

Abstracted in:



ELSEVIER

SCOPUS™

Since, 2009



Estd. 2008

Rasayan J. Chem.
ISSN (Print) : 0974-1496
ISSN (Online) : 0976-0083
CODEN : RJCABP

Volume-12 | Number- 4 | 2116-2123 | October-December | 2019

RASĀYAN

JOURNAL OF CHEMISTRY

An International Quarterly Research Journal of Chemical Sciences

www.rasayanjournal.com | www.rasayanjournal.co.in

APPLICATION OF FLOWER COLOR VARIATIONS TO *Impatiens balsamina* L. AS AN ENVIRONMENTALLY FRIENDLY ACID-BASE INDICATOR

Nanik Siti Aminah*, Andika Pramudya Wardana, Alfinda Novi Kristanti,
Brilliana Via Safitri and Mafalda Rosa

Department of Chemistry, Faculty of Science and Technology, Universitas Airlangga,
Jl. Mulyorejo, Surabaya, Indonesia 60115

*E-mail : nanik-s-a@fst.unair.ac.id

ABSTRACT

An acid-base titration is one of the quantitative analysis methods involving a high-polluting, harmful, hazardous, and relatively expensive synthetic indicator. The development of the concept of green chemistry encourages research to invent natural indicators that are more environmentally friendly. *Impatiens balsamina* L. flower has a variety of colors and contains anthocyanin pigments. Rose pink, red, violet, orangish red, and pink *Impatiens balsamina* L. flower were extracted with acidified ethanol solvent. All five *I. balsamina* L. flower extracts indicate discoloration on pH range 10-12. Violet flower extract has an error percentage of strong acid-strong base titration which was $50.48 \pm 2.18\%$, while in strong acid-weak base titration was $19.27 \pm 1.15\%$. Meanwhile, it cannot be applied in weak acids-strong base titration. Thus, *I. balsamina* L. flowers can be used as an alternative to environment-friendly natural acid-base indicators.

Keywords: Acid-base, Green Chemistry, *Impatiens balsamina* L., Natural Indicator, Titration

© RASĀYAN. All rights reserved

INTRODUCTION

The beginning of green chemistry was dominated by the green organic synthesis in various branches of the chemical industry.¹ This green chemistry activity has been applied to the role of analytical chemists in making laboratory practices more environmentally friendly.² Green analytical chemistry (GAC) emerged in 2000, where the main principle was to replace toxic reagents, reduce the number of reagents used and the waste produced dramatically, thereby reducing or avoiding the side effects of the analytical process. It is carried out to increase the awareness of environmental problems caused by analytical processes and industries in the chemical field.³

Titration is the most common laboratory method carried out by quantitative chemical analysis used to determine the concentration of analytes.⁴ Some scientists frequently conducted titration using high-polluting, harmful, hazardous, and relatively expensive synthetic indicators⁴. Both dye and synthetic indicators have become a cause of concern because of the damages to the environment and living systems. Therefore, efforts to replace hazardous synthetic indicators with the natural one obtained from plant sources have been made.⁵ Therefore, various studies on the indicators from natural products are being carried out widely by many scientists around the world because they are less dangerous, low cost, easily available, and environmentally friendly.⁶ Research on acid-base indicators of natural products includes flower estates such as *Nerium oleander* and *Catharanthus roseus*⁷, *Antirrhium majus* and *Dianthus plumarius*⁸, *Quisqualis indica*, *Pentas lanceolata*, *Malabathricum melastoma*, *Impatiens acaulis*⁹, *Thunbergia erecta*¹⁰, and *Syzygium cumini*.¹¹

Anthocyanin compounds are water-soluble pigments and are naturally found in various types of plants. The color of red to blue flowers comes from anthocyanins, a class of flavonoids. Flower color is one of the most important characteristics of floricultural crop.¹² Color is given by anthocyanin due to its long and conjugated double bond arrangement, so it can absorb light in the visible light range.

Rasayan J. Chem., 12(4), 2116-2123(2019)

<http://dx.doi.org/10.31788/RJC.2019.1245498>



CrossMark

I. balsamina is a flowering plant that is widely grown and belongs to the family of *Balsaminaceae* originating from India. Balsam is commonly known as garden balsam, rose balsam and Gulmehdiin Hindi.¹³ This plant is a qualitative short-day plant, free-flowering, semi-hard and compact, can withstand heavy rain and live in high humidity. Balsamina is a popular species in northern India.¹⁴ This plant can also be grown in Indonesia and has been reported to grow in Pontianak, West Kalimantan.¹⁵ *I. balsamina* L. plants are assumed to have anthocyanin since it has a variety of flower color, from red to purple. Thus, it is necessary to conduct research on the color variations of *I. balsamina* L. flowers as a substitute for synthetic indicators that are more environmentally friendly, low cost, less dangerous and easily available.

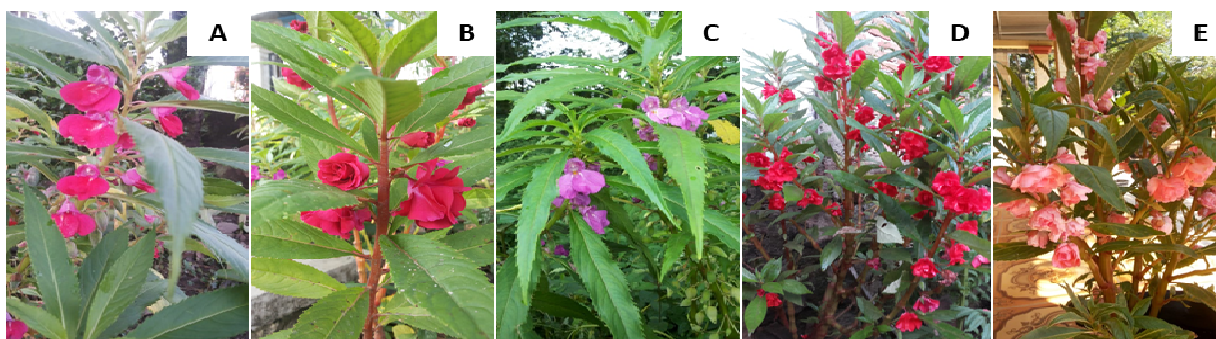


Fig.-1: *Impatiens balsamina* L. flower (A) Rose Pink, (B) Red, (C) Violet, (D) Orangish Red, dan (E) Pink

EXPERIMENTAL

Material

The materials used in this research were five *Impatiens balsamina* L. flowers with various colors, namely rose pink, red, violet, orangish red, and pink. The chemicals used were HCl, NaOH, CH₃COOH, NH₄OH, ethanol 96%, phenolphthalein (pp), methyl red, and distilled water.

Apparatus

The tools used in this research were a UV-Vis spectrometer, Beaker glass, Erlenmeyer flask, pipette, pH meter, rotary vacuum evaporator, Buchner funnel, burette, mortar and pestle.

Extraction of *I. Balsamina* L Flower.

Samples in the form of fresh flowers from the five *I. balsamina* L. flowers macerated with 96% ethanol acidified with 1% HCl for 30 minutes. The maceration results of each flower were then filtered and the extract obtained was then concentrated with a rotary vacuum evaporator at 35°C until thick extracts were obtained¹⁰.

Determination of pH Range of Indicator Obtained From *I. Balsamina* L. Flower Extract

The 3 drops of each indicator of *I. balsamina* L. flower extract was dropped onto 5 mL solution of pH 1 to 14. The color change was observed and the absorption bands were determined by UV-Vis spectrophotometer at wavelengths of 200-600 nm. The pH range was determined from color changes and absorption bands from the solutions which have been given an indicator of *Impatiens balsamina* L. flower extract.

Determination of Error Percentage of Indicator Obtained From *I. Balsamina* L. Flower Extract

Error percentage of the five indicators obtained from *I. balsamina* L. flower extract with variations in flower colors was determined by the acid-base titration method and compared to standard indicators. Titrations used were strong acid-strong base, strong acid-weak base, weak acid-strong base, and weak acid-weak base titration with standard phenolphthalein and methyl red indicators.

$$\%Error = \left| \frac{Experimental\ value - Theoretical\ value}{Theoretical\ value} \right| \times 100$$

2117

RESULTS AND DISCUSSION

Absorption Bands of *I. balsamina* L. Flower Extract

The absorption bands of the *I. balsamina* L. flower extracts were shown in Fig.-2. Based on the UV-Vis spectra above, it indicated that the absorption bands of extract A were at 505.5, 324.5 and 248.5 nm, extract B were at 517.5 nm, 320 nm and 266.5 nm, extract C were at 533.5 nm, 345 nm and 263.5 nm, extract D were at 503 nm, 317 nm and 249 nm, while extract E was at 519.5 nm, 339.5 nm and 249 nm. It shows that the five colors of *I. balsamina* L. flower are assumed to contain anthocyanin compounds. The anthocyanin compound has the characteristics of two absorption regions at wavelengths that are UV (260-280 nm) and visible (490-550 nm).¹⁶ The color of anthocyanin is caused by a long conjugated double bond arrangement; thus, it can absorb light in the visible light range. The color caused by anthocyanin depends on the acidity (pH) of the environment. Therefore, this pigment can be used as a pH indicator. However, it is not possible to distinguish the various types of anthocyanins based solely on the UV-Vis spectrum.

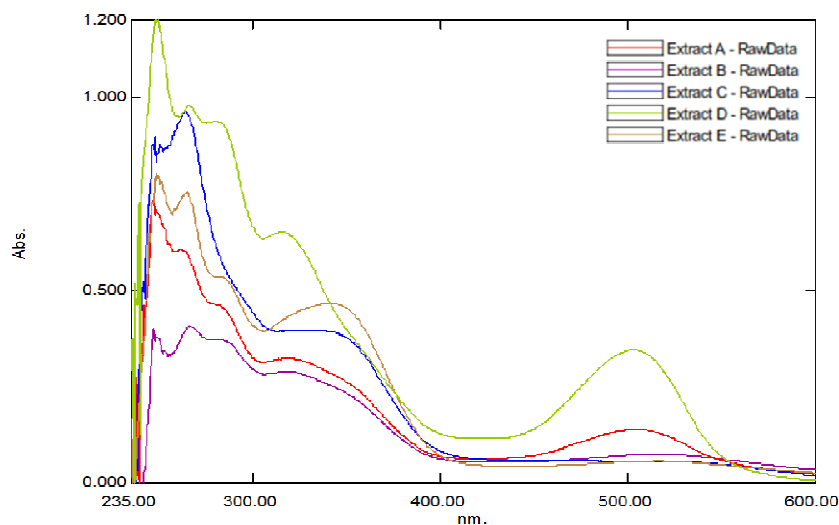


Fig.-2: UV-Vis Spectra of *I. balsamina* L. Flower Extract By Various Flower Colours, (A) Rose pink, (B) Red, (C) Violet, (D) Orangish pink, and (E) Pink

Determination of pH Range On Indicator Obtained From *I. Balsamina* L. Flower Extract

The pH range of the five indicators obtained from *Impatiens balsamina* L. flower extract was determined based on its color changes and absorption bands in acid-base solutions (pH 1-14). The change in the indicator color of the 5 flowers in the pH solution was shown in Fig.-3.

There are four forms of anthocyanin structure in equilibrium which cause color changes in anthocyanin-containing flower extracts. All five indicators can be inferred that it changes from red to orange color at acidic pH (1-2), it is because anthocyanin forms a flavylium cation. The increase in pH change causes the color of the extract to fade almost to colorless due to the formation of a pseudo base carbinol from anthocyanin caused by the flavylium cation hydration which subsequently undergoes tautomeric formation of chalcone pseudo base. At alkaline pH, anthocyanin forms a bluish-colored quinonoidal base. Color changes at pH 1-14 from the five *Impatiens balsamina* L. flower extracts were supported by changes in the UV-Vis absorption band. It is one of the supporting data in determining the pH range of each flower extract. The UV-Vis spectra of the five *I. balsamina* L. flower extracts with respect to pH changes were shown in Fig.-5.

