Name : Dizi Rauf Rage Daniel

Institute: African Studies

Dept.: Economics and Political Science

Degree: PhD

Title of Thesis: Food Aid and Its Impact on African Development with Special Reference to Southern Africa Since 1980.

Abstract:

The aims of this study are: Identifying the history of food aid in Africa since 1980 including changes in the quantity and the quality of food aid deliveries and the geographical distribution of recipients and donors, analyzing views advocating using food aid and those against it as well as its cost effectiveness as a development instrument, and proposing a new food aid regime for the future which depends on future food aid needs and factors influcing future supplies.

To achieve the aims of this study, The researcher used the evaluation of the effectiveness of food aid on the production and price of food commodities, food security, the status of nutrition and poverty.

Key words:

Food Aid, Food Assistance, Food Policy, Food Security, Southern Africa, Africa South of the Sahara.

Name: Aly Mahrous Aly Ahmed

Institute: African Studies

Dept.: Natural Resources

Degree: MSc

Title of Thesis: Some Factors Affecting Cattle Mastitis in Egypt and Tunisia Applied Study on Milk Production.

Abstract:

The current study was carried out in some Egyptian dairy farms with different herd health management and sanitation practices during the period from December 2004 to December 2005.The study highlighted the importance of identifying the role of some environmental pathogens (*Escherichia coli* and *Salmonella spp* , that have human health importance and management of the dairy animals environment) in the epidemiology of subclinical mastitis in Egypt, with comparable study conducted in Tunisia during the period between June 2000 and September 2001.

Key words:

Environmental Pathogen, Sub Clinical Mastitis.

Name: Mohammed Saeed Abbas Gab Allah

Institute: African Studies

Dept.: Natural Resources

Degree: MSc

Title of Thesis: Environmental Studies and Chemicals on Some Common Pasture Plants in Egypt and Libya

Abstract:

The present investigation was carried out in Wadi El-Ramla, coastal sand dunes and salt marshes in North West coast of Egypt during spring 2005 and 2006 to assessment the relationship between some common range plants and environmental factors in terms of botanical structure, productivity, nutritive value and their ability to sustain and renew themselves under different habitats.

Results showed that ninety eight plant species belonging to thirty families. The plant species were divided into sixty one perennials (62%) and thirty seven annuals (38%). According to palatability fifty nine were palatable (60%) and thirty nine were un-palatable (40%).The richest habitat in the number of species was Wadi El-Ramla (fifty five species) followed by coastal sand dunes (twenty four species) and the poorest habitat was salt marshes (nineteen species). The studied characteristics of range plants were frequency, abundance, plant density, cover percentage, importance value and productivity. Nutritive value of range plants evaluated by determining crude protein, crude fiber, ash, ether extract, and nitrogen free extract percentages. All characteristics showed differences between habitats.

Key words:

Frequency, Abundance, Density, Cover, Importance Value, Fresh Yield, Dry Yield, CP, EE, NFE, CF, Ash, Wadi El-Ramla, Coastal Sand Dunes and Salt Marshes.

Name: Jala Mahmoud El-Azab

The National Institute of Laser Enhancement

Dept.: Eng. Applications Sci. of laser

Degree: PhD

Title of Thesis: A Study of Some Aspects of The Chaotic Behavior of Semiconductor Laser Diodes

Abstract:

Security is a crucial issue in optical communication systems. Chaotic communication, in which the encryption is held at the physical layer, provides a high security level. It requires a pair of synchronized chaotic laser diodes that can be used as a transmitter-receiver pair. Our main purpose, in this work, is to study the chaotic behavior of semiconductor laser diodes and the different synchronization schemes.

Some methods used to generate chaos using a laser diode, such as optical feedback, external optical injection and optoelectronic feedback, are first discussed in detail. To adequately describe the temporal behavior (dynamics) of a chaotic laser diode, the amplitude and phase of the laser electric field together with the density of charge carriers inside the laser cavity must be obtained. Thus we developed a numerical algorithm to simulate these dynamics, which depend on the method of chaos generation. The type of the route to chaos when a laser diode is subjected to optical feedback depends on the feedback parameters (strength and delay) as well as the injection current. A detailed study of these different routes to chaos was carried out resulting in a 3D phase diagram. The effects of external optical injection and optoelectronic feedback on the dynamics of the laser diode were then overviewed.

To study the synchronization process between two similar chaotic laser diodes, we extended the algorithm to describe a transmitter-receiver pair. According to the method of chaos generation and coupling parameters (which include frequency detuning and injection strength), the different synchronization schemes were presented. The synchronization quality strongly depends on the parameter mismatch between the transmitter-receiver pair. Using a synchronized chaotic laser diode pair, a message can

be embedded in the chaotic carrier and recovered at the receiver end using different encryption techniques. With the purpose of maintaining robust synchronization between the transmitter and receiver laser diodes, we developed a scheme that reduces the effect of parameter mismatch. Then, we studied the synchronization recovery time after desynchronization burst that can occur in a communication link and its dependence on the parameter mismatch and the intrinsic parameters of the laser diode pairs.

Name: Amal Abd El-Fattah Omer

The National Institute of Laser Enhancement

Dept.: Environmental Applications

Degree: MSc

Title of Thesis: Enhancement of the Performance of (LIBS) Technique Adopting Double Pulse Configuration for Silicon Analysis.

Abstract:

A comparative study between single and double pulse-laser induced breakdown spectroscopy (LIBS) was performed on n-type silicon (111) target. A new mobile double pulse Nd: YAG laser at 1064 nm was used throughout the measurements. The experiment was carried out in two ambient gases; air and argon with different pressures of 0.7, 470 and 1000 hPa in air and 470 and 1000 hPa in argon. The ambient gas interacts with the laser beam and the plume, several mechanisms are involved in these interactions, such as, plasma shielding, shock wave production and plasma expansion. Plasma shielding effect reduces laser–material coupling efficiency. However, the induced shock waves increase the coupling efficiency in case of double pulse LIBS. The spectral emission of lines emitted from both the silicon target and that from the ambient gas atoms surrounding the target have been analyzed. In single pulse, at the atmospheric pressures (1000 hPa) the emission intensities of lines emitted from the silicon target have lower values than that obtained in low pressure (0.7 hPa) and from the ambient gas (N I and Ar I lines). It has been found that in case of double pulse LIBS, the emission intensities of atomic and ionic lines are strongly enhanced at higher pressures. A discussion of local thermodynamic equilibrium state is presented. Using Stark broadening of the line profiles of atomic silicon, the electron number densities for single and double pulses are calculated ($N_e \approx 10^{17}$ cm^{-3}). Plasma excitation temperature ($T_e \approx 5000$-7000 K) and ionization temperature (9000-13000 K) are determined from Boltzmann plot and Saha-Boltzmann equation, respectively. The double-pulse laser induced plasma has been studied at different interpulse delay times: 1, 2, 5, 10, 15, 25 and 50 μs. The influence of the interpulse delay time on the signal enhancement of the atomic and ionic lines and the plasma parameters is investigated. Crater depth measurements are estimated via optical microscopy. The results indicated that the crater depth, the atomic and ionic line intensities increase at short interpulse delay time (1-5 μs).