

[ABOUT JOURNAL \(ABOUTJOURNAL.ASPX\)](#) [CONTACT US \(CONTACTUS.ASPX\)](#)



(Home.aspx)

Research Journal of Pharmacy and Technology

(Home.aspx)

ISSN

0974-360X (Online)

0974-3618 (Print)

HOME ▾ (HOME.ASPX)

PAST ISSUES (PASTISSUES.ASPX)

EDITORIAL BOARD (EDITORIALBOARD.ASPX) [Submit Article \(SubmitArticle.aspx\)](#) FOR AUTHORS MORE ▾

New Biotechnological Routes for Greener Bio-plastics from Seaweeds (AbstractView.aspx?PID=2020-13-5-74) [g](https://scholar.google.co.in/scholar?q=New+Biotechnological+Routes+for+Greener+Bio-plastics+from+Seaweeds)

Author(s): Thiruchelvi. R (search.aspx?key=Thiruchelvi. R)
(search.aspx?key=K. Shankari)

Email(s): thiruchelvi.se@velsuniv.ac.in (mailto:thiruchelvi.se@velsuniv.ac.in)

DOI: 10.5958/0974-360X.2020.00444.8 (<https://doi.org/10.5958/0974-360X.2020.00444.8>)
(<https://scholar.google.co.in/scholar?q=10.5958/0974-360X.2020.00444.8>)

Address: Thiruchelvi. R*, K. Kavitha, K. Shankari

Department of Bio-Engineering, School of Engineering, Vels Institute of Science, Technology and Advanced Studies, VISTAS, Pallavaram, Chennai-117.

*Corresponding Author

Published In: Volume - 13, Issue - 5, Year - 2020 ([Issues.aspx?VID=13&IID=5](#))

by AiSensy (<https://aisensy.com>)

Start chat



(<https://badge.dimensions.ai/details/doi/10.5958/0974-360X.2020.00444.8?domain=https://rjptonline.org>)



[View PDF](#)



[View HTML](#)

([HTMLPaper.aspx?](#)

Journal=Research

Journal of Pharmacy

and

ABSTRACT:

In 19th century plastic was chemically invented. Usage of plastics was gradually increased in 20th century. The wide range of its application is due to its versatile property. Plastic causes harmful effects on environment, human being, plants and animals. Annually more than 12.7million tons of plastic enter our ocean. To minimize the harmful effects of plastics biodegradable plastics are produced. Biodegradable plastics are synthesized by renewable sources. Seaweeds are used as a source for the production of bioplastics due to its high biomass and its growing ability in a wide range of environment. Polysaccharide is the important component for the making of bioplastics from seaweeds. These types of bioplastics are durable, less brittle and more resistant to microwave radiation. This review describes the role of seaweeds in the production of bioplastics.

Keywords: Plastics () Bioplastics () Seaweeds. ()

Cite this article:

Thiruchelvi. R, K. Kavitha, K. Shankari. *New Biotechnological Routes for Greener Bio-plastics from Seaweeds*. Research J. Pharm. and Tech 2020; 13(5):2488-2492. doi: 10.5958/0974-360X.2020.00444.8



Cite(Electronic):

Thiruchelvi. R, K. Kavitha, K. Shankari. *New Biotechnological Routes for Greener Bio-plastics from Seaweeds*. Research J. Pharm. and Tech 2020; 13(5):2488-2492. doi: 10.5958/0974-360X.2020.00444.8 Available on: <https://rjptonline.org/AbstractView.aspx?PID=2020-13-5-74>

RJPT

Hi,

How can I help you ?

REFERENCES:

- Pathak, Swati, C. L. R. Sneha and Blessy Baby Mathew. Bioplastics: Its timeline based scenario & challenges, Journal of Polymer and Biopolymer Physics Chemistry, 2(1) 2011.
- North, Emily J. and Rolf U. Halden. Plastics and environmental Health, 28(1); 2013.
- Andrade, Anthony L and Mike A. Neal. Applications and the Royal Society of London B: Biological Sciences, 364(1526), 2009.
- Thompson, Richard C., Charles J. Moore, Frederick S. vom Saal, and Shanna H. Swan. Plastics, the environment and human health: current consensus and future trends, Philosophical Transactions of the Royal Society B: Biological Sciences, 364(1526); 2009.
- Alshehri, Fatimah. Biodegradation of synthetic and natural plastic by microorganisms, Journal of Applied &