The absorption band shift of extract A (Fig.-5. A1 and A2), extract B (Fig.-5. B1 and B2), and extract E (Fig.-5. E1 and E2) at pH 1-10 were not significant, while at pH 11-12 absorption bands I and II were significantly shifted. The absorption band of Extract C (Fig.-5. C1 and C2) was relatively constant at pH 1-9, while at pH 10-11 the bands I and II shift were significant. On extract D (Fig.-5. D1 and D2), the absorption bands I and II at pH 1-10 were relatively stable, but at pH 11-12, a significant absorption band shift occurred. Extract D also undergoes a shift in absorption bands at pH 12-13

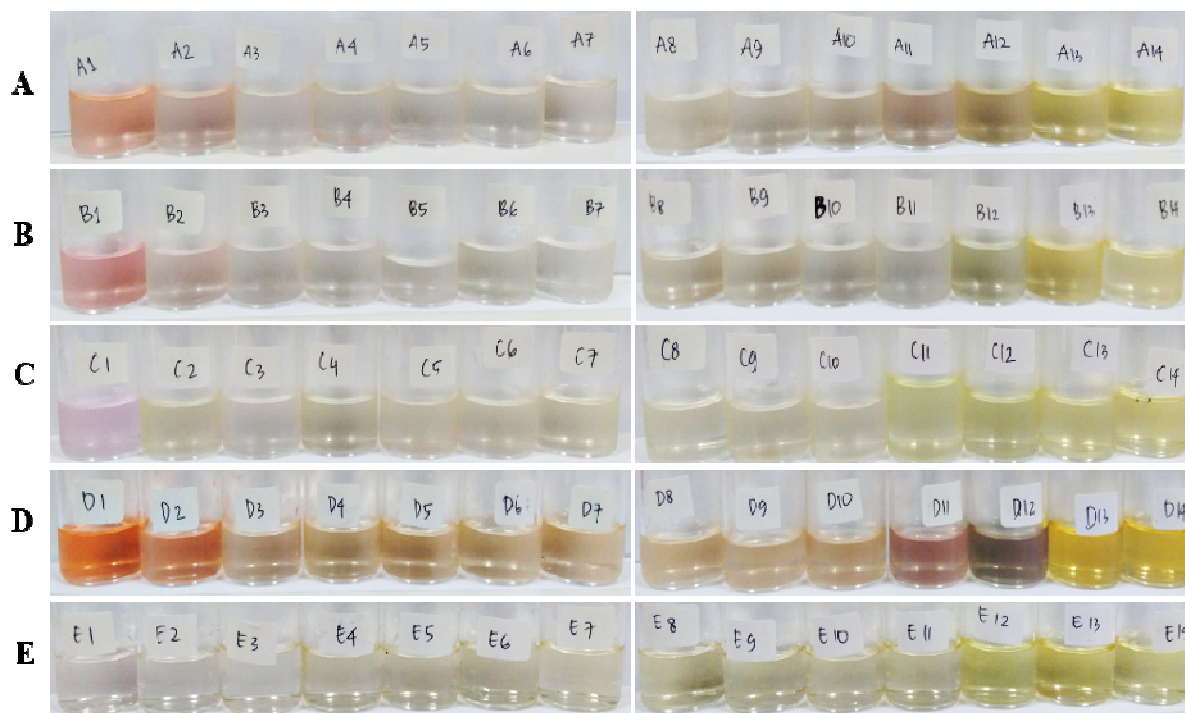


Fig.-3: The Color Changes Of Indicator Obtained From *Impatiens balsamina* L. Flower Extract, (A) Rose Pink, (B) Red, (C) Violet, (D) Orangish Red, dan (E) Pink

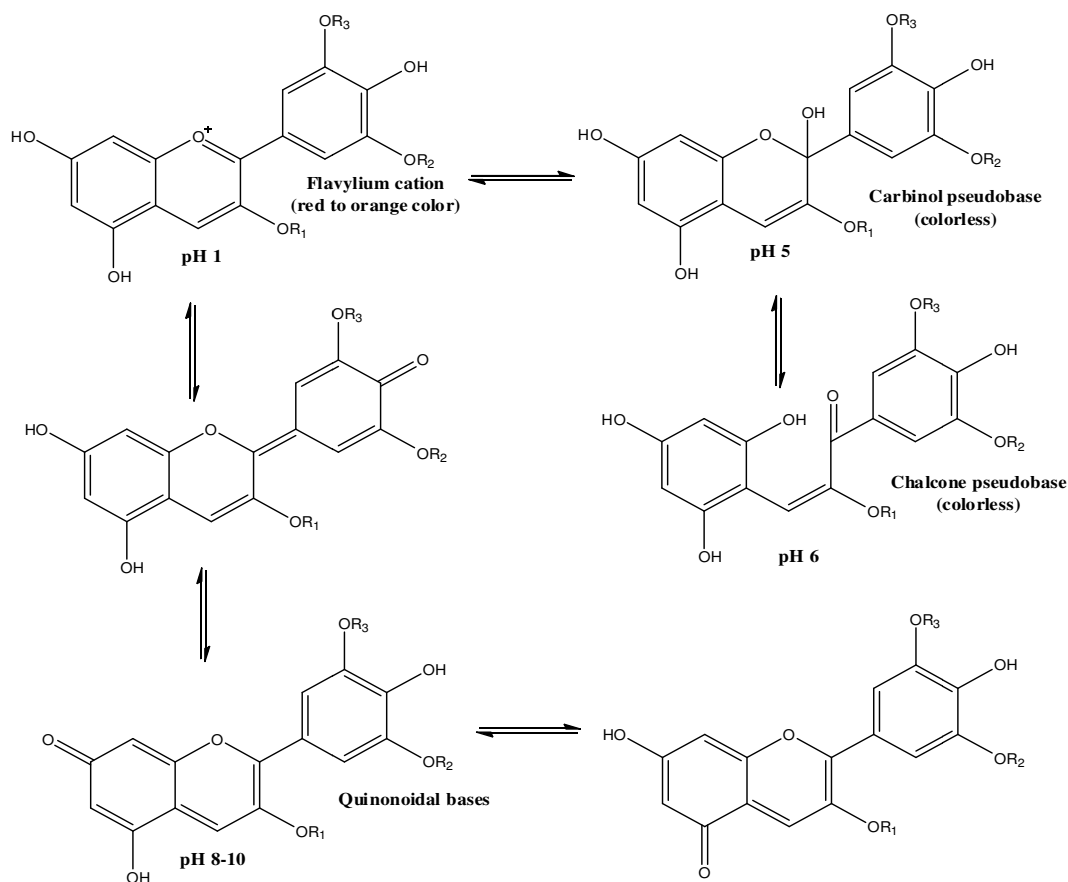
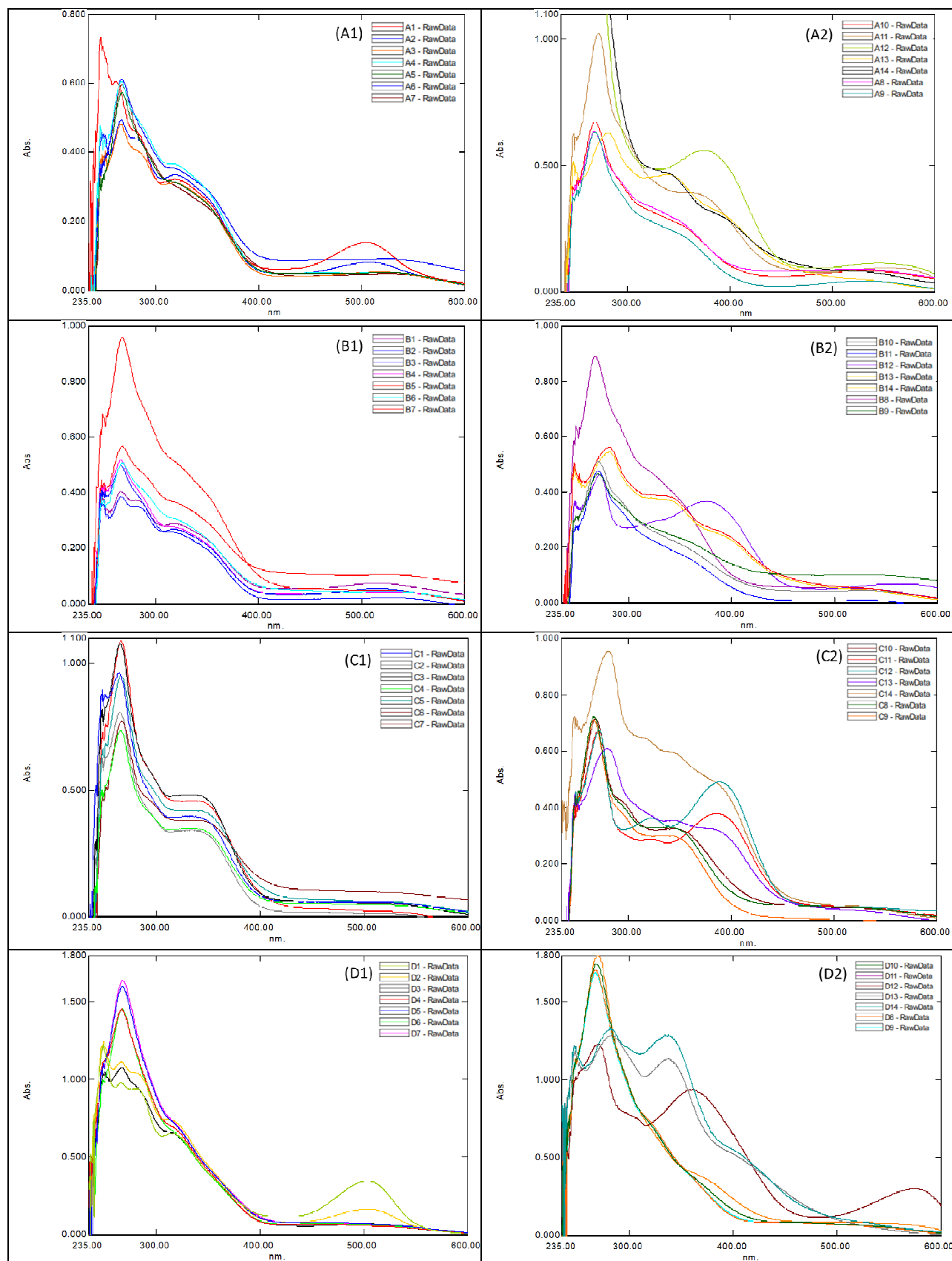


Fig.-4: Effect of pH on The Form of Anthocyanin Compounds (Modified)¹⁷



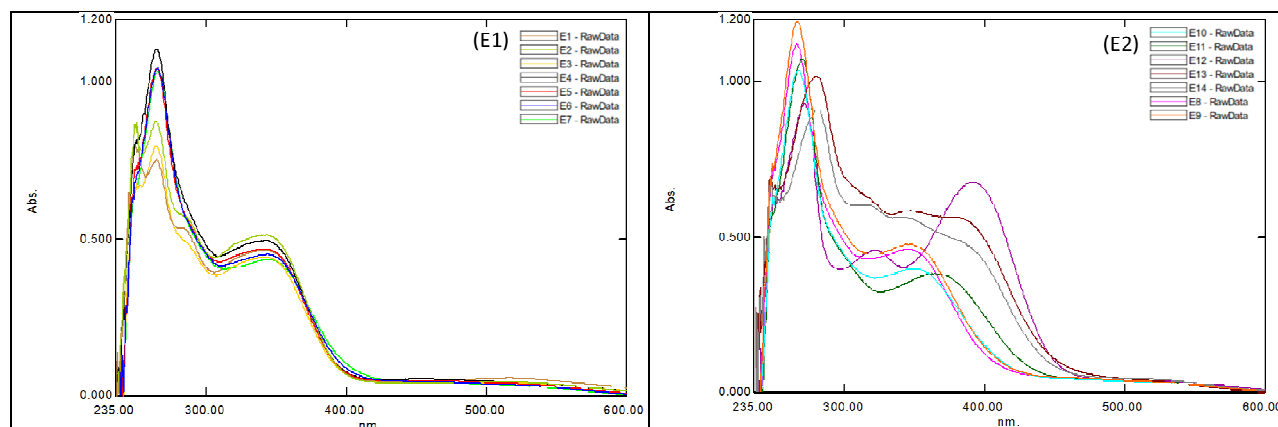


Fig.-5. UV-Vis Spectra Of *Impatiens Balsamina* L. Flower Extract On pH Value 1-14. (A1) Flower Extract A On pH Value 1-7, (A2) Flower Extract A On pH Value 8-14, (B1) Flower Extract B On pH Value 1-7, (B2) Flower Extract B On pH Value 8-14, (C1) Flower Extract C On pH Value 1-7, (C2) Flower Extract C On pH Value 8-14, (D1) Flower Extract D On pH Value 1-7, (D2) Flower Extract D On pH Value 8-14, (E1) Flower Extract E On pH Value 1-7, (E2) Flower Extract E On pH Value 8-14.

