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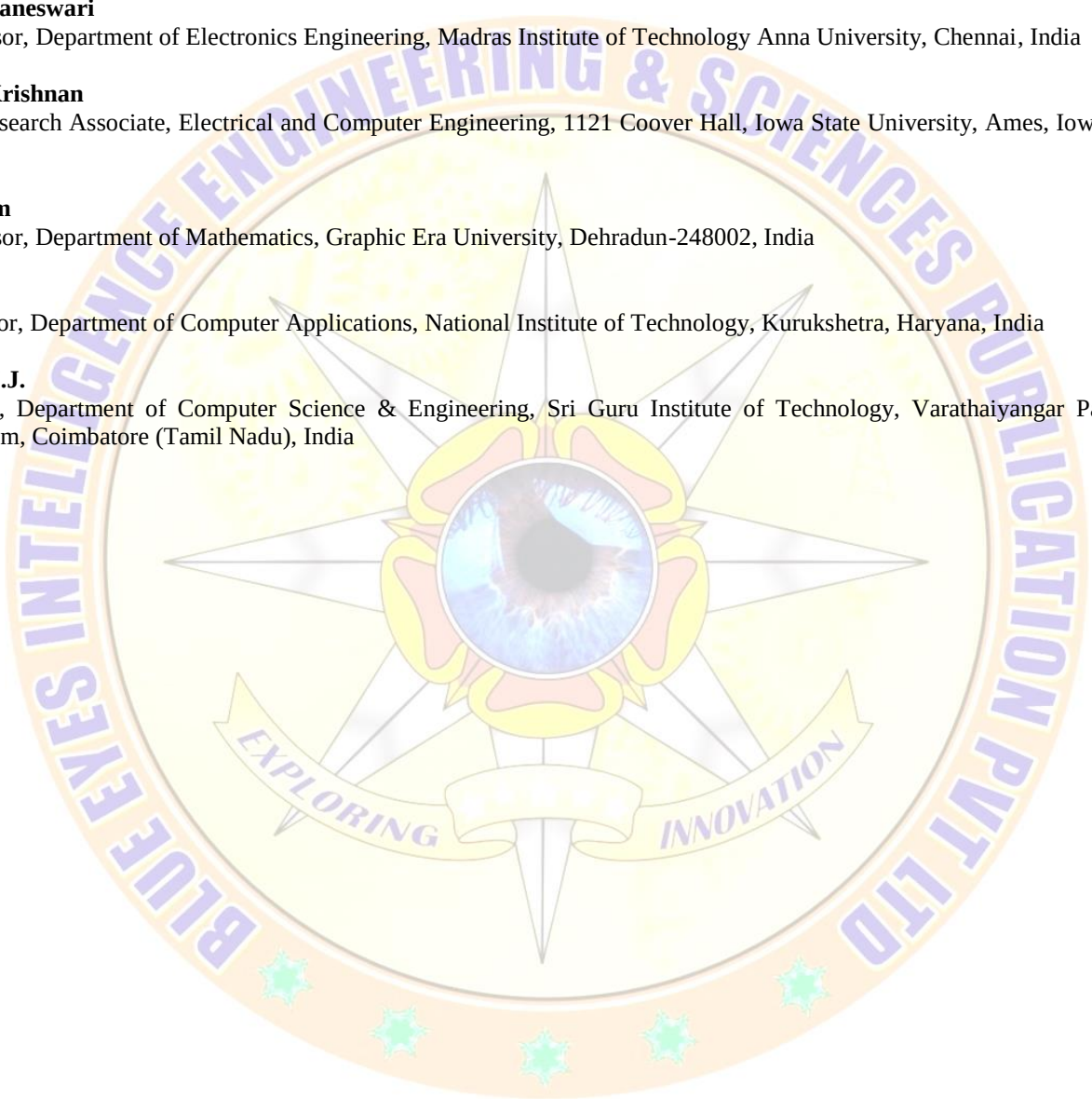

1.

