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**NAAC SSR Cycle IV (2015-2020)** 

3.4. PUBLICATIONS

3.4.3. RESEARCH PAPER IN JOURNALS

**EVIDENCES FOR PUBLICATION IN JOURNALS (with DOI Number)** 

2018-2019



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### **Publication in Journals**

2018-2019

S.No	Name of the author/s	Department of the teacher	Title of paper	Name of journal	Is it listed inUGC CARE/Scop us/Web of Science/oth er, mention	DOI
1.	Mrs.S.Rengeswari	Commerce	Buying Behaviour of Consumers towards Organic Food in Sivakasi	Journal of Emerging Technology and Innovative Research		DOI:10.60 84/m9.jetir. JETIR1712 059
2.	Dr.S.Pavithra	Mathematics	Mathematical model of coupled transcription, translationand degradation	International Journal of Mathematical Archive	UGC APPROVE D, Index Copernicus	Nil
3.	Dr.S.Siva Devi	Physics	Bio materials for the construction of capacitors	International Journal of Basic and Applied Research	Index Copernicus , UGC Approved, Thomson Reuteurs	Nil
4.	Dr.K.P.Radha	Physics	Morphological and Electrical Studies Of Plasticized Biopolymer Electrolytes Based On Potato Starch: NH <sub>4</sub> Cl	International Journal of ChemTech Research	Index Copernicus , DOAJ	http://dx.do i.org/10.20 902/JJCTR. 2018.1106 16
5.	Dr.B.Sivasankari	Physics	Nucleation Kinetics And Spectroscopic Studies Of Urea L- Malic Acid (Ulma) Single Crystals	Journal of Applied Science and Computation s	UGC Approved, Thomsan Reuteurs	Nil
6.	Dr.S.Selvalakshmi	Physics	Characterization of biodegradable solid polymer electrolyte system based on agar-NH4Br and its comparison with NH <sub>4</sub> I	Journal of Solid State Electrochemi stry	UGC- CARE List, Scopus	https://doi. org/10.100 7/s10008- 019-04262- 0

7.	Mrs.M.Nithya	Physics	Development of Nonlinear Optical (NLO) Crystal L- Phenylalanine Doped Ammonium Dihydrogen Ortho Phosphate (ADOP)	Journal of Emerging Technologies and Innovative Research	UGC Approved	Nil
8.	Dr.P.R.Kavitha rani	Chemistry	Single crystal XRD, DFT investigations and molecular docking study of 2- ((1,5-dimethyl-3- oxo-2-phenyl-2,3- dihydro-1H-pyrazol- 4- yl)amino)naphthalen e-1,4-dione as a potential anti- cancer lead molecule	Computation al Biology and Chemistry	Scopus, UGC-Care List	22
9.	Dr.J.Vinnarasi	Chemistry	HPTLC Fingerprinting Analysis of Tannin Profile on Canthium coromandelicum and Flueggea leucopyrus willd.	Research Journal of Pharmacy and Technology	Scopus, UGC-Care List	http://dx.do i.org/10.59 58/0974- 360X.2018 .00975.7
10.	Mrs.J.Porkodi	Chemistry	In silico and in vitro studies of transition metal complexes derived from curcumin – isoniazid Schiff base	Journal of Biomolecular structure and dynamics – Taylor and Francis	Thomson Reuters Science Citation Index (and BIOSIS and WoS), Scopus	Nil
11.	Mrs.J.Porkodi	Chemistry	Synthesis, characterization, ADMET, in vitro and in vivo studies of mixed ligand metal complexes from a curcumin Schiff base and lawsone	Nucleosides, Nucleotides & Nucleic Acids, Taylor and Franchis	Scopus	Nil
12.	Mrs.J.Porkodi	Chemistry	Biological evaluation, molecular docking and DNA interaction studies of coordination	Nucleosides, Nucleotides & Nucleic Acids, Taylor and Franchis	Scopus	Nil

			compounds gleaned from a pyrazolone incorporated ligand			
13.	Dr.M.Karthigaisel vi	Computer Science	Recognition of Bangla Script Characters – A Comparative Study	Journal of Advanced Research in Dynamical and Control Systems	Scopus	Nil
14.	Dr.S.Radha	Microbiology	Effect of probiotic supplemented feed on growth performance of molly fish (Poecilia sphenops) in Recirculating aquaculture system	The Pharma Innovations	Index Copernicus Internation al	Nil
15.	Mrs.Vandhana	Computer Applications	A Comparative Study on Machine Learning with Ensemble Learning for Predicting Students" Academic Performance In Educational Data Mining	International Journal of Research in Advent Technology	Publons, Web of Science	Nil
16.	Dr.M.Yasmin	Information Resource Center	Knowledge Of Information Literacy Skills Among The Women Students In Rural Area At Viruthunagar District	PARIPEX - Indian Journal Of Research	UGC CARE B 47432	www.dol.o rg/10.3610 6/paripex
17.	Dr.M.Yasmin	Information Resource Center	Scientometric Portrait of Prof.Kasi.Pitchuman i: An organic chemistry catalyst	Library Philosophy and Practice	Scopus	Nil
18.	Dr.M.Yasmin	Information Resource Center	The Scientometric Assessment of Publications During 2008- 2018 By Madurai Kamaraj University, Tamilnadu: Study based On Web of Science Database	Library Progress	UGC CARE	Nil