Based on the color changes and absorption band shifts of *I. balsamina* L. flower extract, the pH range of the flower extract indicator can be determined as shown in Table-1.

Table-1: Color Change and Absorption Band of the *I. Balsamina* L. Flower Extracts Indicators

No.	Flower extract	Color change	Bands (λ_{max} nm)		
			I	II	III
1	A				
	pH 11	Orange	369.5	271	-
	pH 12	Reddish yellow	375	245	-
2	B				
	pH 11	Colorless	-	352.5	271
	pH 12	Bluish yellow	562.5	376	271
3	C				
	pH 10	Colorless	352	268.5	-
	pH 11	Yellow	386	271	-
4	D				
	pH 11	Purplish red	-	367.5	269.5
	pH 12	Violet	574.5	360.5	270
	pH 13	Yellow	338	283	248
5	E				
	pH 11	Colorless	339.5	249.5	
	pH 12	Yellow	391.5	271.5	

Error Percentage of Indicator Obtained From *I. Balsamina* L Flower Extract

Acid-base titration is used to determine the error percentage of the five *Impatiens balsamina* L. flower extracts. The error percentage of each flower was shown in Table-2.

Table-2: Error Percentage of the Five *Impatiens Balsamina* L. Flower Extract Indicators

No.	Type of titration	Indicator	End point pH			% Error \pm SD
			I	II	III	
1	Strong acid-Strong base	Phenolphthalein	8.7	8.5	8.9	24.29 \pm 2.86
		A	11.3	11.5	11.2	61.90 \pm 2.18
		B	11.4	11.2	11.5	62.38 \pm 2.18

No.	Type of titration	Indicator	End point pH			% Error \pm SD
			I	II	III	
		C	10.7	10.5	10.4	50.48 \pm 2.18
		D	11.1	11.1	11.2	59.05 \pm 0.82
		E	11.9	12	12.3	72.38 \pm 2.97
2	Strong acid-Weak base	Phenolphthalein	8.8	8.9	8.8	1.30 \pm 0.66
		A	11.5	11.4	11.4	31.12 \pm 0.66
		B	11.1	11.3	11.2	28.44 \pm 1.15
		C	10.4	10.3	10.5	19.27 \pm 1.15
		D	11.2	11.1	11.2	28.06 \pm 0.66
		E	12.3	12.4	12.2	41.06 \pm 1.15
3	Weak acid-Strong base	Methyl Red	5.4	5.3	5.6	2.90 \pm 2.89
		A	11.2	11.3	11.3	100
		B	11.3	11.4	11.2	100
		C	10.2	10.1	10.1	100
		D	11.1	11.2	11.2	100
		E	11.8	11.9	12	100

The error percentage of the five indicators in several titrations shows that at strong base-strong acid titration are all above 50%, indicating that the pH range of the flower extract indicator is not suitable for strong base-strong acid titration because the equivalence point at this titration is at pH 7 while the pH range of the indicators around pH 10-12. Meanwhile, on the strong acid-weak base titration, the error percentage given by each flower extract indicator is relatively smaller. Extract C has the best error percentage, which is 19.27% \pm 1.15. The titration of the weak acid-strong base from all extract indicators has an error rate of 100%, showing that the indicator cannot be employed in weak acid-weak base titration. The titration of the weak acid-strong base has an equivalent point at around pH 5.28 while the five *I. balsamina* L. flower extract indicators have pH range of 10-12 (bases) which poses this indicator not to be used in weak acid-strong base titration applications.

CONCLUSION

I. balsamina L. flowers with various color variations can be used as an alternative acid-base indicator that is environmentally friendly. The pH range of the indicator was at pH 10-12. The best error percentage of *I. balsamina* L. flower extract was violet-colored flowers, on strong acid-weak base titration with the error percentage 50.48 \pm 2.18%. In the strong acid-weak base, the error percentage was 19.27 \pm 1.15%. Meanwhile, weak acids-strong base titration cannot be employed.

REFERENCES

1. A. Gałuszka, Z. Migaszewski, J. Namieśnik, *Trends Anal. Chem.*, **50**, (2013), DOI: [10.1016/j.trac.2013.04.010](https://doi.org/10.1016/j.trac.2013.04.010)
2. M. Tobiszewski, A. Mechlińska, J. Namieśnik, *Chem. Soc. Rev.*, **39**(8), 2869(2010), DOI: [10.1039/b926439f](https://doi.org/10.1039/b926439f)
3. S. Armenta, S. Garrigues, M. de la Guardia, *Trends Anal. Chem.*, **27**(6), 497(2008), DOI: [10.1016/j.trac.2008.05.003](https://doi.org/10.1016/j.trac.2008.05.003)
4. N. Kapilraj, S. Keerthanan, M. Sithambaresan, *J. Chem.*, (2019), DOI: [10.1155/2019/2031342](https://doi.org/10.1155/2019/2031342)
5. A. Nair, A. Kelkar, S. Kshirsagar, A. Harekar, K. Satardekar, S. Barve, S. Kakodkar, *Journal of Innovations in Pharmaceutical and Biological Sciences*, **5**(4), 1(2018).
6. P.M.A. Khan, M. Farooqui, *J. Adv. Scient. Res.* **2**(4), 20 (2011)
7. S. Kadam, A. Yadav, V. Raje, K. Waghmare, *Der Pharma Chemica*, **5**(1), 296 (2013).
8. S. Jaspreet, A. Kanika, N. Parminder, D. Geetam, *I.R.J.P.* **2**, 4 (2011)
9. E. Vadivel, S. D. Chipkar, *Int. J. Pharm. Pharm. Sci.*, **8**(6), 250(2016)
10. Tukiran, A. P. Wardana, *Rasayan J. Chem.*, **11**(2), 773(2018), DOI: [10.31788/RJC.2018.1121844](https://doi.org/10.31788/RJC.2018.1121844)
11. M. Zulfajri, Muttakin. *Rasayan J. Chem.* **11**(1), 135(2018), DOI: [10.31788/RJC.2018.1111983](https://doi.org/10.31788/RJC.2018.1111983)

12. N. Okitsu, T. Mizuno, K. Matsui, S.H. Choi, Y. Tanaka, *Plant Biotechnology*, **35(1)**, 9(2018), DOI: [10.5511/plantbiotechnology.18.0104a](https://doi.org/10.5511/plantbiotechnology.18.0104a)
13. A.K. Singh, 2014, *Breeding and Biotechnology of Flowers: Vol. 2 Garden flowers*, New India Publishing Agency, New Delhi, p.698.
14. T.K. Lim, 2014, *Impatiens balsamina*. In: *Edible Medicinal and Non-Medicinal Plants*, Springer, Dordrecht, pp 537-547.
15. H. IH, I. Fajriaty, T. Wijaya, M. Hafizh, *Nus. Biosci.*, **10(1)**, 58(2018), DOI: [10.13057/nusbiosci/n100109](https://doi.org/10.13057/nusbiosci/n100109)
16. J. B. Harborne, *Biochem J.*, **70(1)**, 22(1958), DOI: [10.1042/bj0700022](https://doi.org/10.1042/bj0700022)
17. A. Castañeda-Ovando, Ma. de L. Pachero-Hernández, Ma. E. Páez-Hernández, J. A. Rodríguez, C. A. Galán-Vida, *Food Chemistry*, **113(4)**, 859(2009), DOI: [10.1016/j.foodchem.2008.09.001](https://doi.org/10.1016/j.foodchem.2008.09.001)
[RJC-5498/2019]



SJR

Scimago Journal & Country Rank

Enter Journal Title, ISSN or Publisher Name

[Home](#)[Journal Rankings](#)[Country Rankings](#)[Viz Tools](#)[Help](#)[About Us](#)

Rasayan Journal of Chemistry

Country [India](#) -  [SJR Ranking of India](#)**Subject Area and Category** [Biochemistry, Genetics and Molecular Biology](#)
[Biochemistry](#)[Chemical Engineering](#)
[Chemical Engineering \(miscellaneous\)](#)[Chemistry](#)
[Chemistry \(miscellaneous\)](#)[Energy](#)
[Energy \(miscellaneous\)](#)[Pharmacology, Toxicology and Pharmaceutics](#)
[Pharmacology, Toxicology and Pharmaceutics \(miscellaneous\)](#)**Publisher** [Rasayan Journal](#)**Publication type** [Journals](#)**ISSN** [09760083, 09741496](#)**Coverage** [2009-ongoing](#)**Scope** RASĀYAN Journal of Chemistry [RJC] signifies a confluence of diverse streams of chemistry to stir up the cerebral powers of its contributors and readers. By introducing the journal by this name, we humbly intent to provide an open platform to all researchers, academicians and readers to showcase their ideas and research findings among the people of their own fraternity and to share their vast repository of knowledge and information. The journal seeks to embody the spirit of enquiry and innovation to augment the richness of existing chemistry literature and theories. We also aim towards making this journal an unparalleled reservoir of information and in process aspire to inculcate and expand the research aptitude.[Homepage](#)[How to publish in this journal](#)[Contact](#)[Join the conversation about this journal](#)

