



PERSONAL INFORMATION

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Sex Male | Date of birth 01/10/1980 | Nationality Egyptian

WORK EXPERIENCE

01/08/2018 – Lecturer (Physics)

To date at Sohag University, Faculty of Science, Physics Department, Sohag (Egypt)

09/07/2012– Scientist

31/12/2017 at Karlsruhe Institute of Technology (KIT), Karlsruhe, Baden-Württemberg (Germany)

03/04/2011– Assistant Lecturer (Physics)

08/07/2012 at Sohag University, Faculty of Science, Physics Department, Sohag (Egypt)

07/05/2003– Demonstrator (Physics)

02/04/2011 at Sohag University, Faculty of Science, Physics Department, Sohag (Egypt)

EDUCATION AND TRAINING

18/12/2012– Ph.D. in the field of energy storage and electrochemistry

29/09/2017 Materials Science Department, Technical University of Darmstadt (TUD), Darmstadt, Germany; and Institute of Nanotechnology (INT), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany.

Dissertation title: In-situ and Ex-situ TEM Studies of Fluoride Ion Batteries.

2005–2007 M.Sc. in Solid-State Physics, Plasma Applications (Physics)

Sohag University, Faculty of Science, Physics Department, Sohag (Egypt)

- Surface coating of metals using DC magnetron sputtering
- Duplex treatment of stainless steel using RF plasma and DC magnetron sputtering
- Nitriding, carburizing, carbonitriding of stainless steel using RF plasma

Thesis title: Duplex Plasma Treatment of Stainless Steel

SCIENTIFIC ACHIEVEMENTS

Total no. of int. publications in Scopus	22
Total no. of citations (Scopus)	345
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LIST OF PUBLICATIONS

1. M. Abdelhamid Shahat, Ahmed Ghitas, F. M. El-Hossary, A. M. Abd El-Rahman, **Mohammed H. Fawey**; "Study on Enhancement of Adhesion Force and Surface Conductivity of Graphene Oxide Films using Different Solvents"; Recent Trends in Chemical and Material Sciences Vol. 1, Chapters, 7 July **2021**, Page 49-62; DOI: <https://doi.org/10.9734/bpi/rtcams/v1/10890D>
2. F. M. El-Hossary, Ahmed Ghitas, A. M. Abd El-Rahman, A. A. Ebnalwaled, M. Abdelhamid Shahat, and **Mohammed H. Fawey**; "Cold RF oxygen plasma treatment of graphene oxide films"; Journal of Materials Science: Materials in Electronics volume 32 (**2021**) 15718–15731, DOI: <https://doi.org/10.1007/s10854-021-06123-x>
3. F. M. El-Hossary, Ahmed Ghitas, A. M. AbdEl-Rahman, M. Abdelhamid Shahat, **Mohammed H. Fawey**; "The effective reduction of graphene oxide films using RF oxygen plasma treatment"; Vacuum, 188 (**2021**) 110158; DOI: <https://doi.org/10.1016/j.vacuum.2021.110158>
4. F. M. El-Hossary, A. Ghitas, A. M. Abd El-Rahman, A. A. Ebnalwaled, M. Abdelhamid Shahat, and **M. H. Fawey**; "Effect of UV-activated TiO₂ Nanoparticles on the Properties and Performance of PAni-TiO₂ Nanocomposite Films for Solar Cell Applications", IOP Conference Series: Materials Science and Engineering, Volume 956, 34th Eg-MRS International Conference **29-30 August 2020**, Cairo, Egypt, DOI: [10.1088/1757-899X/956/1/012015](https://doi.org/10.1088/1757-899X/956/1/012015)
5. **Mohammed Hammad Fawey**, Venkata Sai Kiran Chakravadhanula, Anji Reddy Munnangi, Carine Rongeat, Horst Hahn, Maximilian Fichtner, and Christian Kübel, "First results from in situ transmission electron microscopy studies of all-solid-state fluoride ion batteries", Journal of Power Sources 466 (**2020**) 228283, DOI: [10.1016/j.jpowsour.2020.228283](https://doi.org/10.1016/j.jpowsour.2020.228283).
6. Leonard F. Henrichs, Xiaoke Mu, Torsten Scherer, Uta Gerhards, Stefan Schuppler, Peter Nagel, Michael Merz, Christian Kübel, **Mohammed H. Fawey**, Thomas C. Hansen and Horst Hahn, "First-time synthesis of a magnetoelectric core-shell composite via conventional solid-state reaction", Nanoscale, 12 (**2020**) 15677-15686, DOI: [10.1039/D0NR02475A](https://doi.org/10.1039/D0NR02475A).