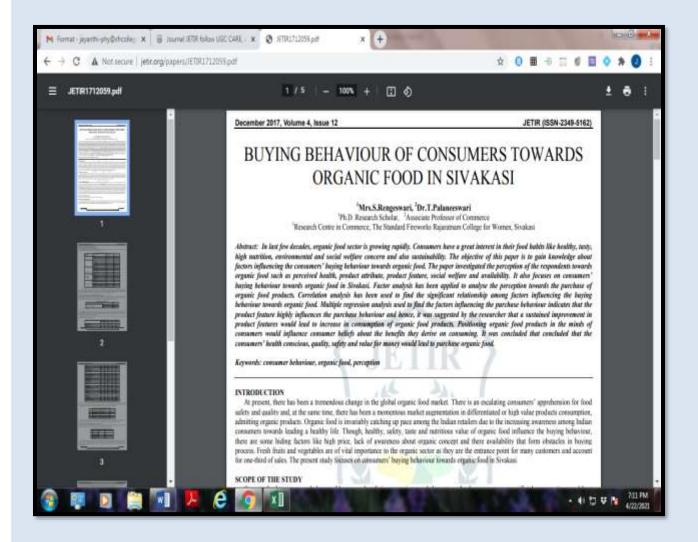


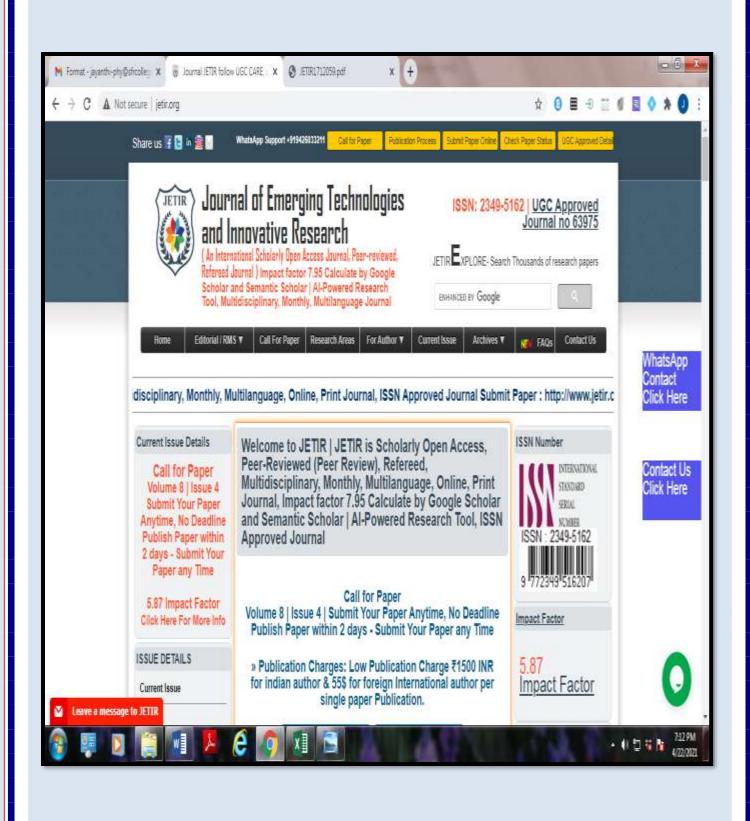
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Name of the Author : Mrs. R. Rengeswari

Title of the Paper : Buying Behaviour of Consumers towards Organic

Food in Sivakasi







(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC, College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.S.Pavithra

Title of the Paper : Mathematical model of coupled transcription,

translationand degradation

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### MATHEMATICAL MODEL OF COUPLED TRANSCRIPTION, TRANSLATION AND DEGRADATION

S. PAVITHRA¹ AND L. RAJENDRAN2.\*

<sup>1</sup>Department of Mathematics, The Standard Fireworks Rajarathanam College, Sivakasi-626123, Viruthunagar, Tamilnadu, India.

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(Received On: 09-05-18; Revised & Accepted On: 10-06-18)

#### ABSTRACT

Synthesis of proteins is one of the most fundamental biological processes, which consumes a significant amount of cellular resources. Despite many efforts to produce detailed mechanistic mathematical models of translation, no basic and simple kinetic model of mRNA lifecycle (transcription, translation and degradation) exists. We present the approximate analytical solution the nonlinear differential equations that describe coupled transcription, translation and degradation. The simple and closed analytical expressions for the amount of mRNA with translation initiation site not occupied by assembling ribosome, mRNA with translation initiation site occupied by assembling ribosome, ribosomes sitting on mRNA synthesizing proteins, proteins have been derived by using homotopy perturbation method for all values of parameter. These results are compared with simulation results and are found to be in good agreement. The obtained results are valid for the whole solution domain.

Keywords: Mathematical modeling, Analytical solutions, Non-linear equation, Transcription, Translation and Degradation.

#### 1. INTRODUCTION

Production of proteins is one of the most fundamental cellular processes, taking up to 75% of cellular resources in terms of chemical energy. In simple microbes [1]. The translation – transcription process with the description of the most basic "elementary" processes consists in:

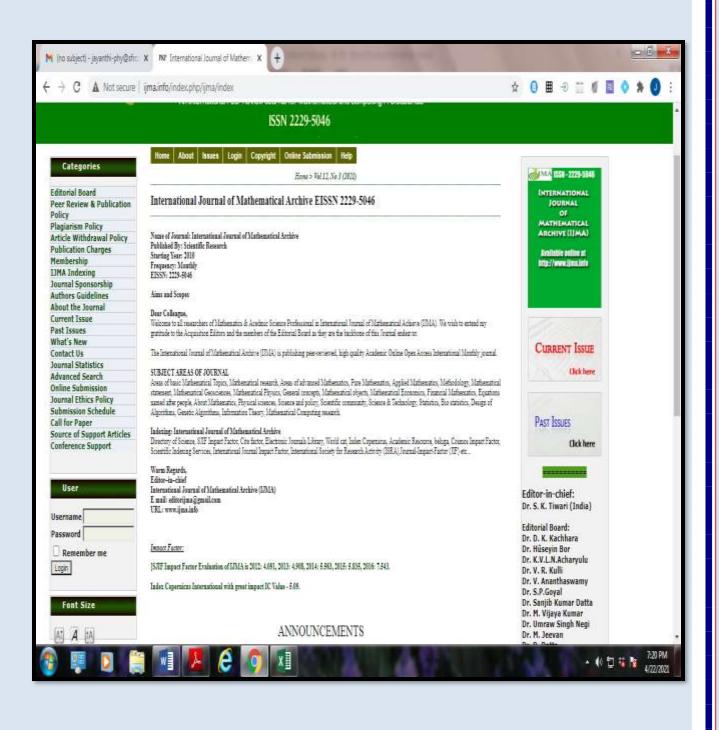
production of mRNA molecules, ii) initiation of these molecules by circularization with help of initiation factors, iii) initiation of translation, recruiting the small ribosomal subunit iv) assembly of full ribosomes v) clongation, i.e. movement of ribosomes along mRNA with production of protein vi) termination of translation vii) degradation of mRNA molecules viii) degradation of proteins

Certain complexity in the mathematical formulation of this process arises when one tries to take into account the phenomenon of polysome [2], when several ribosomes are producing peptides on a single mRNA at the same time. This leads to multiplicity of possible states of mRNA with various numbers of ribosomes and potentially different dynamics, interaction between ribosomes and other difficulties. The process of translation is a subject of mathematical modeling since long time ago [3]. Recent review of existing mathematical model are described in [4]. Nevertheless, no basic and simple kinetic description of the process involving transcription, translation and degradation was suggested until so far.

In the following we start with a 1) detailed mechanistic description of the translation process with explicit representation of every state of translated mRNA, followed by 2) deriving the simplest and basic kinetic model of coupled transcription, translation and degradation, and 3) extending this model in order to take into account various effects.

Corresponding Author: L. Rajendran<sup>2,\*</sup>, <sup>2</sup>Department of Mathematics, Amet, Deemed to be university, Chennai-6031125, Tamilnadu, India.

