

Research Lab Sheet

Lab Name	Theoretical Nuclear Physics
Academic Year	2021-2022

Basic Information	
Department	Physics
Location	Third floor
Total area (m²)	25

Lab Members				
No. of Prof.	No. of Ass. Prof.	No. of Lect.	No. of Ass. Lect. & Demonst.	No. of technicians
4	2	3	3	0

Staff members					
#	Name	Scientific degree	e-mail	Specializations	C.V
1	Mustafa Mohamed Mustafa	Professor		Theoretical nuclear	https://staffsites.sohag-univ.edu.eg/cv/47
2	Khalid Saber	Professor		Theoretical nuclear	https://staffsites.sohag-univ.edu.eg/khaled.hassaneen
3	Khalaf Gad	Professor		Theoretical nuclear	https://scholar.google.com/citations?user=ZtadhowAAAAJ
4	Eid Darwish	Professor		Theoretical nuclear	https://staffsites.sohag-univ.edu.eg/darwish
5	Mustafa Shehata	associate professor		Theoretical nuclear	https://www.researchgate.net/profile/Mustafa-Shehata
6	Emad Sultan	associate professor		Theoretical nuclear	https://www.researchgate.net/profile/Emad-Sultan
7	Mohamed Ahmed	Lecturer		Theoretical nuclear	http://staffsites.sohag-univ.edu.eg/m.zohry
8	Huda Mohamed	Lecturer		Theoretical nuclear	https://scholar.google.com/citations?user=-kucOO4AAAAJ
9	Alaa Eldeen Saber	Lecturer		Theoretical nuclear	http://staffsites.sohag-univ.edu.eg/alaa.elmeshneb
Ass. Lecturers & Demonstrators					
#	Name	Scientific degree	e-mail	Specializations	



حاصلة على شهادة الاعتماد من الهيئة القومية
لضمان جودة التعليم والاعتماد في 2012/7/12م



1	Alaa Mohammed	Master		Theoretical nuclear	http://staffsites.sohag-univ.edu.eg/a.ibrahim
2	Basma Mahmoud	Master		Theoretical nuclear	http://staffsites.sohag-univ.edu.eg/b.elyan
3	Ahmed Refaat	B.Sc.		Theoretical nuclear	http://staffsites.sohag-univ.edu.eg/ahmed2014015

Theses produced by the Lab			
M Sc Thesis			
#	Degree	Title	Approval date
1	Master	Core of Nucleon-Nucleon Interaction	1999
2	Master	The equation of state of asymmetric nuclear matter	2009
3	Master	The symmetry energy in infinite nuclear matter with modern nucleon-nucleon potentials	2010
4	Master	Elastic and inelastic scattering of protons from heavy nuclei	2017
	Master	Optical Model Analysis of Mesons Scattering	2017
Ph.D. Thesis			
1	PhD	Nuclear Structure Studies with Realistic Nucleon-Nucleon Forces	2004
2	PhD	Study of nuclear matter using three-body force at various temperatures	2015
3	PhD	The Thermal Properties of Asymmetric Nuclear Matter within the Extended Bruckner Theory Based on The Three-Body Forces	2021

Articles produced by the Lab		
#	Title	Journal information
1	Single-particle Properties of Asymmetric Nuclear Matter Based on Two- and Three-Body Forces within Brueckner Theory	Journal of Nuclear and Particle Physics 11 (2), 38-46
2	Properties of pure neutron matter at low and high densities	Pramana 95 (3), 1-13
3	Asymmetric nuclear matter and realistic potentials	Indian Journal of Physics 95 (7), 1499-1508
4	Measurement of the tensor analyzing power for the reaction	Modern Physics Letters A 36 (28), 2150199
5	Influence of rescattering effects on the helicity dependence of $\gamma \rightarrow d \rightarrow \pi NN$ near threshold and its implication to the E-asymmetry and the GDH sum rule	Chinese Journal of Physics 71, 319-332
6	Sensitivity of Polarization Observables in Reaction Near Threshold to the Choice of Elementary Amplitude and Deuteron Wave Function	Moscow University Physics Bulletin 76 (3), 136-150
7	Sensitivity of Polarization Observables in $\gamma d \rightarrow \pi^0 d$ Reaction Near Threshold to the Choice of Elementary $\gamma N \rightarrow \pi N$ Amplitude and Deuteron Wave Function	Moscow University Physics Bulletin 76 (3), 136-150
8	Deuteron Electromagnetic Form Factors and Their Sensitivity to Realistic Deuteron Wave	Int. J. New Hor. Phys. 8, No. 1, 1-9 (2021)



كلية العلوم
Faculty of Science

حاصلة على شهادة الاعتماد من الهيئة القومية
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جامعة سوهاج
University of Sohag

	Functions	
9	The Thermal Properties of Asymmetric Nuclear Matter within the Extended Brueckner–Hartree–Fock Approach	Journal of the Physical Society of Japan 86 (2), 024201
10	Single-Particle Properties of the Mirror Nuclei ^{48}Ca and ^{48}Ni from Realistic Nucleon–Nucleon Force	Journal of the Physical Society of Japan 84 (6), 064201
11	Near-threshold incoherent pion photoproduction on the deuteron with final-state interaction effects	Annals of Physics 411, 167990
12	Equation of State for Neutron Rich Matter with Self-Consistent Green Function Approach.	Nuclear Physics A793, 67-78, (2007). doi:10.1016/j.nuclphysa.2007.06.015

Lab instruments						
#	Device	quantity	Quality			
			Good	Poor	Need maintenance	malfunction
1						
2						
3						
4						

Instruments Description	
Device image	Description /use
توضع صورة للجهاز	وصف بسيط لاستخدامات الجهاز

Evaluate the fulfillment of lab to appropriateness of areas, building installations, facilities and human resources standards

Areas of assessment		Indicators	Yes	Somewhat	No
Floor area and capacity	1	Adequacy of the total capacity of the lab for the number of researcher (1).		√	

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Windows and doors	2	Availability of windows for adequate ventilations.	√		
	3	Ease of use of windows.	√		
	4	There are two exits (doors) at least (2).			√
	5	There are signs to locate directions of emergency exits	√		
Equipment	6	Appropriate temperature during the lectures (3).	√		
	7	Availability of good ventilation (4).	√		
	8	The existence of adequate lighting (4).	√		
	9	Lab is connected to the Internet	√		
	10	The existence of directions inside the Lab showing entrances and emergency exits.	√		
Security and Safety	11	Existence of firefighting equipment near the hall (5).		√	
	12	Cleanliness of the room.		√	