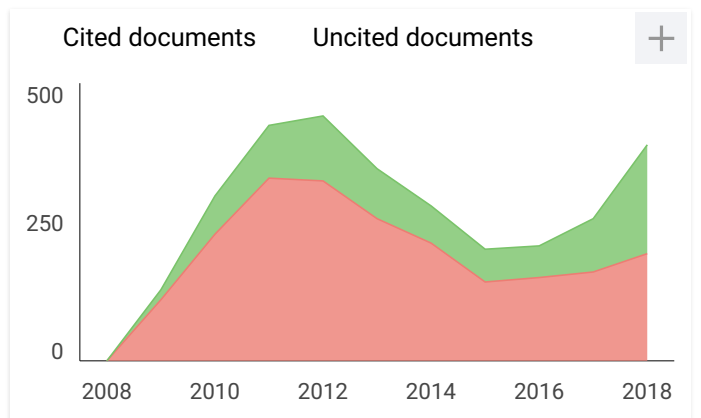
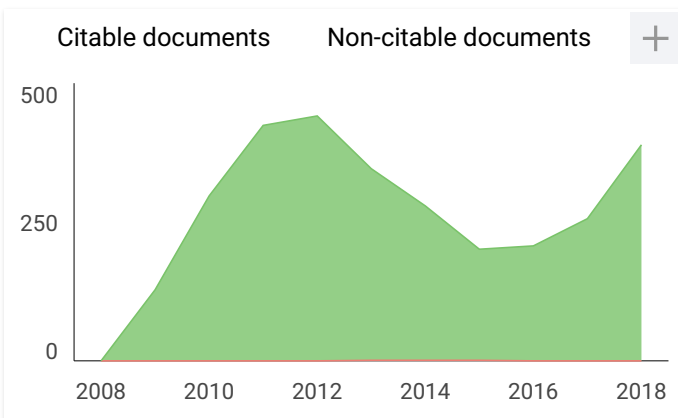
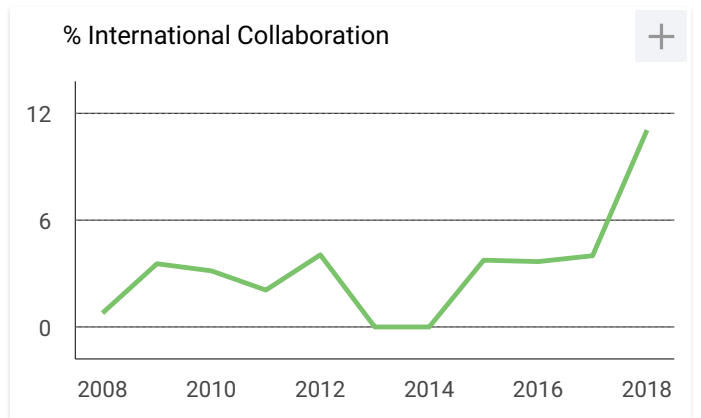
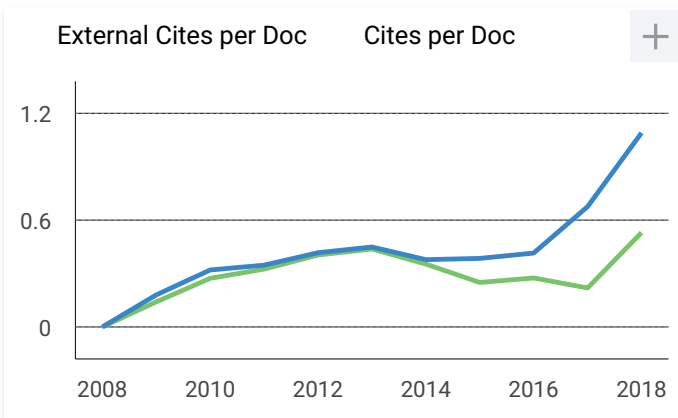
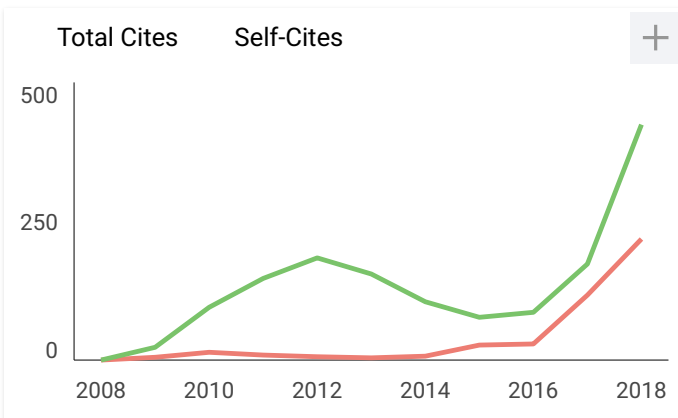
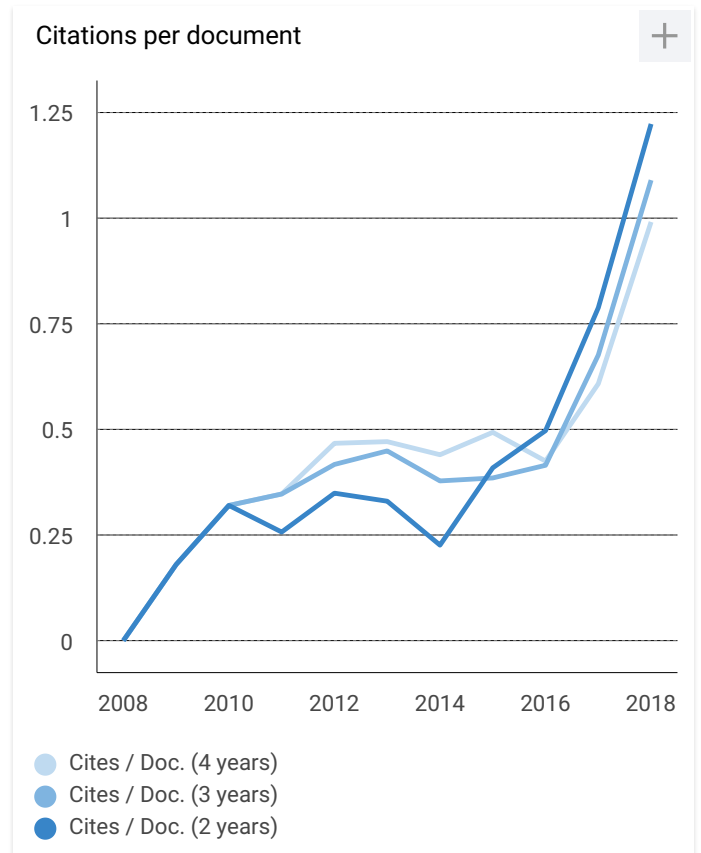
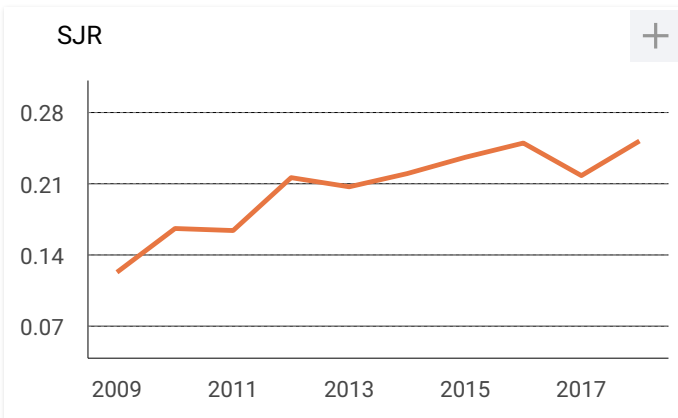
18

H Index

Quartiles

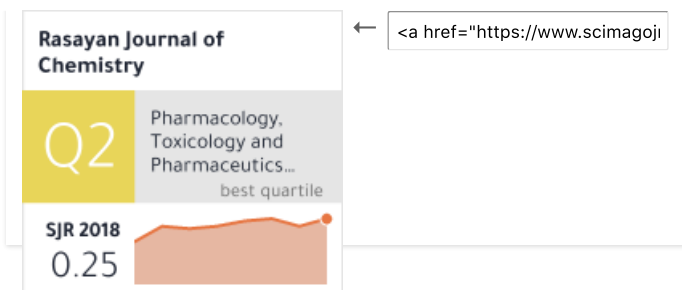


Biochemistry
Chemical Engineering (miscellaneous)



Show this widget in your own website

Just copy the code below and paste within your html code:



S

Saronom Silaban 3 weeks ago

Dear, Elena Corera

How do I know if this Journal was indexed on Scopus in 2020 or not?

Thank you

reply

**Melanie Ortiz** 3 weeks ago

Dear Saronom, thank you very much for your comment, unfortunately we cannot help you with your request. We suggest you to consult the Scopus database directly. Remember that the SJR is a static image of a database (Scopus) which is changing every day. Best regards, SCImago Team

A

Asmaa B. Al Dabbagh 4 months ago

DEAR SIR

I want to publish my research in your magazine what are the publishing fees,

How long it takes to respond to the search, And how to send the search

reply

A

Asmaa B. Al dabbagh 4 months ago

Dear Sir

I want to send my paper in your journal please tell me the cost of publishing?

reply

Leave a comment

Name

Email

(will not be published)

 I'm not a robot
reCAPTCHA
[Privacy](#) - [Terms](#)

Submit

The users of Scimago Journal & Country Rank have the possibility to dialogue through comments linked to a specific journal. The purpose is to have a forum in which general doubts about the processes of publication in the journal, experiences and other issues derived from the publication of papers are resolved. For topics on particular articles, maintain the dialogue through the usual channels with your editor.

Developed by:



Powered by:



Follow us on @ScimagoJR

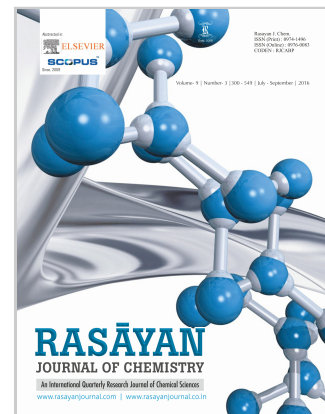
Scimago Lab, Copyright 2007-2019. Data Source: Scopus®

EST MODUS IN REBUS
Horatio (Satire 1.1.106)

Rasayan J. Chem.
 ISSN: 0974-1496(Print)
 ISSN: 0976-0083(Online)
 CODEN: RJCABP
 Frequency: March, June, September & December

HOME | ABOUT US | EDITORIAL BOARD | SUBSCRIPTION | ABSTRACTED | CONTACT | PUBLICATION PROCESS | MANUSCRIPT SUBMISSION

Editorial Board



Editor-in-Chief:

Prof. (Dr.) Sanjay K. Sharma

Managing Editor:

Dr. Pratima Sharma

Editorial Office:

23 'Anukampa', Janakpuri,

Opp. Heerapura Power Stn.,

Ajmer Road, Jaipur-302024 (India)

Mobile: 09414202678, 9001699997

E-mail: rasayanjournal@gmail.com

Nnabuk Okon EDDY

Professor, Department of Chemistry, Ahmadu Bello University, Zaria, Kaduna State, Nigeria.

Goutam BRAHMACHARI

Professor, Chemistry Department, Visva-Bharati University, Santiniketan-731235, India.

Man SINGH

Professor and Dean, school of Chemical sciences, Gujrat central University, Gandhinagar, Gujrat, India

S. P.MOULIK

Emeritus Professor & Hony Scientist (INSA), Centre for Surface Science, Department of Chemistry, Jadavpur university, Kolkata – 700 032, India

Fernando de Carvalho DA SILVA

Professor Adjunto III, UNIVERSIDADE FEDERAL FLUMINENSE Instituto de Química, Departamento de Química Orgânica, Sala 509, Centro, Niterói-RJ, Brazil.