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: Dr.S.Siva Devi Name of the Author

Title of the Paper : Bio materials for the construction of capacitors



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#### Bio materials for the construction of capacitors

S.Siva Devi

Associate Professor

Department of Physics, The Standard Fireworks Rajaratnam College for Women, Sivakasi, Tamil nadu-626123, India

Recently, research is going on in every field to use biodegradable and ecofriendly materials in different applications. In the present study, the use of leaves of different botanical families, in the construction of capacitors which are used in all the electronic devices including biometric systems is analyzed. Dielectric constant is an essential property of dielectric material which is used in capacitors and hence its determination is very important. The dielectric constant of different materials is studied using capacitance measurement instrument. This instrument is first calibrated and then the calibration graph is used in the determination of capacitance of capacitor constructed with the given material as dielectric medium. It has been observed that green leaves behaved as dielectric natorials and the dielectric constant for those materials are calculated.

Key words: Dielectric, capacitance, bio material.

#### 1. Introduction

The nature of material plays a significant role in determining its response in an electric field. The phenomena related to electrostatic fields in materials are discussed using macroscopic model of matter. A dielectric constant of any material is a measure of how easily charges are polarized in a material under the influence of an applied electric field. The dielectric constant of a material provides a measure of its effect on a capacitor. It is the ratio of the capacitance of a capacitor containing the dielectric to that of an identical but empty capacitor.

An alternative definition of the dielectric constant relates to the permittivity of the material. Permittivity is a quantity that describes the effect of a material on an electric field: the higher the permittivity, the more the material tends to reduce any field set up in it. Since the dielectric material reduces the field by becoming polarized, an entirely equivalent definition is that the permittivity expresses the ability of a material to polarize in response to an applied field. The dielectric constant (sometimes called the 'relative permittivity') is the ratio of the permittivity of the dielectric to the permittivity of vacuum, so that, the greater the polarization developed by a material in an applied field of given strength, the greater the dielectric constant will be.

Dielectric constant is an essential property of dielectric materials hence its determination is very important. A major use of dielectrics is in fabricating capacitors. Capacitors have many uses

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Name of the Author : Dr. K.P. Radha

Title of the Paper : Morphological and Electrical Studies Of Plasticized

**Biopolymer Electrolytes Based On Potato Starch:** 

NH<sub>4</sub>Cl





### International Journal of ChemTech Research

CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555 Vol.11 No.06, pp 114-120, 2018

### Morphological and Electrical Studies Of Plasticized Biopolymer Electrolytes Based On Potato Starch : NH4Cl

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Abstract: Plasticized biopolymer electrolytes based on the "Potato Starch have been prepared using distilled water as solvent by Solution Casting Technique. 40 PS: 60 NH<sub>4</sub>Cl: 20PC bio polymer electrolyte has the maximum ionic conductivity 9.27x10<sup>-4</sup> S/cm at 303 K. Modulus spectroscopy studies are important to bring out the electrode-electrolyte interfacial behavior and its bulk properties. The SEM images evidenced the presence of numerous pores in the 40 PS: 60 NH<sub>4</sub>Cl: 20PC biopolymer electrolyte resulting in high ionic mobility that leads to high ionic conductivity at ambient temperature.

Keywords: Biopolymer, Potato Starch, PC, SEM, Cole-Cole, Modulus.

K.P.Radha et al /International Journal of ChemTech Research, 2018,11(06): 114-120.

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Name of the Author : Dr. B. Sivasankari

Title of the Paper : Nucleation Kinetics And Spectroscopic Studies of

**Urea L-Malic Acid (Ulma) Single Crystals** 

JASC: Journal of Applied Science and Computations

ISSN NO: 1076-5131

### NUCLEATION KINETICS AND SPECTROSCOPIC STUDIES OF UREA L-MALIC ACID (ULMA) SINGLE CRYSTALS

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\*Department of Physics, Aditanar College of Arts and Science, Tiruchendur- 628216, India.

#### Abstract

Single crystals of ULMA were grown by slow evaporation technique. Induction period values have been measured to optimize the growth parameters. The interfacial tension value was estimated using the experimentally determined induction period and the nucleation parameters have been determined. The grown crystals were characterized by XRD, EDAX, SEM, UV-visible transmittance studies, CHN studies, Z-scan measurement and LDT studies.

Keywords: Organic crystal; NLO; Crystal growth; Nucleation kinetics; Characterization; XRD; Band gap; Z-scan; LDT

\*Corresponding author : sivasankari-phy@sfreollege.edu.in sivasathyan198@gmail.com

#### 1.Introduction

The electronics industry creates an enormous demand for high quality optically active crystals. The optical activity may be either levorotatory or dextrorotatory. An example of the optically active acid is malic acid. L-malic acid is an interesting compound to explore and it has a unique biological role to play. The presence of complementary hydrogen-bonding sites implies that this optically active molecule tends to form 2D layers by bonding adjacent ions into chains (through head-to-tail O-H-O interactions) that are cross-linked via the hydroxyl group. This tendency seems to be preserved in the presence of a variety of counter ions and because of its specific molecular chirality, its compounds crystallize into non-centrosymmetric structures

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Name of the Author : Dr.S.Selvalakshmi

Title of the Paper : Characterization of biodegradable solid polymer

electrolyte system based on agar-NH<sub>4</sub>Br and its

comparison with NH<sub>4</sub>I

nal of Solid State Electrochemistry https://doi.org/10.1007/s10008-019-04262-0

ORIGINAL PAPER



#### Characterization of biodegradable solid polymer electrolyte system based on agar-NH<sub>4</sub>Br and its comparison with NH<sub>4</sub>I

<mark>S. Selvalakshmi <sup>1,2,3</sup> - T. M</mark>athavan² - S. Selvasekarapandian<sup>3,4</sup> - M. Premalatha<sup>2,5</sup>

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Concerning the pollution-free and eco-friendly materials, the prospect of using biopolymer as ion conducting matrix has been investigated in this study. Biopolymer electrolyte based on agar with different concentrations of NH<sub>4</sub>Br has been prepared by solution casting technique using water as solvent. The prepared electrolytes are characterized by X-ray diffraction analysis, Fourier-transform infrared spectroscopy, AC impedance spectroscopy, and electrochemical stability. X-ray diffraction is done to study the nature (amorphous/crystalline) of the polymer membranes. The complexation of the prepared polymer electrolytes has been studied using Fourier-transform infrared (FTIR) spectroscopy. The maximum ionic conductivity of  $1.33 \times 10^{-4} \text{ S cm}^{-1}$  has been obtained for 50 M.wt% NHaBr with agar polymer electrolyte. The temperature dependence of ionic conductivity of the prepared polymer electrolytes obeys Arrhenius law. The ionic transference numbers of mobile ions have been estimated by Wagner's dc polarization method and the results reveal that the conducting species are predominantly ions. The electrochemical stability is studied by linear sweep voltammetry. A battery has been constructed using the highest conductivity sample and its output voltage is found to be 1.80 V. A proton-exchange membrane fuel cell fabricated with the 50 M.wt% NH<sub>4</sub>Br-doped agar polymer electrolyte exhibited an output voltage of 500 mV. These results of 50 M.wt% NH<sub>4</sub>Br-doped agar have been compared with 50 M.wt% agar:50 M.wt% NH<sub>4</sub>I biopolymer electrolyte.

