

Prof. Dr. Hassan Hanafy



Assistant Professor
Physics Department
Faculty of Science, Zulfi
Majmaah university

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Research Interests:

Atomic Collision: (ion – surface collision & e-atom/ion collision)
Photonic Crystals: (electromagnetic waves propagations & photonic band gabs)
Properties of Nano Polymer materials, Adsorption, Water Treatment
Language
Arabic, English

Qualification (Career and University Education)

1997-1999	PhD Degree (Atomic Physics)	<u>Internal</u> part at Faculty of science, Beni-Suef, Cairo University
2000-2002		<u>External</u> part at Stockholm University , Sweden
1991-1995	MS. C. Degree (Experimental Physics)	Faculty of Science, Beni-Suef, Cairo University.
1985-1989	B. Sc. Degree (Physics)	Grade “very good “, Faculty of Science, Beni-Suef, Cairo University.

Career

1989-1995	Demonstrator , Physics Department, faculty of science, Beni-Suef, Cairo University
1995-2002	Lecturer , Physics Department, Faculty of Science, Beni-Suef, Cairo University
2002-2011	Assistant Professor, Physics Department, Faculty of Science, Beni-Suef, Cairo University
2011- now	Assistant Professor , Physics Department, Zulfi College of Science, Majmaah university , Saudi Arabia

Short Visits

2000-2002	Atomic physics Department, Stockholm University , Sweden
2011-	Assistant Professor, Physics Department, Zulfi College of Science, Majmaah university , Saudi Arabia.

Publication

- 1- H. Hamdy, M. A. K. El-Fayoumi, M. M. Mahdy, H. Hanafy and F. Shahin “ Excitation Function and Polarisation of Optical Radiation Induced by Electron Impact on Helium” *Egypt. J. Phys.* Vol. 27, No. 1-2 pp. 17-29 (1996).
- 2- T. Ali, H. Hanafy and F. Shahin “ Excitation Cross Section of the Calcium $\lambda=468.52$ nm line by Electron Impact” *4th Radiation Conference, Alexandra* 15-19 Nov.(1998).
- 3- H. Hamdy, M. A. K. El-Fayoumi, M. M. Mahdy, H. Hanafy and F. Shahin “ Polarisation Measurements of the Emitted Light Induced by Electron Impact on Zinc Atoms” *Egypt. J. Phys.* Vol. 31, No. 2 pp. 189-196 (2000).
- 4- Gy. Viktor, M. Bjorkhage, H. Hanafy, S. Leontein, A. paal, Z. D. Pesic, E. Lindroth, and R. Schuch " X- ray Emission from Slow Highly Charged Pb Ions Colliding with Metal Surfaces", 20th Summer School and International Symposium on the Physics of Ionized Gases, *Zlatibor, Yugoslavia*, September 4-8, (2000).
- 5- R. Schuch , H. Hanafy, Z. D. Pesic, Gy. Viktor, V. Hoffmann, D.Niemann, and N.Stolterfoht. " Scattering of Highly Charged Ions from Solid Surfaces", 20th Summer School and International Symposium on the Physics of Ionized Gases, *Zlatibor, Yugoslavia, September* 4-8, (2000).
- 6- Z. D. Pesic, H.Hanafy, V. Hoffmann, D.Niemann, R. Schuch, N.Stolterfoht and Gy. Viktor, " Energy and Angular Dependence of Neutralization in Scattering of Highly Charged Argon Ions from a Gold Surface" 20th Summer School and International Symposium on the Physics of Ionized Gases, *Zlatibor, Yugoslavia, September* 4-8, (2000).
- 7- H.Hanafy, M. Bjorkhage, S. Leontein, E. Lindroth, Z. D. Pesic, B. Rosner, J. Weimer, Gy. Viktor, and R. Schuch, “Observation of Internal Dielectronic Excitation with Slow Highly Charged Lead Ions hitting a Surface” *Physica Scripta. T92* , 147-50(2001)
<http://iopscience.iop.org/article/10.1238/Physica.Topical.092a00047/meta>
<http://iopscience.iop.org/1402-4896/2001/T92/008> - Google Search
- 8- H. Hanafy, M. Bjorkhage, Z. D. Pesic, , E. Lindroth, Gy. Viktor, A. paal and R. Schuch, “ Relaxation time of Highly Charged Lead ions hitting a Metallic Surface” *Annual Report, Manne Siegabhn Laboratory, Sweden*, 52-54 (2000)
- 9- Z. D. Pesic, J. Anton, S. Atanassova, H. Hanafy, Gy. Viktor, J. Weimer, M. Bjorkhage, S. Leontein and R. Schuch, “ Photon-Photon Coincidence Study in the Relaxation of Highly Charged Lead ions Colliding with Tantalum Foil” *Annual Report, Manne Siegabhn Laboratory, Sweden*, 32-34 (2001).
- 10- M. A. El-Fayoumi, M. Mhahdy and H. Hanafy “Radiative Rates and Lifetimes for Highly Ionized Zinc Ions”, *Sixth Radiation Physics Conference, Assiut, Egypt*, 27-30 Oct. (2002). *Arab J. Nucl. Sci. Appl.* , 36 - part 1 , 415, (2003)
- 11- H. Hanafy, G. Omar, and F. Shahin "Resonant Transfer Excitation Followed by X rays for $\text{Ar}^{(8+,11+,13+)}$ Ions with L-Shell Excitation", *XXIII International Conference on Photonic, Electronic and Atomic Collisions. Stockholm University, Sweden*, 23-29 July, (2003).