Authors: Amrik Singh, Yoginder Talwar, Ajay Prasad

Paper Title: Highly Secure and Fast AES Algorithm Implementation on FPGA with 256 bit key size

Abstract: The Block cipher AES is a symmetric key cryptographic standard used for transferring block of data in secure manner for server based communication networks, SCADA systems for Oil refinery, Oil and Gas Pipe Lines, and Smart Grids based applications. High level security of data transfer needs long key size i.e. 256 bits, analysis of certain ideas of round key expansion mechanisms from given key data are discussed and the same is implemented in FPGA configuration with 128 bits and 256 bits key size to achieve low latency, high throughput with high security.

Keywords: Advance Encryption Standard, encryption, decryption, FPGA, VHDL, Virtex-5.

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2.

Authors: A.E.Al-Salami

Paper Title: Quantifying Physical Parameters of Quaternary Glass with Composition Tellurium- Niobium - Zinc-Lithium Oxide

Abstract: In the present work the tellurite glass a function of alkali metals as network intermediate with composition 85TeO2/ 5Nb2O5/ 5ZnO/ 5Li2O in mol% were been prepared. These glasses contain Li2O can be promising used in optical devices because it has advantage optical properties compared with other tellurite glasses. The physical parameters of these glass studied with respect to values of density, □, molar volume, Vm, linear refractive indices, n0, nonlinear refractive index, n2, electronic polarizability, □m, molar refraction, Rm, metallization criterion, M (n0), and third order non-linear optical susceptibility, □(3),. The Sellmeier gap energy, Es, and dispersion energy, Ed, were calculated besides the theoretical third order of nonlinear optical susceptibility, □(3), calculated by used Lines model. Measure the thermal stability and the glass transition temperature by differential thermal analysis (Shimadzu DTA 50) which can be determine the glass transition temperature, Tg, onset crystallization temperature, Tc, and melting temperature, Tm. These glass have values as; □= 5.231 gm□cm-3, Vm= 28.75 cm-3, n0= 2.2228 at 435.84 nm, □m= 6.478Å3 and Rm=16.024 mol-1□cm3 at 435.84nm. and Es = 6.54 eV, Ed= 20.65 eV.

Keywords: Oxide glass; linear refractive index; dispersion energy.

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3.

Authors: **Javed Ali**

Paper Title: **Superiority of Agile over Software Models**

Abstract: The Software Development Life Cycle (SDLC) is a structure imposed on the development of software product and also known as Software Development Processes. It is often considered as a subset of a system development life cycle. There are numerous SDLC models widely used for developing software. The SDLC model gives a theoretical guide line regarding development of the software. The every SDLC has its own benefits and drawbacks according to that we decide which models should be implemented under which conditions. The concept of system lifecycle models came into existence that emphasized on the need to follow some structured approach towards building new or improved system. In this paper, the comparative study made on standard life cycle models namely rapid application development, Agile Development Model, V-shaped model, spiral model, incremental model and waterfall model, prototype.

Keywords: Software Development, Life Cycle, Model, Agile Development, Extreme Programming, Dynamic, Adaptive.

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4.

Authors: **Alyaseh Nagi, Issa Ali, Sedat Nazlibilek**

Paper Title: **Decentralized Control Based On Active Disturbance Rejection Controller: An Application Quadruple Tank System**

Abstract: This paper presents Decentralized Control for the Quadruple Tank System (QTS) Based on Active Disturbance Rejection Controller (ADRC). The most remarkable advantages of the proposed approach are that it is not depend on the accuracy of mathematical model of the plant along with its simple structure and the ability of strong disturbance rejection. Often, there are some difficulties in designing of suitable controller for Quadruple Tank System due to the interaction between the inputs and outputs of this system. With the proposed control method, the cross coupling within the system treated as a disturbance, which is estimated using extended state observer (ESO) and then actively rejected. The Quadruple Tank System is represented using set of nonlinear differential equations

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and the ADRC controller is applied directly on the nonlinear model of the system. The effectiveness of the proposed approach is validated via simulation results obtained under MATLAB environment. The results show that the ADRC gives better results compared to nonlinear optimal control strategy.

Keywords: Active Disturbance Rejection Controller Decentralized Control, Quadruple Tank System, The Nonlinear Coupling.

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