#### Introduction

The term "Solid State Ionics" was first coined by Prof. Takehiko Takahashi, Nagoya University in 1970. This science focuses mostly on solid electrolytes in which conduction takes place predominantly due to ions. The seed of the technological achievements in this field has been sowed by the end of nineteenth century by Faraday. A further development has been contributed by Nernst in 1897 with the development of a solid electrolyte stabilized zirconia which was used in Nemst Glower. Hence, with the efforts of the researchers, the sowed seed of this field has flourished with the branches of various types of solid electrolytes such as solid polymer electrolytes (SPEs), crystals, glasses, and biopolymer electrolytes. In recent years, it has bloomed as blossoms with flourishing fragrance in batteries [1, 2], sensors [3, 4], super-capacitors [5], electrochromic displays [6], fuel cells [7], solar cells [8], and other applications.

Owing to the depletion of fossil fuels and growing energy demand, there arises a necessity to find an alternate energyproducing resource which means to be eco-friendly. Recently, biopolymer materials, such as chitosan, com starch, and car-raggenan, have been used extensively as electrolytes [9-11]. S. C. Nunes et al. [12] have reported a conductivity value of 8.47 × 10<sup>-4</sup> S cm<sup>-1</sup> at room temperature for κ-carrageenan with 1-butyl-3-methyl-1H-imidazolium chloride ionic liquid and glycerol. Maximum conductivity value of 3.56 × 10° at room temperature for i-carrageenan with ammonium thiocyanate has been reported recently [13]. Biopolymer electrolyte based on tamarind seed polysaccharide and lithium chloride exhibited maximum conductivity of 6.7 × 10<sup>-9</sup> S cm<sup>-1</sup> at room temperature [14]. By merely becoming more environmentally aware, agar, a biopolymer, has been chosen

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Name of the Author : Mrs.M.Nithya

Title of the Paper : Development of Nonlinear Optical (NLO) Crystal L-

Phenylalanine Doped Ammonium Dihydrogen Ortho

**Phosphate (ADOP)** 

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www.jetir.org (ISSN-2349-5162)

### Development of Nonlinear Optical (NLO) Crystal L-Phenylalanine Doped Ammonium Dihydrogen Ortho Phosphate (ADOP)

M. Nithya<sup>1, 2</sup>, M. Anbu Arasi<sup>1</sup>, M.Alagar<sup>1, 3</sup>

Centre for Research and Post graduate studies in Physics, Ayya Nadar Janaki Ammal College, Sivakasi.

Department of Physics, S.F.R. College for Women, Sivakasi.

<sup>9</sup>Post graduate Department of Physics, Mannar Thirumalai Naicker College, Madurai.

Abstract: The Amino acid L-Phenylalanine doped with Ammonium Dihydrogen Ortho Phosphate crystal was grown by the slow evaporation method using water as a solvent has been synthesized. The grown crystals were subjected to powder XRD analysis, the peaks confirm the crystalline nature. And the crystal XRD analysis determines the structure and lattice parameters of the crystal. The FTIR analysis shows the functional group of the material components. The AC impedance spectroscopy studies are carried out and the conductivity is measured. The NLO Property of grown L-Phenylalanine doped with Ammonium Dihydrogen Ortho Phosphate was carried out by Nd: YAG Laser.

Keywords: Crystal growth, NLO, XRD, FT-IR spectrum, AC impedance studies.

#### LINTRODUCTION

Nonlinear optical materials play a vital role in the field of optics, these NLO material application areas are telecommunications optical signal processing, optical switching, photonics and optoelectronic technology [1-4], because of their applications lots of NLO crystals were grown[5-8]. Already NLO crystals such as L-Phenylalanine Nitrate [5], L-Phenylalanine fumaric acid [10], L-Phenylalanine intrinsection and [12], L-Phenylalanine maleate [10], L-Phenylalanine perchlorate [11], L-Phenylalanine [12], and L-Phenylalanine potossium hydrogen phthalate [3] were grown by the researchers.

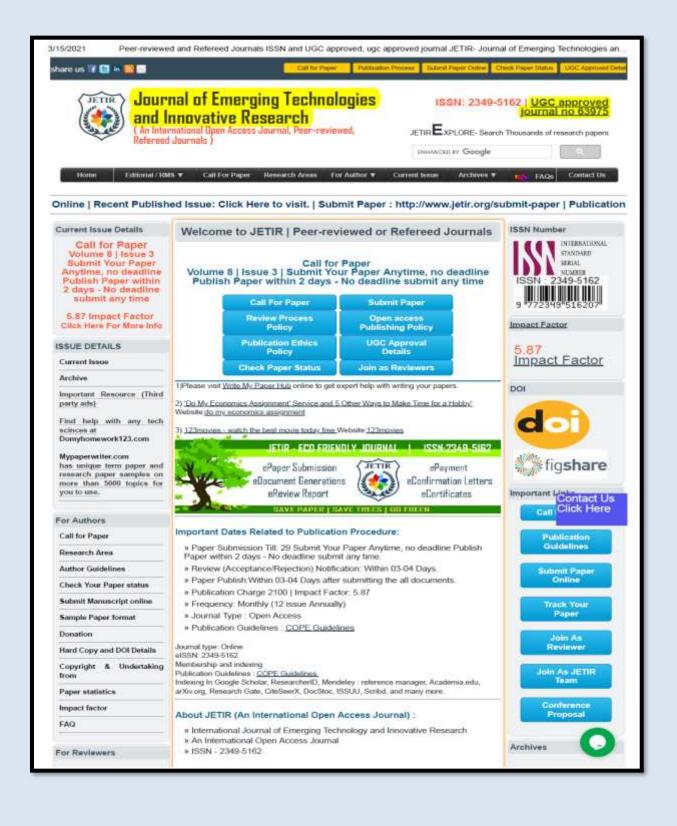
Phenylalamine is naturally available amino acids in protein; it is an important amino acid. The L-Phenylalamine amino acid is important for the body to create neurotransmitters [5]. The biological importance and naturally occurring properties of L-Phenylalamine have motivated to grow the NLO crystal with L-Phenylalamine. Generally, L-Phenylalamine is soluble in aqueous solution and the molecular formula is C 9H 11NO2 [13]. From the literature, there are no studies on L-Phenylalamine doped with Ammonium dihydrogen orthophosphate. The main purpose of this present work is to grow the NLO crystals based on L-Phenylalamine doped with Ammonium dihydrogen phosphate and characterized by single crystal XRD, Powder XRD, FTIR, and NLO studies by using Nd: YAG Laser.