- 12- Gy. Viktor, J. Anton, S. Atanassova, A. Enulescu, H. Hanafy, A. Paal, Z. D. Pesic, and R. Schuch "Hollow Atom Relaxation Dynamics in Thin Metal Foils", *XXIII International Conference on Photonic, Electronic and Atomic Collisions. Stockholm University, Sweden, 23-29 July, (2003).*
- 13- Gy. Viktor, S. Atanassova, M. Bjorkhage, H. Hanafy, S. Leontein, Z. D. Pesic, and R. Schuch "Multiplet Photon Emission from Highly-Charged Pb Ions Interacting with Metal Foils", *XXIII International Conference on Photonic, Electronic and Atomic Collisions. Stockholm University, Sweden, 23-29 July, (2003).*
- 14- H. Hanafy, G. Omar, and F. Shahin, "Isonuclear Trends of Resonant Transfer Excitation for the Collision of $\text{Ar}^{(8+,11+,13+)}$ Ions with L-Shell Excitation" *First International Conference Modern Trends in Physics Research, Cairo Uni., Egypt, 4-9 April (2004). AIP, 748, 118-125, (2005).*
- 15- Hassan Hanafy "Resonant Electron Capture for Be-like Ions with K- and L- shell Excitation" *VII Radiation Physics and Protection Conference, Ismailia, Egypt, 27-30 Nov., (2004). Arab J. Nucl. Sci. Appl. , 36 , 35-43, (2005).*
- 16- Z. D. Pesic, Gy. Viktor, S. Atanassova, J. Anton, M. Bjorkhage, A. Paal, H. Hanafy and R. Schuch " Relaxation of slow highly charged ions hitting thin metallic foils, *Phys. Rev. A75 , 12903 (2007)*
- 17- M. Shaban, H. Hanafy , H. Hamdy and F. Shahin, "Optical Excitation Function of the Sr and Sr^+ resonance lines" *VIII Radiation Physics and Protection Conference, Beni Sueif- Fayoum, Egypt, 13-15 Nov., (2006). Arab J. Nucl. Sci. Appl., 40 , 405-413 , (2007).*
<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.75.012903>
- 18- H. Hanafy, G. Omar, and F. Shahin, "Resonant Transfer Excitation Cross sections for Phosphorus Ions with K-shell Excitation" *accepted for publication in World Scientific Conference Proceedings (2008).{in press}.*
- 19- H. Hanafy and F. Shahin, "Emission of x-Rays through the Recombination in the Collision of F-like Ions with Energetic Free Electrons", *Egyptian J. Solid vol. (31), no (2), 259-267, (2008).*
- 20- Z. D. Pesi, Gy. Viktor, H. Hanafy, A. Enulescu, and R. Schuch, " Two-photon coincidence studies of highly-charged ion relaxation in solids" *Eur. Phys. J. D 54.*
<http://epjd.epj.org/articles/epjd/abs/2009/10/d09199/d09199.html>
- 21- Arafa H Aly, and Hassan S. Hanafey" Polarization modes control on the transmittance characteristics of one dimensional photonic crystal", J . Comput. Theor. Nanosci., 8,1916, 2011.
<http://www.ingentaconnect.com/content/asp/jctn/2011/00000008/00000010/art00003>
- 22- Arafa H. Aly, Ehab Abdel-Rahman, Hassan S. Hanafey, " Numerical Studies on Electromagnetic Waves Properties in Metallic-Dielectric Photonic Crystal" , *Journal of Electromagnetic Analysis and Applications*, 2011, 3, 465-470.
<http://www.scirp.org/journal/CTA.aspx?paperID=8339>
- 23- Arafa H Aly, Ahmed Mehaney, and Hassan S. Hanafey, " Phononic Band Gaps in one Dimensional Mass Spring System", PIERS Proceedings 1043-1047, March 27-30, Kuala Lumpur, MALAYSIA, 2012.
<http://piers.org/piersproceedings/piers2012KualalumpurProc.php?start=200>
- 24- Zichao Li, Lotfi Sellaoui, Guilherme Luiz Dotto, Abdelmottaleb Ben Lamine, A Bonilla-Petriciolet, Hassan Hanafy, Hafedh Belmabrouk, Matias Schadeck Netto, Alessandro Erto, *Journal of Molecular Liquids, 285 (2019) 165–170* "Interpretation of the adsorption mechanism of Reactive

