

Web of Science

Search

Search Results

My Tools

Search History

Marked List

[Look Up Full Text](#)


Save to EndNote online

Add to Marked List

426 of 449

Comparative study of alpha plus nucleus elastic scattering using different models

By: [Al-Ghamdi, AH](#) (Al-Ghamdi, A. H.)^[1]; [Ibraheem, AA](#) (Ibraheem, Awad A.)^[2,3]; [Farid, MEA](#) (Farid, M. El-Azab)^[4]

[View ResearcherID and ORCID](#)

INTERNATIONAL JOURNAL OF MODERN PHYSICS E-NUCLEAR PHYSICS

Volume: 24 Issue: 1

Article Number: 1550003

DOI: 10.1142/S0218301315500032

Published: JAN 2015

[View Journal Impact](#)

Abstract

The alpha (alpha) elastic scattering from different targets potential over the energy range 10-240 MeV has been analyzed in the framework of the single-folding (SF) optical model. Four targets are considered, namely, Mg-24, Si-28, S-32 and Ca-40. The SF calculations for the real central part of the nuclear optical potential are performed by folding an effective alpha-alpha interaction with the alpha-cluster distribution density in the target nucleus. The imaginary part of the optical potential is expressed in the phenomenological Woods-Saxon (WS) form. The calculated angular distributions of the elastic scattering differential cross-section using the derived semimicroscopic potentials successfully reproduce 36 sets of data all over the measured angular ranges. The obtained results confirm the validity of the alpha-cluster structure of the considered nuclei. For the sake of comparison, the same sets of data are reanalyzed using microscopic double-folded optical potentials based upon the density-dependent Jeukenne-Lejeune-Mahaux (JLM) effective nucleon-nucleon interaction.

Keywords

Author Keywords: [Optical model](#); [elastic scattering](#); [folding potential](#); [cluster model](#)

KeyWords Plus: [HARD-CORE INTERACTION](#); [DENSITY-DEPENDENCE](#); [CLUSTER STRUCTURE](#); [FOLDING MODEL](#); [POTENTIALS](#); [O-16](#); [C-12](#)

Author Information

Reprint Address: Ibraheem, AA (reprint author)

+ Al Azhar Univ, Dept Phys, Assiut Branch, Assiut 71524, Egypt.

Addresses:

+ [1] King Abdulaziz Univ, Fac Sci, Dept Phys, Jeddah, Saudi Arabia

+ [2] Al Azhar Univ, Dept Phys, Assiut Branch, Assiut 71524, Egypt

+ [3] King Khalid Univ, Dept Phys, Abha, Saudi Arabia

+ [4] Assiut Univ, Dept Phys, Assiut 71516, Egypt

E-mail Addresses: Awad_ah_eb@hotmail.com

Publisher

WORLD SCIENTIFIC PUBL CO PTE LTD, 5 TOH TUCK LINK, SINGAPORE 596224, SINGAPORE

Categories / Classification

Research Areas: Physics

Web of Science Categories: Physics, Nuclear; Physics, Particles & Fields

Document Information

Document Type: Article

Language: English

Citation Network

1 Times Cited

28 Cited References

[View Related Records](#)



Create Citation Alert

(data from Web of Science Core Collection)

All Times Cited Counts

1 in All Databases

1 in Web of Science Core Collection

0 in BIOSIS Citation Index

0 in Chinese Science Citation Database

0 in Data Citation Index

0 in Russian Science Citation Index

0 in SciELO Citation Index

Usage Count

Last 180 Days: 0

Since 2013: 2

[Learn more](#)

Most Recent Citation

Ibraheem, Awad A. [Analysis of He-4+Ca-40 and He-4+Ti-44 scattering using different optical model potentials](#). PHYSICS OF ATOMIC NUCLEI, SEP 2016.

[View All](#)

This record is from:

Web of Science Core Collection
- Science Citation Index Expanded

Suggest a correction

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

Accession Number: WOS:000349411300004

ISSN: 0218-3013

eISSN: 1793-6608

Journal Information

Table of Contents: [Current Contents Connect](#)

Impact Factor: [Journal Citation Reports](#)

Other Information

IDS Number: CB1TQ

Cited References in Web of Science Core Collection: **28**

Times Cited in Web of Science Core Collection: **1**