7. A. M. Abd El-Rahman, Ronghua Wei, M. Raaif, F. M. El-Hossary, **M. Hammad Fawey**, M. Abo El-kassem, "Effect of N₂/TMS Gas Ratio on Mechanical and Erosion Performances of Ti-Si-C-N Nanocomposite Coatings", Journal of Materials Engineering and Performance, 29 (2020) 3324–3333, DOI:10.1007/s11665-020-04840-8.
8. F. M. El-Hossary, Ahmed Ghitas, A.M. Abd El-Rahman, A. A. Ebnalwaled, **Mohammed. H. Fawey** and M. Abdelhamid Shahat, "Enhancement of Adhesion Force and Surface Conductivity of Graphene Oxide Films Using Different Solvents", IOP Conference Series: Materials Science and Engineering, 762 (2020) 012001, DOI: 10.1088/1757-899X/762/1/012001.
9. S. Sabet, A. Moradabadi, S. Gorji, **M. H. Fawey**, E. Hildebrandt, I. Radulov, D. Wang, H. Zhang, C. Kübel, and L. Alff, "Correlation of Interface Structure with Magnetic Exchange in a Hard/Soft Magnetic Model Nanostructure", Journal of Physical Review Applied, 11 (2019) 054078, DOI: 10.1103/PhysRevApplied.11.054078.
10. Andrzej Musiał, Zbigniew Śniadecki, Natalia Pierunek, Yulia Ivanisenko, Di Wang, **Mohammed H. Fawey**, Bogdan Idzikowski, "Tuning of magnetic properties of Hf₂Co₁₁B alloys through a combined high pressure torsion and annealing treatment", Journal of Alloys and Compounds, 787 (2019) 794-800, DOI: 10.1016/j.jallcom.2019.02.098.
11. S. Sabet, A. Moradabadi, S. Gorji, M. Yi, Q. Gong, **M. H. Fawey**, E. Hildebrandt, D. Wang, H. Zhang, B. Xu, C. Kübel and L. Alff, "Impact of interface structure on magnetic exchange coupling in MnBi/Fe_xCo_{1-x} bilayers", Physical Review B, 98 (2018) 174440-174447, DOI: 10.1103/PhysRevB.98.174440.
12. Bhupendra K. Sharma, Anna Stoesser, Suresh Kumar Garlapati, **Mohammed Hammad Fawey**, Venkta Sai Kiran Chakravadhanula, Robert Kruk, Horst Hahn, and Subho Dasgupta, "High-Performance All-Printed Amorphous Oxide FETs and Logic with Superior Electrode/Channel Interface", ACS Applied materials & interfaces, 10 (2018) 22408–22418, DOI: 10.1021/acsami.8b04892.
13. M. R. Chellali, S. H. Nandam, S. Li, **M. H. Fawey**, E. Moreno-Pineda, L. V. Estrada, T. Boll, R. Kruk, H. Hahn, "Amorphous Nickel nanophases inducing ferromagnetism in equiatomic Ni-Ti alloy", Acta Materialia 161 (2018) 47-53, DOI: 10.1016/j.actamat.2018.09.019.
14. Magnus Garbrecht, Lars Hultman, **Mohammed H. Fawey**, Timothy D. Sands, and Bivas Saha, "Tailoring of surface plasmon resonances in TiN/(Al_{0.72}Sc_{0.28})N multilayers by dielectric layer thickness variation", Journal of Materials Science, 53 (2018) 4001-4009, DOI: 10.1007/s10853-017-1837-4.
15. **Mohammed Fawey**, "In situ and Ex situ TEM Studies of Fluoride Ion Batteries", Ph.D. thesis (2017), <https://tprints.ulb.tu-darmstadt.de/id/eprint/6933>.
16. Magnus Garbrecht, Lars Hultman, **Mohammed H. Fawey**, Timothy D. Sands, and Bivas Saha,