Black 5 and Ponceau 4R dyes on chitosan/polyamide nanofibers via advanced statistical physics model”

<https://doi.org/10.1016/j.molliq.2019.04.091>

25. Zichao Li, Hassan Hanafy, Lei Zhang, Lotfi Sellaoui, Matias Schadeck Netto, Marcos LS Oliveira, Moaaz K Seliem, Guilherme Luiz Dotto, Adrian Bonilla-Petriciolet, Qun L, *Chemical Engineering Journal*, 388, 15 May 2020, 124263
“Adsorption of congo red and methylene blue dyes on an ashitaba waste and a walnut shell-based activated carbon from aqueous solutions: Experiments, characterization and physical”
<https://doi.org/10.1016/j.cej.2020.124263>
26. Hassan Hanafy, Lotfi Sellaoui, Pascal Silas Thue, Eder C Lima, Guilherme L Dotto, Thamer Alharbi, Hamed Belmabrouk, Adrián Bonilla-Petriciolet, Abdelmottaleb Ben Lamine, *Journal of Molecular Liquids*, 299 (2020)112099
“Statistical physics modeling and interpretation of the adsorption of dye remazol black B on natural and carbonized biomasses”
<https://doi.org/10.1016/j.molliq.2019.112099>
27. H Hanafy, Z Li, L Sellaoui, A Yazidi, H Wang, EC Lima, NFGM Cimirro, ... *Environmental Science and Pollution Research*, 28, pages30714–30721 (2021) “**Theoretical interpretation of the adsorption of amoxicillin on activated carbon via physical model**”
28. Hassan Hanafy, *Journal of Molecular Liquids* 332, 115680 (2021) “**Adsorption of methylene blue and bright blue dyes on bayleaf capertree pods powder: Understanding the adsorption mechanism by a theoretical study**”
29. H Wang, Z Li, S Yahyaoui, H Hanafy, MK Seliem, A Bonilla-Petriciolet, ... *Chemical Engineering Journal* 417, 128116 (2021) “**Effective adsorption of dyes on an activated carbon prepared from carboxymethyl cellulose: Experiments, characterization and advanced modelling**”

Teaching Experience

Low Temperature Physics	PHYS 451	College of Science / Zulfi	Majmaah University
General Physics I	PHYS 201	Faculty of Science Beni-Suef	Beni-Suef University
General Physics II	PHYS 202	College of Science / Zulfi	Majmaah University
General Physics II	PHYS 202	Faculty of Science Beni-Suef	Beni-Suef University
Optics	PHYS 323	Faculty of Science Beni-Suef	Beni-Suef University
Optics	PHYS 323	College of Science / Zulfi	Majmaah University
Optics Lab.	PHYS 493	College of Science / Zulfi	Majmaah University
Modern Physics	PHYS 351	Faculty of Science Beni-Suef	Beni-Suef University
Modern Physics Lab.	PHYS 494	College of Science / Zulfi	Majmaah University

Electronic Lab.	PHYS 392	Faculty of Science Beni-Suef	Beni-Suef University
Electronic Physics	PHYS 422	Faculty of Science Beni-Suef	Beni-Suef University
Radiation Physics	PHYS 353	Faculty of Science Beni-Suef	Beni-Suef University
Wave and Vibration	PHYS 321	College of Science / Zulfi	Majmaah University
Atomic and Molecular Physics	PHYS 454	College of Science / Zulfi	Majmaah University
Atomic and Molecular Physics	Phys 454	Faculty of Science Beni-Suef	Beni-Suef University
Quantum Mechanics I	Phys 353+3522	College of Science / Zulfi	Majmaah University
Laser Physics	Phys 355	College of Science / Zulfi	Majmaah University

Conferences

Third International Conference on 'Modern Trend of Physics Research' MTPR-08 Physics Dept., Faculty of Science, Cairo University 6 – 10 April 2008

Training Experience

Training " E- Learning ", Majmaah University , Saudi Arabia

Training " The culture of E-learning" Majmaah University , Saudi Arabia

Training " The Skills of E-learning" Majmaah University , Saudi Arabia

Practical Skills

ICDL (International Computer Driving License)