Abdulahakim A. AHMED Department of Chemistry, Faculty of Science, University of Benghazi- Libya, P.O.Box 1308

Roberto BALLINI

School of Science and Technology, University of Camerino – Italy

Marei Mailoud EL-AJAILY

University of Benghazi, Faculty of Science, Department of Chemistry, Benghazi, Libya

Hakan ARSLAN

Department of Chemistry, Faculty of Arts and Science, Mersin University, Mersin, TR-33343, Turkey

R.V. SINGH

Ex Professor, Department of Chemistry, University of Rajasthan, Jaipur, India

Susheel MITTAL

Senior Professor, School of Chemistry & Biochemistry, Thapar Institute of Engineering & Technology (Deemed to be University), Bhadson Road, Patiala-147004, India

V.K. GARG

Professor and Dean Centre for Environmental Science and Technology School of Environment and Earth Sciences Central University of Punjab, Bathinda-151001, India

Soro YAYA

Laboratoire des Procédés Industriels de Synthèse, de l'Environnement et des Energies Nouvelles (LAPISEN), Institut National Polytechnique (INP-HB), Yamoussoukro, BP 991 Yamoussoukro(Côte d'Ivoire)

William E. ACREE

Department of Chemistry, 1155 Union Circle Drive #305070, University of North Texas, Denton, TX 76203-5017 (USA)

Junfang ZHAO

Division of Pathology and Laboratory Medicine, Cincinnati Children's Hospital Medical Center, 3333 Burnet Ave. Cincinnati, OH, USA 45208

Catalina PISOSCHI

Department of Biochemistry, University of Medicine and Pharmacy, Craiova, Romania

Virendra GOMASE

Department of Bioinformatics, Padmashree Dr. D.Y. Patil University, Navi Mumbai, 400614, India

Pavel MOKREJS

Department of Polymeric Engineering Tomas Bata University, 762 72, Zlin, The

Current Issue

Archive Issues

Downloads

RJC Conferences

Dong CHEN

Department of Engineering, Indiana University
- Purdue University Fort Wayne, 2101 E
Coliseum Blvd Fort Wayne, IN 46805, USA

Giusy LOFRANO

Department of Environment, University of
Salerno, Salerno, Italy

Essam Khamis Ibrahim ALL-HANASH

City of Scientific Research and Technological
Applications (SRTA-City). Universities and
Research Center District, New Borg El- Arab,
Egypt. P.O. Box: 21934 ALEX

William Aperador CHAPARRO

School of Engineering, Universidad Militar
Nueva Granada, Bogotá-111121, Colombia

Czech Republic

Nicola D'ANATONA

National Research Council of Italy,
institute of Biomolecular Chemistry, Italy

Sadanandan E. VELU

Department of Chemistry, The University
of Alabama at Birmingham, 901, 14th
Street South, Birmingham, AL - 35294 –
1240

Y. Frank CHENG

Corrosion and Pipeline Engineering
Laboratory, Dept. of Mechanical and
Manufacturing Engineering, Schulich
School of Engineering, University of
Calgary, Calgary, Alberta, Canada T2N
1N4

Tingyue GU

Dept. of Chemical and Biomolecular
Engineering Ohio University Athens, Ohio
45701, USA

Surendra Prasad

School of Biological and Chemical
Sciences, The University of the South
Pacific, Suva, FIJI

[Home](#)
[About us](#)
[Contact](#)
[Archive](#)

[Editorial Board](#)
[Author's Guidelines](#)
[Subscription](#)
[Manuscript Submission](#)

[Current Issue](#)
[Abstracted](#)

Copyright 2012-16 RJC. All rights reserved. Website by [Ubitech Solutions](#).

0001468661

Rasayan J. Chem.

ISSN: 0974-1496(Print)

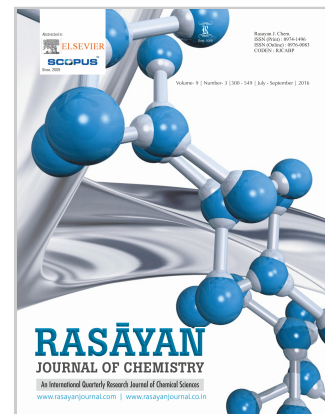
ISSN: 0976-0083(Online)

CODEN: RJCABP

Frequency: March, June, September & December

HOME | ABOUT US | EDITORIAL BOARD | SUBSCRIPTION | ABSTRACTED | CONTACT US | PUBLICATION PROCESS | MANUSCRIPT SUBMISSION

Current Issue



Volume 12, Number 4, October-December 2019

PREPARATION AND CHARACTERIZATION OF CuInSe₂ NANO-PARTICLES

Purushotham Endla

Rasayan J. Chem, 12 (4), 1676 - 1680 (2019)

Keywords: X-ray Diffraction, Particle Size, Lattice Strain, Debye-Waller Factor, Vacancy Formation Energy.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245132>

OXIDATION OF POLYETHYLENE GLYCOL-200 BY POTASSIUM PERIODATE IN ALKALINE MEDIUM: A KINETIC STUDY

K. V. S. Koteswara Rao and R. Venkata Nadh

Rasayan J. Chem, 12 (4), 1681- 1687 (2019)

Keywords: Kinetics, Oxidation, Polyethylene Glycol, Potassium Periodate, Alkaline Medium

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245433>

SPECTROSCOPIC, MECHANICAL AND DIELECTRIC STUDIES ON FILMS OF EPOXYRESIN IN DIETHYLENTRIAMINE

M.V.L. Kumari, A. Kaviarasi, A.R. Prabakaran and A. Anandavadivel

Rasayan J. Chem, 12 (4), 1688- 1692 (2019)

Keywords: FTIR, Tensile Strength, Flexural Strength, Toughness, Curing Agent, Epoxy Resin, Diethylenetriamine

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245384>

SIMULTANEOUS ASSAYS OF SULFAMETHOXAZOLE AND TRIMETHOPRIM IN SUSPENSION DOSAGE FORM By THREE ANALYTICAL METHODS OF UV SPECTROPHOTOMETRY

Muchlisyam ,E.S.B Raesa, R. Dathita and S.P. Richa

Rasayan J. Chem, 12 (4), 1693 - 1700 (2019)

Keywords: Three Methods, Spectrophotometry, Sulfamethoxazole, Trimethoprim, Validation.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245428>

THERMO-CATALYTIC PROCESSING OF POLYMER WASTE OVER CATALYSTS ON THE BASIS OF NATURAL ZEOLITE FROM THE TAYZHUZGEN FIELD (KAZAKHSTAN) MODIFIED BY MOLYBDENUM

Current Issue

Archive Issues

Downloads

RJC Conferences

Y. A. Aubakirov , L. R. Sassykova, Zh. Kh. Tashmukhambetova F. Zh. Akhmetova , S. Sendilvelan , K.O. Sharipov , Sh. N. Kubekova , A.A. Batyrbayeva , R.N. Azhigulova, R. G. Ryskaliyeva , A.K. Zhussu

Rasayan J. Chem, 12 (4), 1701 - 1709 (2019)

Keywords: Polymer Wastes, Natural Tayzhuzgen Zeolite, Hydrogenation Thermocatalytic Recycling, Molybdenum, Kumkol Oil Field, Motor Fuels

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245435>

SOLAR LIGHT ACTIVE CeO₂/rGO HYBRID PHOTOCATALYST FOR DIRECT VIOLET 51 DEGRADATION

A. Loganathan, A. Sivakumar , B. Murugesan, and P. Sivakumar

Rasayan J. Chem, 12 (4), 1710- 1724 (2019)

Keywords: Carica papaya, CeO₂/rGO Hybrid, Photocatalytic Degradation, Fractional Order, Direct Violet 51

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245351>

SYNTHESIS, CHARACTERIZATION AND ANTIMICROBIAL SCREENING OF SOME NOVEL 5-(BENZOFURAN-2-YL)-N'-(2- SUBSTITUTED-4-OXOTHIAZOLIDIN-3-YL)-1-PHENYL-1HPYRAZOLE-3-CARBOXAMIDE DERIVATIVES

M. Idrees, S. Kola and N. J. Siddiqui

Rasayan J. Chem, 12 (4), 1725- 1733 (2019)

Keywords: Benzylidene, Benzofuran-2-yl, Carbohydrazone, Carbohydrazide, Carboxamide

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245467>

EFFECTS OF FIVE GREEN INHIBITORS OF CONTROLLING BARITE CRYSTAL GROWTH IN FLOW-INDUCED VIBRATION IN PIPE

N. Karaman , W. Mangestiyono , S. Muryanto , J. Jamari and A. P. Bayuseno

Rasayan J. Chem, 12 (4), 1734 - 1743 (2019)

Keywords: Mechanical Vibration, XRPD Analysis, SEM Analysis, Barite, Green Chemical Inhibitors

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245380>

EFFECT ON PROPERTIES OF CONCRETE IN PARTIAL REPLACEMENT OF FINE AGGREGATE BY STEEL SLAG AND CEMENT BY METAKAOLIN

R. Padmapriya, V.K. Bupesh Raja , V. Ganesh Kumar and J.Baalumurugan

Rasayan J. Chem, 12 (4), 1744 - 1751 (2019)

Keywords: Steel Slag, Metakaolin, Concrete, Paver Block, Compressive Strength

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245211>

GREEN SYNTHESIS OF COPPER NANOPARTICLES USING Uncaria gambir ROXB. LEAF EXTRACT AND ITS CHARACTERIZATION

N. Elisma , A. Labanni , Emriadi , Y. Rilda , M. Asrofi and S. Arief

Rasayan J. Chem, 12 (4), 1752- 1756 (2019)

Keywords: Green synthesis, copper nanoparticles, Uncaria gambir Roxb., bioreducing agent, chemical reduction.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245347>

SYNTHESIS OF ALGAE BIODIESEL USING K₂CO₃/ZnO HETEROGENEOUS BASE CATALYST AND ITS CHARACTERISATION

Jayashri Nair, Y.V.V.Satyanarayana Murthy , M.Ramesh and Gautam Edeira

Rasayan J. Chem, 12 (4), 1757- 1765 (2019)

Keywords: Heterogeneous Catalyst, Algae Biodiesel, Transesterification, Characterization.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245273>

EFFECT OF ELABORATION pH ON THE ELECTROACTIVITY OF CASSAVA STARCH SOLID BIOPOLYMER ELECTROLYTE FILMS

Alvaro Arrieta Almario, Carlos García Mogollón and Enrique Combatt Caballero

Rasayan J. Chem, 12 (4), 1766- 1773 (2019)

Keywords: Cassava, Solid Biopolymer Electrolyte, Electrochemistry, Starch, Electroactivity.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245302>

MOLECULAR INTERACTIONS IN BINARY LIQUID MIXTURES CONTAINING BENZYL BENZOATE

A.Nagarjuna, K.V.Yamini Kanth , G. Balaji Prakash and Debashis Das

Rasayan J. Chem, 12 (4), 1774- 1782 (2019)

Keywords: Speed of Sound, Density, Molar Volume, Free Length, R-K polynomial.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245469>

GROWTH AND CHARACTERIZATION OF COBALT AND SULPHAMIC ACID DOPED AMMONIUM DIHYDROGEN ORTHOPHOSPHATE: A POTENTIAL NONLINEAR OPTICAL MATERIAL

K.Kumar , K. Selvaraju , P. Baskaran and N. Senthilvelan

Rasayan J. Chem, 12 (4), 1783- 1791 (2019)

Keywords: Solution Growth Technique, X-Ray Diffraction, NLO Material, FT-IR.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1232035>

ALGINATE-MODIFIED SAPONITE AND STUDY FOR UREASLOW RELEASED FERTILIZER APPLICATION

Wildan Faishol , Dwiarto Rubiyanto , Laemthong Chuenchom and Is Fatimah

Rasayan J. Chem, 12 (4), 1792- 1802 (2019)

Keywords: Adsorption, Clay, Urea, Polymer-Clay Composite.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245386>

COMPARATIVE STUDIES OF ETHYLENE VINYL ACETATE FILMS WITH VARIOUS SILICATE NANOCOMPOSITES

A. Kaviarasi, M.V.L. Kumari, A.R. Prabakaran and A. Anandavadivel

Rasayan J. Chem, 12 (4), 1803- 1809 (2019)

Keywords: EVA, MMT (Montmorillonite), Sodium Silicate, FTIR, Thermogravimetry, Thermal stability

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245362>

SYNTHESIS AND ANTIBACTERIAL ACTIVITY OF 3-(2-(5- AMINO-1H-PYRAZOL-4-YL) THIAZOL-4-YL)-2H-CHROMEN-2-ONE AND ITS DERIVATIVES

