

The ALICE/ASH code can be applied for the calculation of excitation functions, energy and angular distribution of secondary particles in nuclear reactions induced by nucleons and nuclei with the ...

The state-of-the-art research work has revealed that CD-based or modified electrodes exhibit profound improvement in all key functions, such as coulombic efficiency, cycling life, enlarging ...

Summary The excitation functions of the $^{109}\text{Ag}(a, 2n)$, $^{107}\text{Ag}(a, 2n)$, $^{109}\text{Ag}(a, 4n)$, $^{165}\text{Ho}(a, xn)$; $x=1, \dots, 4$ reactions were studied up to 75 MeV, using the stacked foil activation technique and Ge(Li) gamma-ray spectroscopy method. Of these, four reactions were studied for the first time using high-resolution Ge(Li)/HPGe detector, and ...

2022 International Conference on Energy Storage Technology and Power Systems (ESPS 2022), February 25-27, 2022, Guilin, China ... Under the same slope function excitation, the energy efficiency of the RC series circuit is almost the same as that of the RLC series circuit, while the charging time of the second-order RLC series circuit is ...

Abstract Present work is an attempt to exclusively measure and study the excitation functions (EFs) of evaporation residues populated in ^{12}C and ^{159}Tb system at energies $\sim 4.5\text{-}6.5$ MeV/nucleon. The stacked foil activation technique followed by offline g-ray spectroscopy with a high-resolution HPGe detector has been employed. The experimentally ...

K-ions storage system play an important role in the up-coming clean-energy era. However, its performance is severely restricted by the difficulties in the insertion and diffusion of large-sized K-ions. In this work, a rare-earth ion induced pre-excitation strategy is proposed to significantly improve the K-ion storage performance of MoSe-based anode materials.

The excitation functions of $^{63}\text{Cu}(p, n)^{63}\text{Zn}$, $^{65}\text{Cu}(p, n)^{65}\text{Zn}$, $^{66}\text{Zn}(p, n)^{66}\text{Ga}$, $^{67}\text{Zn}(p, n)^{67}\text{Ga}$ and $^{68}\text{Zn}(p, n)^{68}\text{Ga}$ reactions were computed using the TALYS-1.95 computer code from reaction threshold to 40 MeV energy to yield medically important radioisotopes. The influence of varying level density and effective imaginary potential on reaction cross-section ...

In the static stability analysis of the grid-connected photovoltaic (PV) generation and energy storage (ES) system, the grid-side is often simplified using an infinite busbar equivalent, which streamlines the analysis but neglects the dynamic characteristics of the grid, leading to certain inaccuracies in the results. Furthermore, the control parameter design does ...

A novel and general approach is proposed that consists of three matching principles, which enables one to

assign a best set of energy storage elements to a DC/DC converter to meet both desirable ...

The energy harvesting performance of the harvester prototype, including its resonance characteristics, open-circuit output voltage-frequency response and amplitude characteristic under base excitation, influence of external resistance, energy harvesting performance under free excitation, the function of pre-magnetization and so on was studied ...

Our research findings suggest that these lead-free relaxor-ferroelectric heterostructures might be the potential candidates to harvest electrical energy from waste low ...

In this paper, we demonstrate a long pulse XeCl excimer laser using a novel, simple and easy to assemble auto pre-pulse excitation circuit. The auto pre-pulse excitation scheme involves a single high voltage switch for driving the UV pre-ionizer, pulser and sustainer which are isolated by saturable inductors made of ferrite cores without any additional circuit. ...

It can be seen from Fig. 3, that experimental excitation function and calculated excitation function (indicated by dotted line) show peaks at about 13.9 MeV and 14.5 MeV neutron energy. The energy of incident particle in the neighborhood of certain definite energy values are referred to as resonance energies and the compound nuclei of these ...

In this paper, the simulation is carried out in PSS/E, and the excitation model and energy storage model are established based on the user-defined function of PSS/E. The particle swarm optimization algorithm is used to optimize the parameters of the excitation system and the energy storage control system, and the performance difference of peak ...

Electronically excited molecules and materials can store energy (1, 2), generate power (3, 4), or emit light (1, 4). For homogeneous materials such as bulk crystalline semiconductors, the ...

Rechargeable sodium-based energy storage cells (sodium-ion batteries, sodium-based dual-ion batteries and sodium-ion capacitors) are currently enjoying enormous attention from the ...

Here, the authors optimize TENG and switch configurations to improve energy conversion efficiency and design a TENG-based power supply with energy storage and output regulation...

The excitation functions for production of radionuclides ^{123}I and ^{124}I , which are important for SPECT and PET, were investigated via alpha induced reactions. The calculations by EXIFON modula code ...

Excitation energy transfer (EET) is an essential process, in which a chromophore (donor, D) absorbs light to generate an excited state, subsequently transferring the excitation energy to another molecule (acceptor, A) [1,2,3] the energy transfer process, the donor and acceptor can exchange energy by Fo`rster resonance energy transfer (FRET) through ...

Under ultraviolet excitation, the electrons absorb energy and are excited to a high energy level, and the excited electrons relax to the self-trapped states and the lowest energy excited state ($4T_1$) of Mn^{2+} ion, respectively, thus achieving STEs emission and produce orange emission (593 nm) by $4T_1 - 6A_1$ transition.

EET is seen in many natural and artificial systems. For example, both organic light-emitting diodes and photovoltaics require exciton migration in the devices. 1-10 Plants and photosynthetic bacteria use the antenna system to capture solar energy and transfer the excitation to the reaction center. 11-13 In case of too much light absorption, one source of the ...