#### II. EXPERIMENTAL DETAILS

Analytical reagent grade [14] of Amino acid L-Phenylalanine and Ammonium salt Ammonium Dihydrogen Ortho Phosphate were mixed in a stoichiometric ratio [13] in distilled water. The resultant solution was filtered and transferred to the crystal growth vessels. Crystallization was allowed to take place by slow evaporation at room temperature [8, 13] for a weak in a dust free place. After a weak, well defined transparent crystals were obtained in the size of 8mm length. The obtained crystal was carefully removed from the solution. The crystals were allowed to dry for sometime in dust free place. After those colorless transparent crystals were collected and stored in a clean and airtight container. L-Phenylalanine doped Ammonium Dihydrogen Ortho Phosphate crystals the morphology is shown in figure 1.



Fig. 1 Morphology L. Phenylalanine doped Ammonium Dihydrogen Ortho Phosphate single crystals





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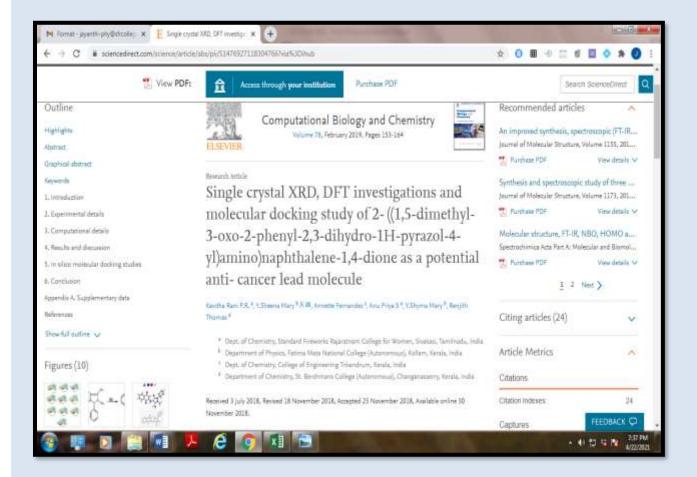
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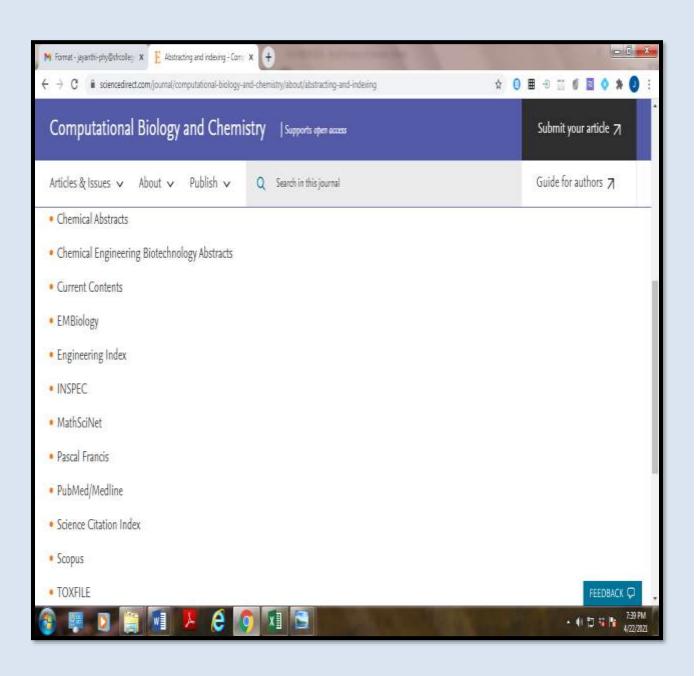
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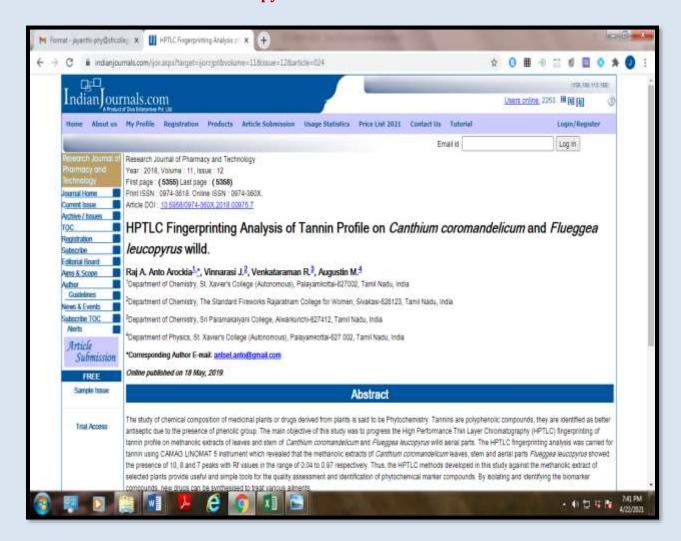
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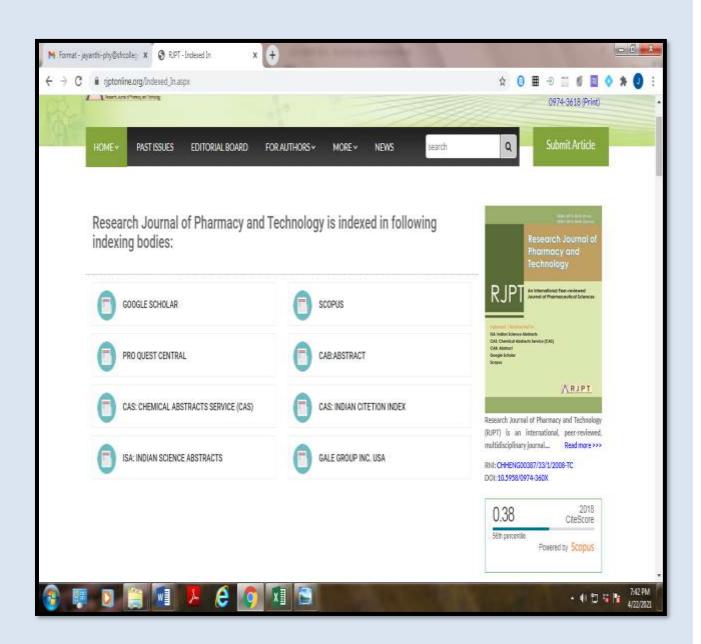
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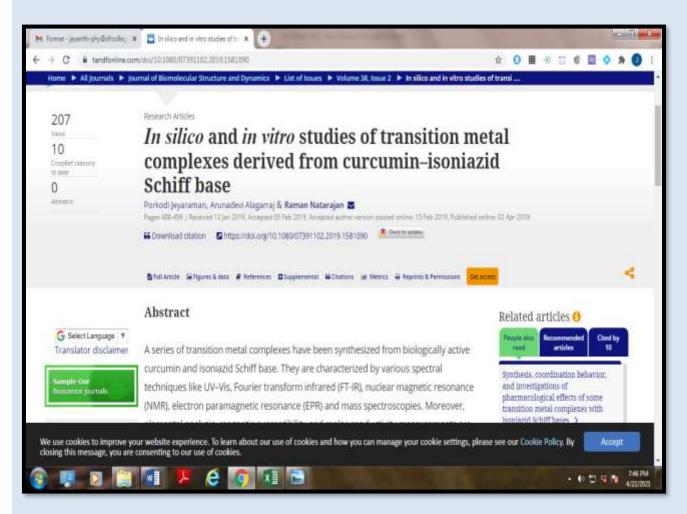
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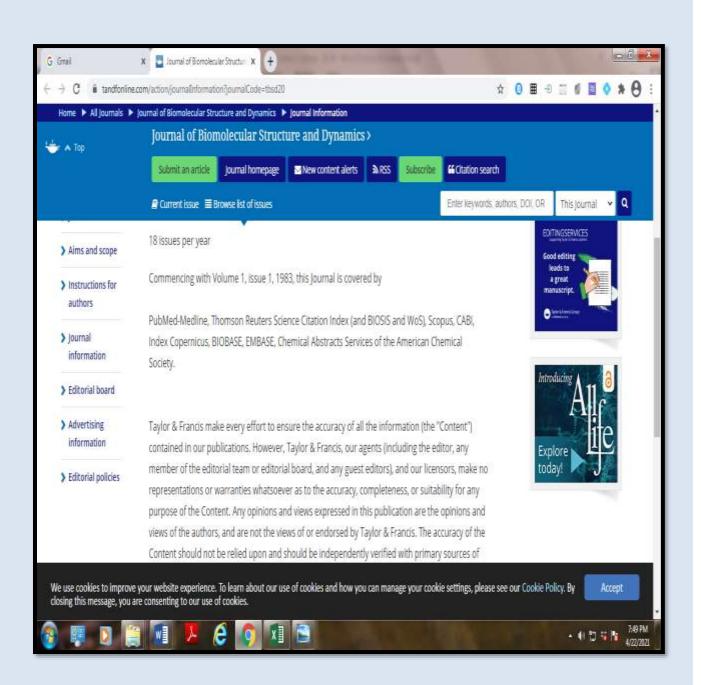
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complexes derived from curcumin - isoniazid