M. Shivanand , P.Vijaya Kumar and V. Ravikumar

Rasayan J. Chem, 12 (4), 1810- 1815 (2019)

Keywords: Coumarin, Thiazole, Pyrazole, Thiazolyl-pyrazoles, Cyclisation reaction.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245375>

ION-ASSOCIATION AND ION-SOLVATION BEHAVIOR OF METHYL, PHENYL AND BENZYL TRIMETHYL AMMONIUM CHLORIDE IN DMSO-WATER MIXTURES AT 298K

V. Radhika, J. Sunil Kumar , N. Srinivas and P. Manikymba

Rasayan J. Chem, 12 (4), 1816 - 1821 (2019)

Keywords: Association Constant, Contact Ion Pair, Limiting Molar Conductance, Free Energy.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245130>

ISOLATION OF QUERCITRIN FROM *Dendrophthoe pentandra* (L.) Miq LEAVES AND ITS ANTIOXIDANT AND ANTIBACTERIAL ACTIVITIES

Rini Hardiyanti , Lamek Marpaung, I. Ketut Adnyana and Partomuan Simanjuntak

Rasayan J. Chem, 12 (4), 1822- 1827 (2019)

Keywords: Dendrophthoe pentandra (L.) Miq, Flavonoid, Quercitrin, Antioxidant, Antibacterial

DOI: <http://dx.doi.org/10.31788/RJC.2019.1235353>

EVALUATION OF GROUNDWATER QUALITY IN PREMONSOON AND POST-MONSOON SEASONS OF A YEAR USING WATER QUALITY INDEX (WQI)

V. Dhilleswara Rao, M.V. Subba Rao and M.P.S.Murali Krishna

Rasayan J. Chem, 12 (4), 1828- 1838 (2019)

Keywords: Water Quality Index, Groundwater, Physicochemical parameters, correlation, Gara Mandal.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245394>

THE CHEMICAL PROPERTIES COMPARATIVE OF YEAST HYDROLYSATE ENZYMATIC (YHE) FROM YEAST THAT FERMENTED IN RICE FLOUR VARIATION

R. Agustini , I. G. M. Sanjaya and A. Widodo

Rasayan J. Chem, 12 (4), 1839- 1849 (2019)

Keywords: Chemical Composition, Rice, Yeast, Yeast Hydrolysate Enzymatic, Extranx Yeast.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245314>

MICROWAVE ASSISTED SYNTHESIS OF N-(1-ISOPROPYL-2- OXOINDOLIN-5-YL) SUBSTITUTED AMIDE DERIVATIVES AND THEIR ANTIMICROBIAL ACTIVITY

P. Shankaraiah, V. Sunitha , A. Kishore Kumar and R. Madhu

Rasayan J. Chem, 12 (4), 1850- 1856 (2019)

Keywords: Benzimidazole, Heterocyclic, HATU, EDC.HCl.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245445>

PREPARATION OF HYDROGEL NANOCOMPOSITE CONTAINING GOLD NANOPARTICLES WITH UNIQUE SWELLING/DESWELLING PROPERTIES

E.R.Wikantyasning, M.Mutmannah, Z.Cholisoh , I.Hairunisa, M.F.A. Bakar and M. Da'i

Rasayan J. Chem, 12 (4), 1857- 1863 (2019)

Keywords: Nanoparticles, Sensor, Responsive Hydrogel

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245209>

A NOVEL POROUS ACTIVATED CARBON COMPOUND PREPARED FOR ADSORPTION OF COBALT (CO (II)) FROM AQUEOUS SOLUTION FOR ENVIRONMENTAL POLLUTION MITIGATION

Pramod Kamble, Rupali H. Landge , Abhijit N. Lande and Vinayak P. Dhulap

Rasayan J. Chem, 12 (4), 1864- 1871 (2019)

Keywords: Cobalt (Co (II)), Porous activated carbon, Bio-adsorbent, Plant material

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245324>

AN EXPERIMENTAL STUDY ON SURFACE MODIFIER ASSISTED EXFOLIATION OF MOLYBDENUM DISULPHIDE IN A MIXED SOLVENT

Kalyani Sreekumar, B. Bindhu, K. Veluaraja and Reena V. L.

Rasayan J. Chem, 12 (4), 1872- 1880 (2019)

Keywords: MoS₂, Exfoliation, Li-AHA, Photoluminescence, Antimicrobial

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245332>

CYCLIC VOLTAMMETRIC AND AFM STUDY OF CORROSION INHIBITION AND ADSORPTION BEHAVIOR OF SODIUM DODECYL SULPHATE-ZN²⁺ ON CARBON STEEL IN AQUEOUS MEDIUM

V. R. Nazeera Banu, V. Ramesh Babu, C. Kayalvizhi and K. Saravanan

Rasayan J. Chem, 12 (4), 1881- 1888 (2019)

Keywords: SDS, Corrosion Inhibition, Synergistic Effect, Carbon Steel.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245339>

THE FEASIBILITY OF SAGO BARK (*Metroxylon sagu*) IN Cu(II) REMOVAL: BATCH AND FIXED BED COLUMN EVALUATION

S. Fauziah, H. Aziz, D. Dahlan and R. Zein

Rasayan J. Chem, 12 (4), 1889- 1900 (2019)

Keywords: Adsorption, Batch, Column, Cu(II), Sago Bark

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245444>

PHYTOCHEMICAL SCREENING AND ANTIOXIDANT ACTIVITY OF EXTRACTS OF *Xanthium strumarium*, *Chrysanthemum* AND THEIR MIXTURE

M. O. Malpani, P. R. Rajput, K. V. Chinchole, S. S. Kapse and K. S. Ambarkar

Rasayan J. Chem, 12 (4), 1901- 1908 (2019)

Keywords: Asteraceae species, Phytochemical Screening, DPPH Assay, Antioxidant Activity

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245447>

THERMODYNAMIC AND ACOUSTIC STUDIES ON VARIOUS BINARY LIQUID MIXTURES

T. Kalimulla, D. Das, M. Gowrisankar, K. Govinda Rao and Shaik. Babu

Rasayan J. Chem, 12 (4), 1909- 1918 (2019)

Keywords: Speed of Sound, Viscosity, Density, R-K polynomial, Partial and Excess Partial Molar Volumes.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245481>

TOSMIC REAGENT: AN EXCELLENT PRECURSOR IN THE SYNTHESIS OF BIOLOGICALLY ACTIVE HETEROCYCLES

Damilola V. Aderohunmu, Taiwo T. Odotola, Olayinka O. Ajani and Ezekiel F. Adebisi

Rasayan J. Chem, 12 (4), 1919- 1926 (2019)

Keywords: Heterocyclic Motifs, Isocyanides, Bioactive Molecule, Cyclization, Total Synthesis.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245315>

ANTAGONISTIC MECHANISM OF α -MANGOSTIN DERIVATIVES AGAINST HUMAN ESTROGEN RECEPTOR A OF BREAST CANCER USING MOLECULAR DYNAMICS SIMULATION

M. Muchtaridi, S. Megantara, D. Dermawan and M. Yusuf

Rasayan J. Chem, 12 (4), 1927- 1934 (2019)

Keywords: α -Mangostin, Breast Cancer, hER α , Molecular Docking, Molecular Dynamics

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245391>

PREPARATION OF CHITOSAN PCL/PLA NANOCOMPOSITE BLENDED WITH BENTONITE FROM ACEH, INDONESIA

Ridwan, B. Wirjosentono, Tamrin and T. Rihayat

Rasayan J. Chem, 12 (4), 1935- 1941 (2019)

Keywords: Polycaprolactone, Poly Lactic Acid, Bentonite, Nanocomposite, Biodegradability.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245282>

GREEN SYNTHESIS OF NiFe₂O₄ SPINEL FERRITES MAGNETIC IN THE PRESENCE OF Hibiscus rosa-sinensis LEAVES EXTRACT: MORPHOLOGY, STRUCTURE AND ACTIVITY

Rahmayeni, J. Putri, Y. Stiadi, Zilfa and Zulhadjri

Rasayan J. Chem, 12 (4), 1942- 1949 (2019)

Keywords: NiFe₂O₄, Hydrothermal, Hibiscus rosa-sinensis, Magnetic, Photocatalytic.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245304>

CHARACTERIZATION OF TUNGSTEN/TITANIUM CARBIDE COATINGS DEPOSITED BY CATHODIC ARC DEPOSITION FOR HYDROGEN EVOLUTION

J. Bautista-Ruiz, J.C. Caicedo and A. Chaparro

Rasayan J. Chem, 12 (4), 1950- 1955 (2019)

Keywords: Hydrogen, Coating, Voltammetry, Roughness.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245390>

UTILIZATION OF UNWANTED TERRESTRIAL WEEDS FOR REMOVAL OF DYES

A. Singh , S. Kumar , V. Panghal , S. S. Arya and S. Kumar

Rasayan J. Chem, 12 (4), 1956- 1963 (2019)

Keywords: Adsorption, Wastewater, Congo Red, Methylene Blue, Crystal Violet, Adsorbent.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245401>

SYNTHESIS OF HYDROXYAPATITE FROM AVOCADO FRUIT PEEL AND ITS APPLICATION FOR HEXAVALENT CHROMIUM REMOVAL FROM AQUEOUS SOLUTIONS - ADSORPTION ISOTHERMS AND KINETICS STUDY

Suman Pawar, Thomas Theodore and Poornima G. Hiremath

Rasayan J. Chem, 12 (4), 1964- 1972 (2019)

Keywords: Hydroxyapatite, Avocado Peel, Isotherms, Adsorption Kinetics.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245425>

EFFECTS OF THERMAL ENERGY, MECHANICAL ENERGY, AND SOLVENT ON CIPROFLOXACIN HYDROCHLORIDE MONOHYDRATE PHYSICOCHEMICAL PROPERTIES

Indah Widyastuti, Ahmad Ainurofiq and Sundani Nuroso Soewandhi

Rasayan J. Chem, 12 (4), 1973- 1984 (2019)

Keywords: Ciprofloxacin HCl Monohydrate, Thermal Energy, Mechanical Energy, Solvent, Physicochemical property

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245426>

EPINEPHRINE SENSOR DEVELOPED ON MWCNT MODIFIED REDOX BEHAVING METAL COMPOSITE ELECTRODE

G. Sivasankari, S. Boobalan , P. Mekala and S. Gowri

Rasayan J. Chem, 12 (4), 1985- 1991 (2019)

Keywords: MWCNT/Cys/NiHCF, Epinephrine, Composite electrode, Sensor, Cysteamine

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245430>

PHYTOCHEMICAL SCREENING AND ANTIHYPERGLYCEMIC ACTIVITY OF ETHANOLIC EXTRACT OF *Coriandrum sativum* L. LEAF

S.M. Sinaga, G. Haro , S. Sudarmi and Iksen

Rasayan J. Chem, 12 (4), 1992- 1996 (2019)

Keywords: Coriander, Alloxan, Antihyperglycemic, Extract, Ethanolic

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245451>

CHEMO SELECTIVE, ROOM TEMPERATURE AND SOLVENT FREE SYNTHESIS OF THIO-ESTERS USING EFFECTIVE SYNERGISTIC CATALYTIC SYSTEM

Hari R. Pawar , Narendra R. Kamble and Vinod T. Kamble

Rasayan J. Chem, 12 (4), 1997- 2004 (2019)

Keywords: Niobium Pentachloride, Silver Salt, Thiols, Acyl Chlorides.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245381>