Pre-lithiation is considered as a highly appealing technique to compensate for active lithium losses and, therefore, to increase the practical energy density. Various pre-lithiation ...

The role of pumped storage in global energy structure transformation is becoming increasingly prominent. This article introduces a flexible excitation system based on fully controlled device converters into pumped storage units (PSUs). It can address the issues of insufficient excitation capacity and limited stability associated with traditional thyristor ...

In this way, APFR can be defined as follows: (25) $APFR = P_{post} - P_{pre}$ (26) $P_{pre} = A \cdot v \cdot g(S \cdot P(t))$ (t_{pre-16} < t < t_{pre-2}) (27) $P_{post} = A \cdot v \cdot g(S \cdot P(t))$ ($t_{post+20}$ < t < $t_{post+52}$) where P_{pre} is the average of the output power during the pre-perturbation period from -16 s to -2 s before a frequency measurable event (FME), and P_{post} ...

A DC excitation pre-excitation method based on flux linkage compensation bias decoupling is adopted. Based on the theory of flux compensation and deviation decoupling, the

The calculated excitation functions used in the different level density models in the two-component exciton model are close to each other and are in good agreement with the experimental data [53,57,58] up to ~ 12 MeV, except for one set of data by Yadav et al. [] at 9 MeV (in Fig. 5). Also, the excitation functions of the $^{58}Ni(a,p)$ reaction to the production of ^{61}Ni ...

(1) Background: The exact anatomic localization of the accessory pathway (AP) in patients with Wolff-Parkinson-White (WPW) syndrome still relies on an invasive electrophysiologic study, which has its own inherent risks. Determining the AP localization using a 12-lead ECG circumvents this risk but is of limited diagnostic accuracy. We developed and ...

The excitation energy of successive daughter nuclei also gets depleted after each neutron is emitted. ... down of the FRLDM fission barrier and thereby increasing the fission width was found necessary in order to fit the ER excitation functions. Pre-scission neutron multiplicity for the reactions $^{19}F + ^{194,196,198}Pt$ was also measured and ...

In this study, excitation functions of the charged particle induced nuclear reactions of $^9\text{Be}(p,a)$, $^9\text{Be}(p,n)$, $^9\text{Be}(a,n)$, $^9\text{Be}(a,a)$ and $^9\text{Be}(a,p)$ have been investigated in the incident energy range from 1 to 50 MeV by using PCROSS code. Full exciton and cascade exciton models for pre-equilibrium calculations and Weisskopf-Ewing model for ...

Energy harvesting consists of converting ambient energy sources into electrical energy, accumulating and storing it for later use [8]. This process has emerged as a promising technique for supplying sensors and sensor networks, limiting the use of natural resources while providing a reliable long-term energy source, especially compared to batteries, which suffer ...

Excitation functions of the $T_{nat}(p,x)$, $S_{43,47}(p,x)$, $V_{48}(p,x)$ and $C_{nat}(p,x)$, ^{64}Cu , $Z_{62,65}(n)$ reactions were measured in the energy range of 8.8-18.4 MeV by using the stacked-foil activation technique and off-line gamma spectroscopy. The irradiation was carried out at the superconducting linac of the Institute of Modern Physics, Chinese Academy of Sciences.

Experimental data is taken from EXFOR [22] Fig. 4 Excitation Function of $^9\text{Be}(a,a)$ and (a,p) reactions incident proton energy 1-50 MeV 123 J Fusion Energy In present study, we calculated the (p,a) reaction crosssections of ^9Be by using new evaluated semi-empirical formulas at 17.6 MeV energy using the formulae developed by Tel et al. [7].

This mini-review summarizes our current theoretical knowledge about excitation energy transfer in pigment-protein complexes. The challenge for theory lies in the complexity of these systems and in the fact that the pigment-pigment and the pigment-protein interactions are of equal magnitude. The first part of this review contains an introduction to the theory of light ...

Excitation function (a.k.a. yield curve) is a term used in nuclear physics to describe a graphical plot of the yield of a radionuclide or reaction channel as a function of the bombarding projectile energy or the calculated excitation energy of the compound nucleus. [1] The yield is the measured intensity of a particular transition. [2]

The ALICE/ASH code is an advanced and modified version of the ALICE code. The modifications concern the implementation in the code of models describing the pre-compound composite particle emission, fast g-emission, different approaches for the nuclear level density calculation and the model for the fission fragment yield calculation. The ALICE/ASH code can be applied ...

Constructing low-cost and long-cycle-life electrochemical energy storage devices is currently the key for large-scale application of clean and safe energy [1], [2], [3]. The scarcity of lithium ore and the continued pursuit of efficient energy has driven new-generation clean energy with other carriers [4], [5], [6], such as Na^+ , K^+ , Zn^{2+} , Mg^{2+} , Ca^{2+} , and Al^{3+} .

Luminescence spectroscopy. Luminescence emission and excitation as well as persistent luminescence

measurements were taken to obtain quantitative information about the processes involved in the energy storage and release of the $\text{Sr}_3\text{MgSi}_2\text{O}_8:\text{Eu}^{2+},\text{Dy}^{3+}$ material. This information was used together with that from TL to construct the mechanism for ...

In this work, a rare-earth ion induced pre-excitation strategy is proposed to significantly improve the K-ion storage performance of MoSe-based anode materials. A series of rare-earth ions (= ...

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