Schiff base.







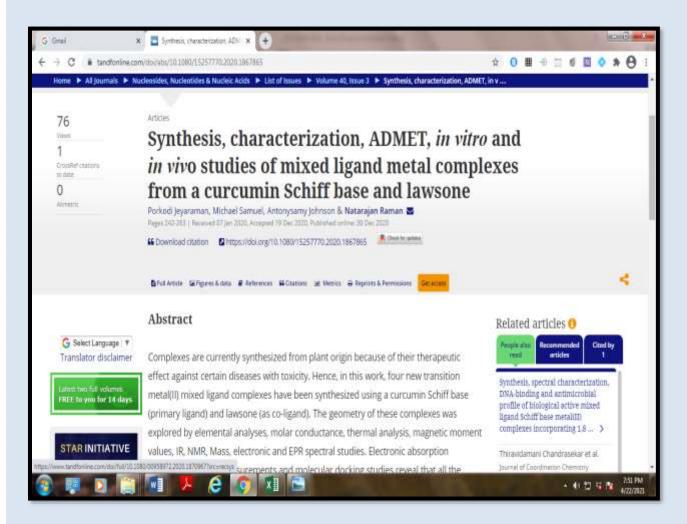
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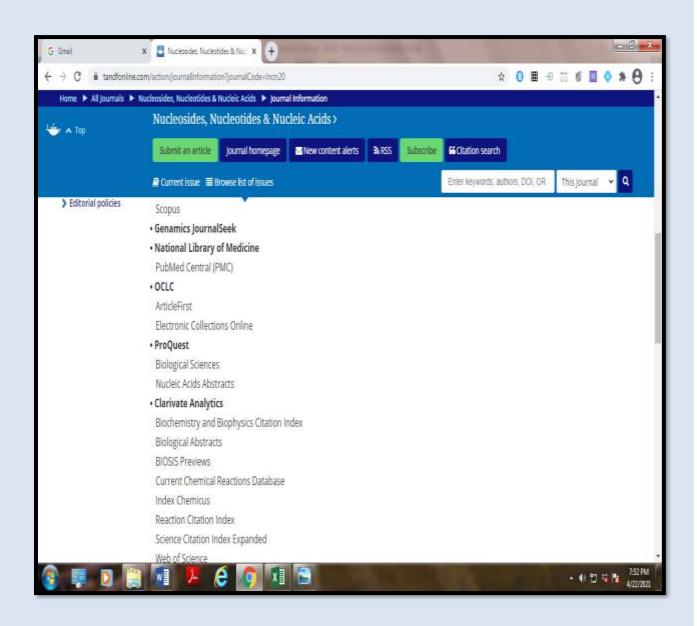
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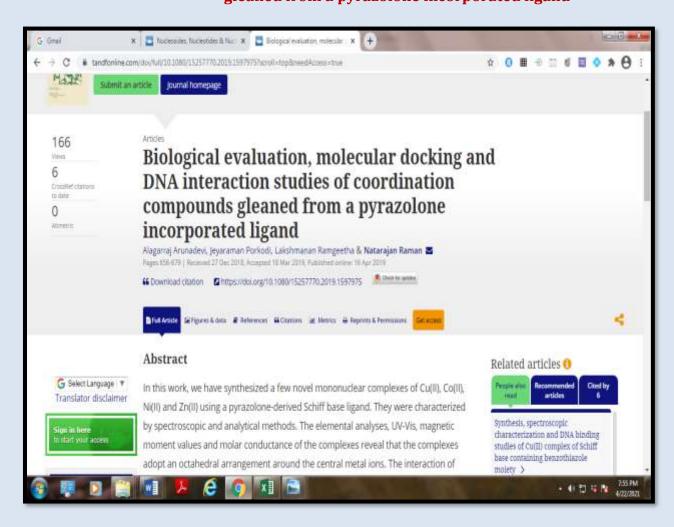