- "Void-mediated coherency-strain relaxation and impediment of cubic-to-hexagonal transformation in epitaxial metastable metal/semiconductor $TiN/Al_{0.72}Sc_{0.28}N$ multilayers", *Physical Review Materials*, 1 (2017) 033402, DOI: [10.1103/PhysRevMaterials.1.033402](https://doi.org/10.1103/PhysRevMaterials.1.033402).
17. Harshita Bhatia, Duc Tho Thieu, Alexander Herald Pohl, Venkata Sai K. Chakravadhanula, **Mohammed H. Fawey**, Christian Kübel, and Maximilian Fichtner, "Conductivity Optimization of Tysonite-type $La_{1-x}Ba_xF_{3-x}$ Solid Electrolytes for Advanced Fluoride Ion Battery", *ACS Applied Materials & Interfaces*, 9 (2017) 23707-23715, DOI: [10.1021/acsami.7b04936](https://doi.org/10.1021/acsami.7b04936).
 18. Bivas Saha, Magnus Garbrecht, Jaime A. Perez-Taborda, **Mohammed H. Fawey**, Yee Rui Koh, Ali Shakouri, Marisol Martin-Gonzalez, Lars Hultman, and Timothy D. Sands, "Compensation of native donor doping in ScN: Carrier concentration control and p-type ScN", *Applied Physics Letters*, 110 (2017) 252104, DOI: [10.1063/1.4989530](https://doi.org/10.1063/1.4989530).
 19. **Mohammed Hammad Fawey**, Duc Tho Thieu, Harshita Bhatia, Thomas Diemant, Venkata Sai Kiran Chakravadhanula, Rolf Jürgen Behm, Christian Kübel, and Maximilian Fichtner, " CuF_2 as Reversible Cathode for Fluoride Ion Batteries", *Advanced Functional Materials*, 27 (2017) 1701051, DOI: [10.1002/adfm.201701051](https://doi.org/10.1002/adfm.201701051).
 20. **Mohammed Hammad Fawey**, Venkata Sai Kiran Chakravadhanula, Munnangi Anji Reddy, Carine Rongeat, Torsten Scherer, Horst Hahn, Maximilian Fichtner, and Christian Kübel, "In situ TEM Studies of Micron-sized All-solid-state Fluoride Ion Batteries: Preparation, Prospects, and Challenges", *Microscopy Research and Technique*, 79 (2016) 615–624, DOI: [10.1002/jemt.22675](https://doi.org/10.1002/jemt.22675).
 21. Venkata Sai Kiran Chakravadhanula, Thais Silva Teodoro, Torsten Scherer, Suresh Kumar Garlapati, Aaron Kobler, Krishna Kanth Neelisetty, **Mohammed Hammad Fawey**, and Christian Kübel, "Electrochemistry in Liquid Environments: Challenges in the Presence of Accelerated Electrons", *Imaging & Microscopy*, Aug. 17 (2016), <http://www.imaging-git.com/science/electron-and-ion-microscopy/electrochemistry-liquid-environments>.
 22. Suresh Kumar Garlapati, Tessy Theres Baby, Simone Dehm, **Mohammed Hammad**, Venkata Sai Kiran Chakravadhanula, Robert Kruk, Horst Hahn, and Subho Dasgupta, "Ink-Jet Printed CMOS Electronics from Oxide Semiconductors", *Small*, 11 (2015) 3591–3596, DOI: [10.1002/smll.201403288](https://doi.org/10.1002/smll.201403288).
 23. Venkata Sai Kiran Chakravadhanula, **Mohammed Hammad Fawey**, Christian Kuebel, Torsten Scherer, Carine Rongeat, Anji Reddy Munnangi, Maximilian Fichtner and Horst Hahn, "Reversible In-Situ TEM Electrochemical studies of Fluoride Ion Battery", *Proceedings of Microscopy & Microanalysis*, 20 (2014) 1620-1621, DOI: [10.1017/S1431927614009830](https://doi.org/10.1017/S1431927614009830)
 24. F. M. El-Hossary, N. Z. Negm, A. M. Abed El-Rahman, **M. Hammad**, "Duplex treatment of 304 AISI stainless steel using rf plasma nitriding and carbonitriding", *Materials Science and Engineering C*, 29 (2009) 1167–1173, DOI: [10.1016/j.msec.2008.09.049](https://doi.org/10.1016/j.msec.2008.09.049).

25. F. M. El-Hossary, N. Z. Negm, A. M. Abd El-Rahman, **M. Hammad**, C. Templier, “*Duplex treatment of AISI 304 austenitic stainless steel using rf nitriding and dc reactive magnetron sputtering of titanium*”, *Surface & Coating Technology*, 202 (2008) 1392–1400,
DOI: [10.1016/j.surfcoat.2007.06.066](https://doi.org/10.1016/j.surfcoat.2007.06.066).