SYNTHESIS, CHARACTERISATION AND ANTIMICROBIAL ACTIVITY OF NEW NICOTINAMIDE-THIAZOLE DERIVATIVES

H. Venkatasubramanian, Sarojkumar Sha , S. Hemalatha and D. Easwaramoorthy

Rasayan J. Chem, 12 (4), 2005- 2010 (2019)

Keywords: Nicotinamide, Thiazole, Antimicrobial Activity, Amide Bond

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245321>

INTERACTIONS OF CEFTIOFUR SODIUM WITH H2- RECEPTOR ANTAGONIST

Runjhun Tandon , Nitin Tandon, Raakhi Gupta and Neelima Gupta

Rasayan J. Chem, 12 (4), 2011- 2022 (2019)

Keywords: Cephalosporins, Ranitidine, Absorbance, H2-Receptor Antagonists, Bioavailability

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245363>

ZINC-OXIDE NANOPARTICLES AS FACILE CATALYST FOR RAPID SYNTHESIS OF 5-METHYL-4-(2-(3-METHYL-4-NITROISOXAZOL-5-YL)-1-ARYLETHYL)-1H-PYRAZOL-3-OLS IN AQUEOUS MEDIUM

P. Usharani and N. Madhavi

Rasayan J. Chem, 12 (4), 2023- 2029 (2019)

Keywords: Heterogeneous Catalysis, Zinc-oxide Nanoparticles, Multi-component Reaction, 3-Methyl-4-nitro-5- alkenylisoxazoles, Pyrazole.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245468>

MOLECULAR DOCKING STUDIES OF PHYTOCOMPOUNDS WITH TRANSCRIPTIONAL FACTORS IN HEPATOCELLULAR CARCINOMA

Sushma S. Murthy and T. Bala Narsaiah

Rasayan J. Chem, 12 (4), 2030- 2038 (2019)

Keywords: Hepatocellular Carcinoma, Phytocompounds, Transcriptional Factors, Molecular Docking, AutoDockVina

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245475>

THE APPARENT AND PARTIAL MOLAR VOLUMES OF SODIUM CARBOXYMETHYLCELLULOSE IN ACETONITRILE-WATER MIXED SOLVENT MEDIA

P. Nandi and C. Das

Rasayan J. Chem, 12 (4), 2039- 2046 (2019)

Keywords: Sodium Carboxymethylcellulose, Mixed Solvent Media, Partial Molar Volume, Counterion Binding, Ion-Solvent Interactions

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245388>

SYNTHESIS AND RESEARCH OF POLYMER HYDROGELS ON THE BASIS OF HYDROLYSED POLYACRYLONITRILE AND EPICHLORHYDRIN

R. Zh. Omirova, A. A. Bolysbek , Sh. D. Shirinov and A.T. Dzhalilov

Rasayan J. Chem, 12 (4), 2047- 2051 (2019)

Keywords: HYPAN (hydrolyzed polyacrylonitrile), Polymers, Temperature, Epichlorohydrin, Hydrophilic

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245331>

Bi(OTf)₃ PROMOTED MICROWAVE SYNTHESIS OF 2-ARYL, 5-SUBSTITUTED 1,3,4-OXADIAZOLES AND EVALUATION OF THEIR ANTICANCER ACTIVITY

Baby Ramana Mutchu , Siva Nagi Reddy Mule , Krishna Murthy Mannam and Hari Babu Bollikolla

Rasayan J. Chem, 12 (4), 2052- 2057 (2019)

Keywords: 2-Aryl,5-disubstituted-1,3,4-oxadiazoles, 1,3,4-Oxadiazoles, Bismuth Triflate, Aryl Carboxylic Acid Hydrazide, Aryl Carboxylic Acid Chlorides.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245237>

GREEN CHEMISTRY FOR THE PREPARATION OF BIO-BASED OIL FROM CATFISH FAT USING A CAVITATION SYSTEM

Hong Tran Thi, Tien Nguyen Minh, Do Quy-Diem, Trung Nguyen Kim, Thoa Dao Thi Kim and Tan Phan Minh

Rasayan J. Chem, 12 (4), 2058- 2064 (2019)

Keywords: Catfish Fat, Cavitation, Bio-based Oil, Bio-lubricant

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245289>

OVERVIEW OF PHYTOCHEMICAL COMPOUNDS AND PHARMACOLOGY ACTIVITIES OF CRATOXYLUM GENUS

D. Juanda, I. Fidrianny, K. Ruslan, and M. Insanu

Rasayan J. Chem, 12 (4), 2065- 2073 (2019)

Keywords: Cratoxylum, Guttiferae, Xanthone, Traditional Uses, Pharmacological Activities, Phytochemical Compounds

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245303>

PROTEASE ACTIVITY AND CHARACTERIZATION OF BROMELAIN EXTRACT OF PINEAPPLE (*Ananas comosus* (L.) Merr) CROWN FROM SUBANG, INDONESIA

N. M. Saptarini, D. Rahayu and S.A.F. Kusuma

Rasayan J. Chem, 12 (4), 2074- 2081 (2019)

Keywords: Casein, First-Order Thermal Inactivation, Precipitation, Specific Character

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245319>

SYNTHESIS, BIOLOGICAL EVALUATION AND IN SILICO STUDIES OF PYRAZOLINE AND ITS METAL COMPLEXES AS ANTI-AMOEBIC AGENTS

I. Irfan, M. Irfan, M. Abid and A. Azam

Rasayan J. Chem, 12 (4), 2082- 2096 (2019)

Keywords: Pyrazoline, Metal complexes, E. histolytica, Docking and ADMET studies.

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245320>

CHEMILUMINESCENCE Y3O2: Bi3+ INDUCED BY NITROGEN OXIDE

S. H. Shigalugov, Yu. I. Tyurin and D. V. Dubrov

Rasayan J. Chem, 12 (4), 2097- 2102 (2019)

Keywords: Crystalline Phosphorus, Nitrous Oxide, Luminescence Kinetics, Luminescence Spectrum, Yttrium Oxide

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245413>

EFFECT OF MOLECULAR WEIGHT ON PROTON EXCHANGE MEMBRANES AND ITS APPLICATIONS WITH DIFFERENT DESIGN OF DUAL CHAMBERED MICROBIAL FUEL CELLS

S. Dharmadhikari, D. Ghime and V. Kumar

Rasayan J. Chem, 12 (4), 2103- 2110 (2019)

Keywords: Microbial Fuel Cells, Proton Exchange Membrane, Ion Exchange Capacity, Chemical Oxygen Demand

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245422>

PERFORMANCE OF PRE-CHLORINATION, COAGULATION AND ADSORPTION FOR CONTROLLING THE FORMATION OF CARCINOGENIC COMPOUND IN TREATED WATER

Euis Nurul Hidayah, Fauzul Rizqa and Okik Hendriyanto Cahyonugroho

Rasayan J. Chem, 12 (4), 2111- 2115 (2019)

Keywords: Organic matters, Pre-Chlorination, Coagulation, Adsorption, Chloroform

DOI: <http://dx.doi.org/10.31788/RJC.2019.1245472>

APPLICATION OF FLOWER COLOR VARIATIONS TO *Impatiens balsamina* L. AS AN ENVIRONMENTALLY FRIENDLY ACID-BASE INDICATOR*Nanik Siti Aminah , Andika Pramudya Wardana, Alfinda Novi Kristanti, Brilliana Via Safitri and Mafalda Rosa*

Rasayan J. Chem, 12 (4), 2116- 2123 (2019)

Keywords: Acid-base, Green Chemistry, *Impatiens balsamina* L., Natural Indicator, Titration**DOI:** <http://dx.doi.org/10.31788/RJC.2019.1245498>**THERMO-OPTICAL AND WOUND HEALING PROPERTIES OF CERTAIN NEW POLY(ESTER AMIDES)***V. Chitra and D. Roopsingh*

Rasayan J. Chem, 12 (4), 2124- 2131 (2019)

Keywords: Poly(ester amides), 2,5-Pyridinedicarboxylic Acid, Direct Polycondensation, Characterization; LC Properties, Wound Scratch Assay.**DOI:** <http://dx.doi.org/10.31788/RJC.2019.1245431>[Home](#)
[About us](#)
[Contact](#)
[Archive](#)[Editorial Board](#)
[Author's Guidelines](#)
[Subscription](#)
[Manuscript Submission](#)[Current Issue](#)
[Abstracted](#)Copyright 2012-16 RJC. All rights reserved. Website by [Ubitech Solutions](#).**0001468456**

Submit of Manuscript

20 messages

nanik siti aminah <nanik-s-a@fst.unair.ac.id>

Tue, Jul 30, 2019 at 2:07 PM

To: "RASĀYAN J. Chem." <rasayanjournal@gmail.com>

Cc: andika pramudya <andika.pramudya.wardana-2018@fst.unair.ac.id>, Andika PW <andikapw83@yahoo.com>, alfinda novi kristanti <alfinda-n-k@fst.unair.ac.id>

Dear Dr. sanjay K. Sharma, FRSC
Editor, Rasayan Journal of Chemistry

Good afternoon,
Greeting from Universitas Airlangga, Surabaya, Indonesia

Attach file, I send our manuscript for submitting to your journal.
Hopefully this manuscript will be publish.

Thank you for your kindness help and cooperation.


With best regard
Dr. Nanik Siti Aminah

Assoc. Professor on Natural Product Chemistry
Dept. of Chemistry
Fac. of Science and Technology
Universitas Airlangga

Vice Dean on Research and Partnership
Faculty of Science and Technology
Universitas Airlangga
Komplek Kampu C UNAIR
Jl. Ir. Soekarno
Surabaya-East Java
Indonesia
email address : nanik-s-a@fst.unair.ac.id

2 attachments

 **Rasayan Journal of Chemistry_Nanik Siti Aminah.docx**
3084K

 **Rasayan Journal of Chemistry_Nanik Siti Aminah.pdf**
2910K

RASĀYAN J. Chem. <rasayanjournal@gmail.com>

Wed, Aug 7, 2019 at 3:04 PM

To: nanik siti aminah <nanik-s-a@fst.unair.ac.id>

Dear Author,

Greetings from **RASĀYAN Journal of Chemistry**. [For authentic Source Details, please visit <https://www.scopus.com/sourceid/19400157518?origin=sbrowse>].

Thanks for sending your manuscript for possible Review and subsequent publication in RASĀYAN Journal of Chemistry.

Your manuscript is under **Preliminary Review**. After it, you'll be assigned you the **Manuscript Number**.

Thanks for contributing your research in RASAYAN Journal of Chemistry.

Best regards,

Dr. Sanjay K. Sharma, FRSC

Editor, **RASĀYAN Journal of Chemistry**

[Quoted text hidden]

--
Best Regards,

Editor, RASĀYAN J. Chem.

(SCOPUS, Elsevier indexed, Since 2008)

www.rasayanjournal.com | www.rasayanjournal.co.in

Contact: +91 9001699997, +91 9414202678

nanik siti aminah <nanik-s-a@fst.unair.ac.id>
To: andika pramudya <andika.pramudya.wardana-2018@fst.unair.ac.id>

Thu, Aug 8, 2019 at 11:28 AM

[Quoted text hidden]

--

[Quoted text hidden]

nanik siti aminah <nanik-s-a@fst.unair.ac.id>
To: "RASĀYAN J. Chem." <rasayanjournal@gmail.com>
Cc: andika pramudya <andika.pramudya.wardana-2018@fst.unair.ac.id>

Thu, Aug 15, 2019 at 11:45 AM

Dear

Dr. Sanjay K. Sharma, FRSC

Editor, **RASĀYAN Journal of Chemistry**

Good morning,

Greeting from Universitas Airlangga.

We are waiting for good news from you, about our manuscript.