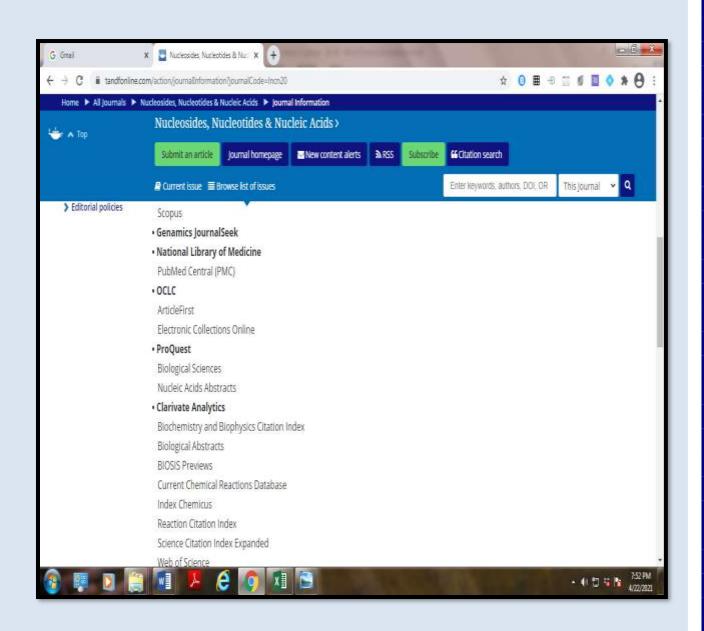
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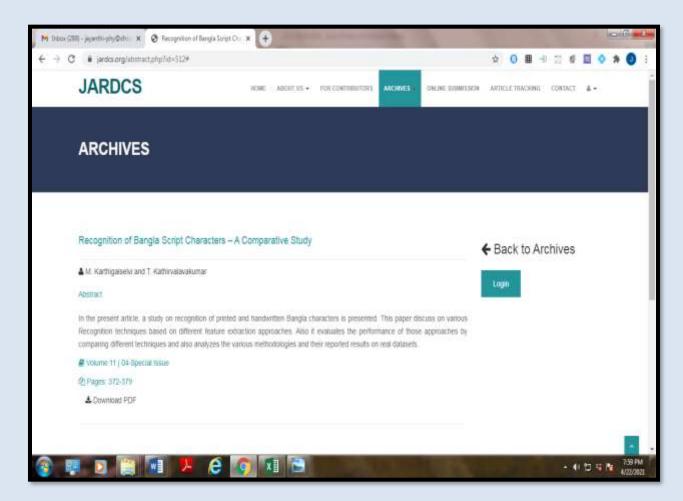


