. Al-Rashdi, **Moaaz K. Seliem,** M. A. Barakat, Fabrication of SiO2 /CuFe 2 O 4 /polyaniline composite: A highly efficient adsorbent for heavy metals removal from aquatic environment, Arabian Journal of Chemistry, 2020**.**

H Wang, Z Li, S Yahyaoui, H Hanafy, MK Seliem, A Bonilla-Petriciolet, **Moaaz K.Seliem:** Effective adsorption of dyes on an activated carbon prepared from carboxymethyl cellulose: Experiments, characterization and advanced modelling
128116; Chemical Engineering Journal, 2021.

M. A. Barakat, Rajeev Kumar, Eder C. Lima , **Moaaz K. Seliem**: Facile synthesis of muscovite–supported Fe_3O_4 nanoparticles as an adsorbent and heterogeneous catalyst for effective removal of methyl orange: Characterisation, modelling, and mechanism, Journal of the Taiwan Institute of Chemical Engineers , 2021.

H.S. Ramadan, **M. Mobarak**, Eder C. Lima, A. Bonilla-Petriciolet, Z. Lie, **M. K. Seliem**, Cr(VI) adsorption onto a new composite prepared from Meidum black clay and pomegranate peel extract: Experiments and physicochemical interpretations, Journal of Environmental Chemical Engineering **9**, 105352 (2021).

Eder C. Lima, Farooq Sher, Mohammad Reza Saeb, Mohamed Abatal, **Moaaz K. Seliem**: Comments on "Reasonable calculation of the thermodynamic parameters from adsorption equilibrium constant, Journal of Molecular Liquids 322 (2021) 114980'. Journal of Molecular Liquids (2021).

Diana R. Lima, Eder C. Lima, Pascal S. Thue, Silvio L.P. Dias, Fernando M. Machado, **Moaaz K. Seliem**, Farooq Sher, Glaydson S. dos Reis, Mohammad Reza Saeb, Jörg Rinklebe: Comparison of acidic leaching using a conventional and ultrasound-assisted method for preparation of magnetic-activated biochar: Journal of Environmental Chemical Engineering (2021).

R. A.M. Ali, M. Mobarak, A. M. Badawy, E. C. Lima, **M. K. Seliem**, H.S. Ramadan, New insights into the surface oxidation role in enhancing Congo red dye uptake by Egyptian ilmenite ore: Experiments and physicochemical interpretations Surfaces and Interfaces Journal (2021)

M. Mobarak , Rabea A.M. Ali, **Moaaz K. Seliem**, Chitosan/activated coal composite as an effective adsorbent for Mn(VII): Modeling and interpretation of physicochemical parameters, International Journal of Biological Macromolecules Journal of Biological Macromolecules, 2022.

Roberta A. Teixeira · Eder C. Lima, Antônio D. Benetti1, Pascal S. Thue, Diana R. Lima · Farooq Sher, Glaydson S. dos Reis, Navid Rabiee, **Moaaz K. Seliem**, Mohamed Abatal Composite of methyl polysiloxane and avocado biochar as adsorbent for removal of ciprofloxacin from waters Environmental Science and Pollution Research journal, 2022.

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Mohamed Shakly, Laila Saad, **Moaaz K. Seliem**, AdriánBonilla-Petriciolet, Nabila Shehata, New insights into the selective adsorption mechanism of cationic and anionic dyes using MIL-101(Fe) metal-organic framework: Modeling and interpretation of physicochemical parameters. Journal of Contaminant Hydrology 2022.

Inas A. Ahmed, Michael Badawi, Adrián Bonilla-Petriciolet, Eder C. Lima, **Moaaz K. Seliem**, Mohamed Mobarak Insights Into the Mn(VII) and Cr(VI) Adsorption Mechanisms on Purified Diatomite/MCM-41 Composite: Experimental Study and Statistical Physics Analysis. Frontiers in Chemistry 2022.

Inas A. Ahmed, Michael Badawi, Adrián Bonilla-Petriciolet, Eder C. Lima, Ioannis Anastopoulos **Moaaz K. Seliem**, Outstanding Performance of a New Exfoliated Clay Impregnated with Rutile TiO2 Nanoparticles Composite for Dyes Adsorption: Experimental and Theoretical Studies, Coating 2022.

Hanjing Xue, XuemeiWang, Qi Xu, Fatma Dhaouadi,Lotfi Sellaoui, **Moaaz K. Seliem**, AbdelmottalebBenLamine,HafedhBelmabrouk,AbdullahBajahzar,AdrianBonilla-Petriciolet, Zichao Li, QunLi, Adsorption of methylene blue from aqueous solution on activated carbons and composite prepared from an agricultural waste biomass: A comparative study by experimental and advanced modeling analysis. Chemical Engineering Journal 2022.

Utilization of alkali-activated dolomite waste toward the fabrication of an effective adsorbent: Experimental study and statistical physics formalism for the removal of AS El-shimy, HA Abdel-Gawwad, M Al-Dossari, NS Abd EL-Gawaad, **Moaaz K. Seliem**, Journal of Physics and Chemistry of Solids, 111442, ٢٠٢٣

Utilization of red clay brick waste in the green preparation of an efficient porous nanocomposite for phenol adsorption: Characterization, experiments and statistical physics
HA Abdel-Gawwad, MS Ahmed, AH Mohammed, M Badawi, **Moaaz K. Seliem**, Sustainable Chemistry and Pharmacy 32, 101027, 2023

Dual-functional marine algal carbon-based materials with highly efficient dye removal and disinfection control R Dong, **Moaaz K Seliem**, M Mobarak, H Xue, X Wang, Q Li, Z Li Environmental Science and Pollution Research, 1-19, ٢٠٢٣
Fe3O4 Nanoparticles Loaded Bentonite/Sawdust Interface for the Removal of Methylene Blue: Insights into Adsorption Performance and Mechanism via Experiments and Theoretical

Insights into the adsorption performance and mechanism of Cr (VI) onto porous nanocomposite prepared from gossans and modified coal interface: Steric, energetic, and…

M Mobarak, S Qaysi, MS Ahmed, YF Salama, AM Abbass, **Moaaz K. Seliem**, Chinese Journal of Chemical Engineering, ٢٠٢٣

Utilization of Foamed Glass as an Effective Adsorbent for Methylene Blue: Insights into Physicochemical Properties and Theoretical Treatment H Al-Kroom, HA Abdel-Gawwad, M Abd Elrahman, S Abdel-Aleem... , Moaaz K. Seliem, Materials 16 (4), 1412, ٢٠٢٣

Effective removal of Cr (VI) and methyl orange by nano magnetite loaded starch/muscovite biocomposite: Characterization, experiments, advanced modeling, and physicochemical… AM Badawy, AA Farghali, A Bonilla-Petriciolet, AQ Selim, **Moaaz K. Seliem** International Journal of Biological Macromolecules 224, 1052-1064, ٢٠٢٣

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Chemical Engineering Journal 451, 138735, 2023