Thank you

Best regard,

[Quoted text hidden]

--

[Quoted text hidden]

RASĀYAN J. Chem. <rasayanjournal@gmail.com>
To: nanik siti aminah <nanik-s-a@fst.unair.ac.id>

Sat, Aug 17, 2019 at 2:57 PM

Dear Author,

Thanks for submitting your valuable manuscript for the review and subsequent publication in **RASĀYAN Journal of Chemistry**, which is A SCOPUS (Elsevier) indexed, Since 2008* and UGC (India) approved International Research Journal of Chemical Sciences.

Your Manuscript No. is: RJC- 5498/2019. Please use this number always in any of your future correspondence with us.

Revision-1

1. Please refer the attached **SAMPLE PAPER** send your manuscript again, as **Revision-1** mentioning the assigned Manuscript No. in the subject line. **References in the paper must be STRICTLY formatted as per the TEMPLATE and SAMPLE PAPER.**
2. Also, please provide the Names with Complete Affiliation and Contact Details of **03 Potential Reviewers**(who can review your manuscript promptly.), If not sent with the submission, Then only, it would be considered for the review purpose. Remember, no reviewer should be from your own institution and at least one of them must be from out of your Country.

Best regards,

Dr. Sanjay K. Sharma, FRSC

Editor, **RASĀYAN Journal of Chemistry**

On Tue, Jul 30, 2019 at 12:37 PM nanik siti aminah <nanik-s-a@fst.unair.ac.id> wrote:

[Quoted text hidden]

[Quoted text hidden]

2 attachments

 **_RJC_Paper Submission_Template.docx**
24K

 **_SAMPLE PAPER.doc**
1025K

nanik siti aminah <nanik-s-a@fst.unair.ac.id>

Sun, Aug 18, 2019 at 3:16 AM

To: andika pramudya <andika.pramudya.wardana-2018@fst.unair.ac.id>, Andika PW <andikapw83@yahoo.com>

Mas Andika

Mohon dicek, apakah artikel mas Andika sudah sesuai?

Jika sudah dicek kabari saya. Saya akan kirim ulang, lengkap dengan reveiwernya.

Terimakasih

----- Forwarded message -----

From: **RASĀYAN J. Chem.** <rasayanjournal@gmail.com>

Date: Sat, Aug 17, 2019 at 2:57 PM

Subject: Re: Submit of Manuscript


To: nanik siti aminah <nanik-s-a@fst.unair.ac.id>

[Quoted text hidden]

--

[Quoted text hidden]

2 attachments

 **_RJC_Paper Submission_Template.docx**
24K

 **_SAMPLE PAPER.doc**
1025K

Andika PW <andikapw83@yahoo.com>
To: nanik siti aminah <nanik-s-a@fst.unair.ac.id>

Sun, Aug 18, 2019 at 4:42 AM

Bu Nanik berikut artikel Rasayan sudah saya cek dan perbaiki sesuai sample paper

[Quoted text hidden]

 **Rasayan Journal of Chemistry_Nanik Siti Aminah (2).docx**
3083K

nanik siti aminah <nanik-s-a@fst.unair.ac.id>
To: "RASĀYAN J. Chem." <rasayanjournal@gmail.com>
Cc: andika pramudya <andika.pramudya.wardana-2018@fst.unair.ac.id>

Thu, Aug 22, 2019 at 3:16 PM

Dear

Dr. Sanjay K. Sharma, FRSC
Editor, **RASĀYAN Journal of Chemistry**

Attach file, I send :

(1) the 1 revision of our manuscript (RJC- 5498/2019)

(2) Cover letter with suggested reviewer

**Hope all are complete. If you have any question or you need more information.
Please dont hesitate to contact me.**

Thank you for your kindness help and cooperation.


With best regard

[Quoted text hidden]

--

[Quoted text hidden]

2 attachments

 **Rasayan Journal of Chemistry_Nanik Siti Aminah (2).docx**
3083K

 **COVER LETTER_RASAYAN_ANDIKA.docx**
70K

RASĀYAN J. Chem. <rasayanjournal@gmail.com>
To: nanik siti aminah <nanik-s-a@fst.unair.ac.id>
Cc: andika pramudya <andika.pramudya.wardana-2018@fst.unair.ac.id>

Thu, Aug 22, 2019 at 5:23 PM

Thanks, I have received it.

[Quoted text hidden]

nanik siti aminah <nanik-s-a@fst.unair.ac.id>
To: "RASĀYAN J. Chem." <rasayanjournal@gmail.com>

Mon, Sep 16, 2019 at 12:46 PM

Dear

Dr. Sanjay K. Sharma, FRSC
Editor, **RASĀYAN Journal of Chemistry**

Greeting from Universitas Airlangga.

Would you like to give us the progress of our manuscript "RJC- 5498/2019"

We are waiting for the good news from you.

Thank you for your kind help and cooperation.

With best regard,

[Quoted text hidden]

RASĀYAN J. Chem. <rasayanjournal@gmail.com>

Sun, Sep 22, 2019 at 2:45 PM

To: nanik siti aminah <nanik-s-a@fst.unair.ac.id>

Dear Author,

Greetings from **RASĀYAN Journal of Chemistry.**

Your paper **RJC-5498/2019** has been evaluated and can be published. We may inform you that we have a policy of Article Procession Charges, the cost of your paper shall be **USD 400 (USD Four Hundred only).**

The paper shall be published in **Vol.12, No.4, 2019 issue** of **RASĀYAN Journal of Chemistry.**

We are very happy to share with you that **SJR** powered by **SCOPUS (Elsevier)** announced the **Journal Ranking[#]** of Indian Journals abstracted in SCOPUS (Elsevier) and its matter of proud for us that **RASĀYAN J. Chem.** is on **2nd rank** in this list and having significantly high **H-index value = 17**; which is quite encouraging and a proved evidence of the international quality publications in this journal. See the Link-
<http://www.scimagojr.com/journalrank.php?category=1601&area=1600&country=IN&year=2017>

We assign **DOI** to every manuscript published in **RASAYAN J. Chem.** , which is assigned by **CrossRef**, an international organization known for quality control of scientific content. A manuscript linked with a DOI will be visible and searchable from all platforms and devices just on a click.

Kindly send payment within 10 days from the date of this mail, otherwise, we shall presume that you are not interested in publishing this paper with us and we shall take up other pending papers for publication in this issue.

You are requested to send the Filled attached APC Clearance Slip along with the Receipt of the payment.

Note:

1. *Formal acceptance letters and Comments of Reviewers for Revision shall be sent as soon as the payment is received.
2. You can send the payment either by Draft in favor of RASAYAN Journal of Chemistry, payable at Jaipur or cash deposit in Bank of Baroda in our account or NEFT from any Bank or Net banking.

Bank details:

A/C Holder: **RASĀYAN Journal of Chemistry, Jaipur**

A/C no.: **29720200000312**, Current Account

Bank: **Bank of Baroda, DCM Branch, Ajmer Road, Jaipur (Rajasthan) India**

SWIFT Code: **BARBINBBJAI**

IFS Code: **BARB0DCMAJM**

With Regards, your's-

Dr. Pratima Sharma

Managing Editor, RASĀYAN Journal of Chemistry

[Quoted text hidden]

 **_APC Clearance Slip.docx**
129K


nanik siti aminah <nanik-s-a@fst.unair.ac.id>
To: andika pramudya <andika.pramudya.wardana-2018@fst.unair.ac.id>

Sun, Sep 22, 2019 at 4:50 PM

----- Forwarded message -----

From: **RASĀYAN J. Chem.** <rasayanjournal@gmail.com>
Date: Sun, 22 Sep 2019, 14:45
Subject: Re: Submit of Manuscript
To: nanik siti aminah <nanik-s-a@fst.unair.ac.id>

[Quoted text hidden]

 **_APC Clearance Slip.docx**
129K

nanik siti aminah <nanik-s-a@fst.unair.ac.id>
To: "RASĀYAN J. Chem." <rasayanjournal@gmail.com>, andika pramudya <andika.pramudya.wardana-2018@fst.unair.ac.id>

Wed, Sep 25, 2019 at 10:36 AM

Dear

Dr. Pratima Sharma

Managing Editor, RASĀYAN Journal of Chemistry

I am glad to receive good news from you that our manuscript RJC-5498/2019 has been evaluated and can be published.

Attached file, I send **APC Clearance along with the Receipt of the payment from the bank.**

I hope to be well received and get good news from you soon.

Thank you for your kind help and cooperation.

With best regard,

[Quoted text hidden]

4 attachments

 **_APC Clearance Slip.docx**
132K

 **_APC Clearance Slip.pdf**
203K

 **PAYMENT RECEIPT_RASAYAN 2019.pdf**
592K

 **PAYMENT RECEIPT_RASAYAN 2019_2.pdf**
96K

RASĀYAN J. Chem. <rasayanjournal@gmail.com>
To: nanik siti aminah <nanik-s-a@fst.unair.ac.id>

Wed, Sep 25, 2019 at 6:21 PM

Acceptance Letter: RJC- 5498/2019

Dear Author,

Congratulations!

Your manuscript has been accepted for the publication in the latest issue of **RASĀYAN Journal of Chemistry**, i.e. **RJC, Vol.12, No.4, 2019.**

Herewith please find attached the **Acceptance Letter and Invoice** for your above-mentioned manuscript.

Also, find **Copyright Transfer Form and Letter of Original Work** attached. Please send these duly filled and signed docs as soon as possible.

Looking Forward.

Best regards,

Dr. Sanjay K. Sharma, FRSC
Editor, RASĀYAN Journal of Chemistry

[Quoted text hidden]

3 attachments

 **Acceptance Letter RJC-5498.pdf**
894K

2_Letter of Original work.doc

[Quoted text hidden]

nanik siti aminah <nanik-s-a@fst.unair.ac.id>
To: "RASĀYAN J. Chem." <rasayanjournal@gmail.com>

Thu, Oct 24, 2019 at 12:01 PM

Dear

Dear Dr. sanjay K. Sharma, FRSC
Editor, Rasayan Journal of Chemistry

Good afternoon

Would you like to give me information and response to my request by my last email on Sept 30, 2019, 9:34 AM.

Thank you

With best regard,

[Quoted text hidden]

RASĀYAN J. Chem. <rasayanjournal@gmail.com>
To: nanik siti aminah <nanik-s-a@fst.unair.ac.id>

Tue, Oct 29, 2019 at 11:40 AM

Please note:

1. The current issue of Rasayan Journal of Chemistry Vol.12 No. 4 is still open.
2. Your manuscript RJC-5498/2019 will be certainly published in this issue. Have patience.
3. Soon you'll receive the Galley Proofs of both the papers.

Hope , its fine with you now.

[Quoted text hidden]

nanik siti aminah <nanik-s-a@fst.unair.ac.id>
To: "RASĀYAN J. Chem." <rasayanjournal@gmail.com>

Tue, Oct 29, 2019 at 5:24 PM

Thank you for your info and I will be patient.

[Quoted text hidden]

nanik siti aminah <nanik-s-a@fst.unair.ac.id>
To: andika pramudya <andika.pramudya.wardana-2018@fst.unair.ac.id>, Andika PW <andikapw83@yahoo.com>

Fri, Feb 21, 2020 at 4:46 PM

----- Forwarded message -----

From: **nanik siti aminah** <nanik-s-a@fst.unair.ac.id>

Date: Wed, Sep 25, 2019 at 10:36 AM

Subject: Re: Submit of Manuscript

[Quoted text hidden]

[Quoted text hidden]

[Quoted text hidden]

4 attachments

 **_APC Clearance Slip.docx**
132K

 **_APC Clearance Slip.pdf**
203K

 **PAYMENT RECEIPT_RASAYAN 2019.pdf**
592K

 **PAYMENT RECEIPT_RASAYAN 2019_2.pdf**
96K