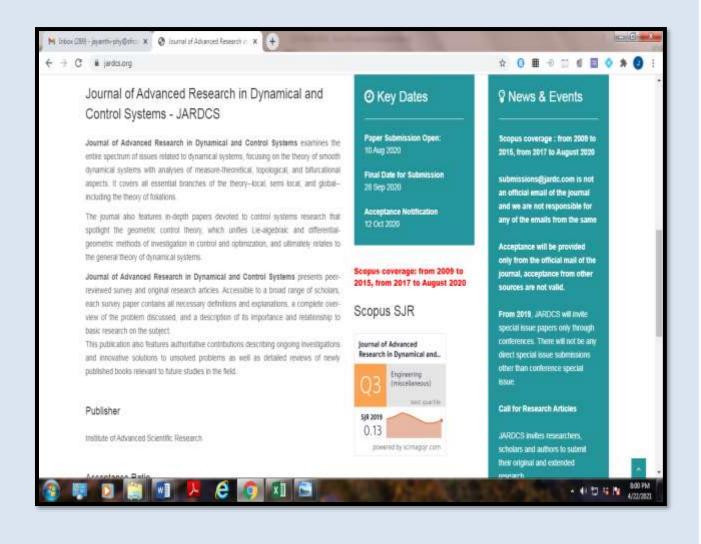
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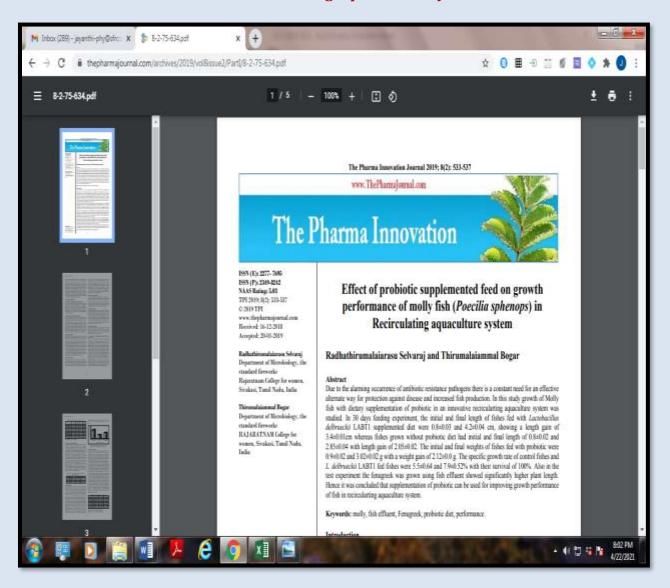
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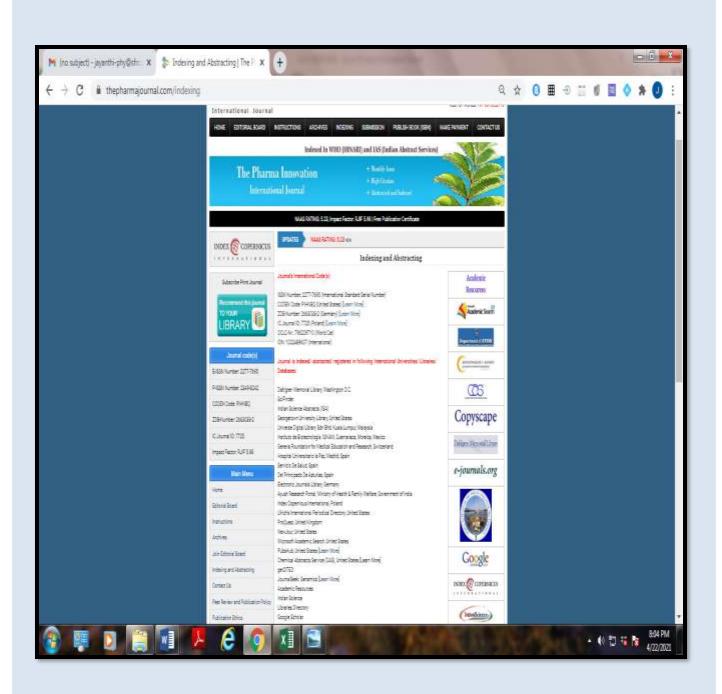
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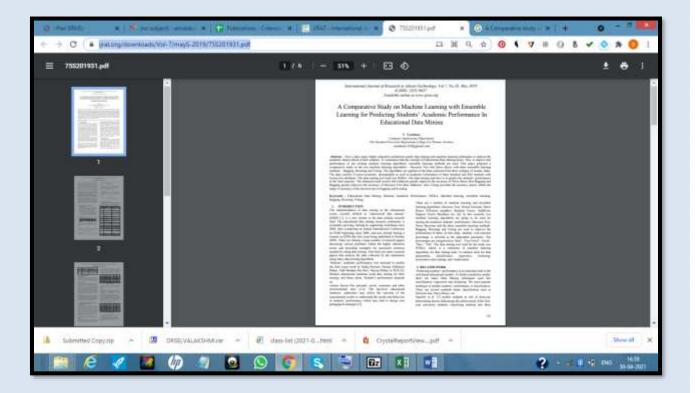
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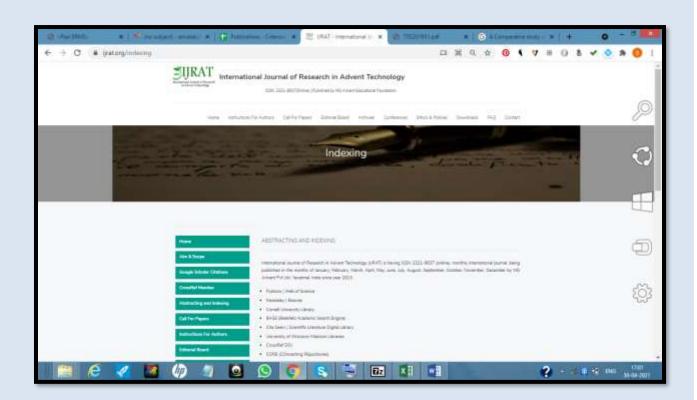
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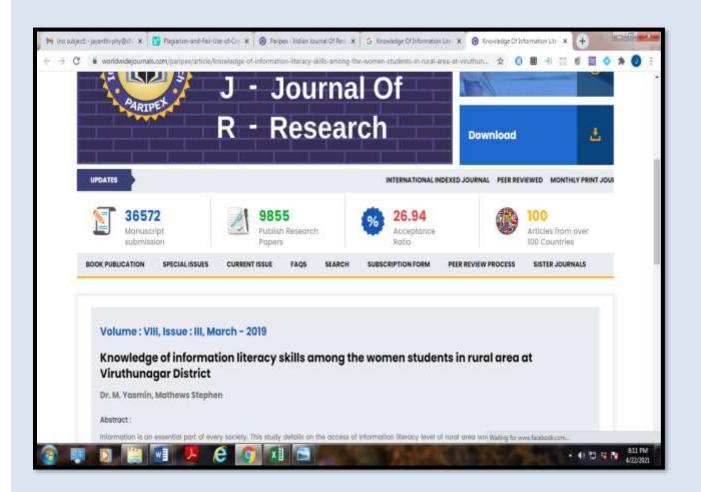
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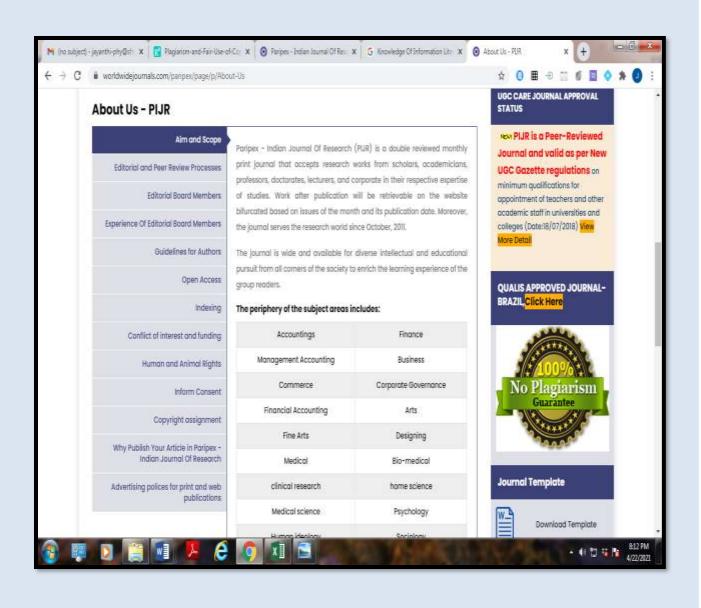
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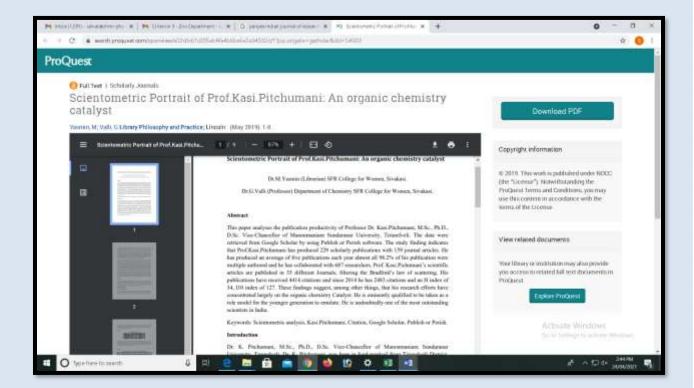


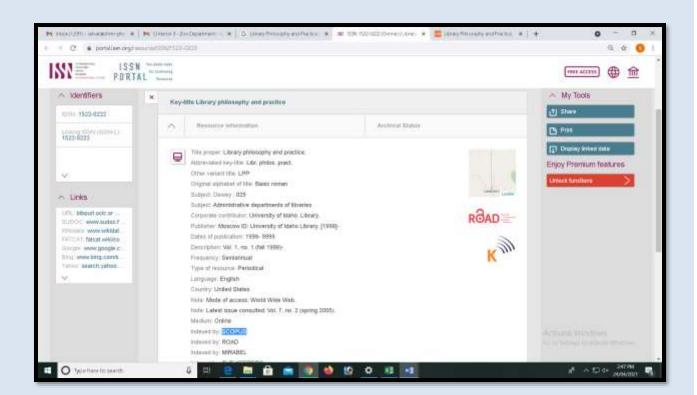
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