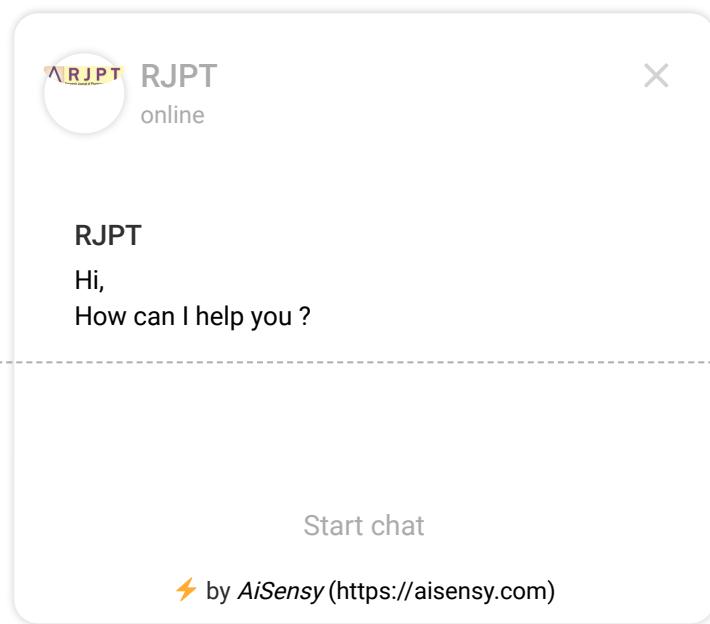
[Start chat](#)

⚡ by AiSensy (<https://aisensy.com>)

- Environmental Microbiology, 5(1); 2017.
6. Tokiwa, Yutaka, BuenaventuradaCalabia, Charles Ugwu and Seiichi Aiba. Biodegradability of plastics, International journal of molecular sciences, 10(9); 2009.
 7. Raziyahfathima M, Praseetha P K, Rimal Isaac R S. Microbial Degradation of Plastic Waste: A Review. J Pharm Chem BiolSci, 4(2); 2016.
 8. Alshehrei, Fatimah. Biodegradation of synthetic and natural plastic by microorganisms, Journal of Applied & Environmental Microbiology, 5 (1); 2017.
 9. Jabeen, Nafisa, Ishrat Majid and Gulzar Ahmad Nayik. Bioplastics and food packaging: A review, Cogent Food & Agriculture, 1(1); 2015.
 10. Kaila, V. C, Neena Raizada and V. Sonakya. Bioplastics. 2000.
 11. Jayachandran Venkatesh, sukumaran Anil, Se-Kwon Kim. Introduction To Seaweed Polysaccharides, (2017).
 12. Joshi, Arti, A. Y. Desai and Vijay Mulye. Seaweed resources and utilization: an overview, Biotech. Express 2 (22); 2015.
 13. Rajendran, N., Sharanya Puppala, M. Sneha Raj, B. Ruth Angeeleena and C. Rajam. Seaweeds can be a new source for bioplastics, Journal of Pharmacy Research,5(3); 2012.
 14. Shamsuddin, Ibrahim Muhammad, Jafar Ahmad Jafar, AbubakarSadiqAbdulrahmanShawai, Saleh Yusuf, Mahmud Lateefah, and Ibrahim Aminu. Bioplastics as Better Alternative to Petro plastics and Their Role in National Sustainability: A Review, Advances in Bioscience and Bioengineering, 5(4); 2017.
 15. B.S. Saharan, Ankita and Deepansh Sharma. Bioplastics-For Sustainable Development: A Review, International Journal of Microbial Resource Technology, 1(1); 2012.
 16. Wala'a Shawkat Ali, Neihaya Heikmat Zaki and Somaya Yassen. Production of bioplastic by bacteria isolated from local soil and organic wastes, Creent Research in Microbiology and Biotechnology, 5(2); 2017.
 17. Kumar, Satish and K. S. Thakur. Bioplastics-classification, production and their potential food applications, Journal of Hill Agriculture, 8(2); 2017.
 18. Lee Sang Yup. Deciphering bioplastic production, Nature biotechnology, 24(10); 2006.
 19. Fabunmi, Olayide Oyeyemi, Lope G. Tabil, Peter R. Chang and Satyanarayan Panigrahi. Developing biodegradable plastics from starch, In ASABE/CSBE North Central Intersectoral Meeting, American Society of Agricultural and Biological Engineers, 2006.
 20. Erich Markl, Hannes Grünbichler and Maximilian. Lackner University of Applied Sciences Technikum Wien, Hoechstaedtplatz, Vienna, Austria. Cyanobacteria for PHB bioplastics production: A Review, (2018).
 21. Lavanya. M, Thangamathi. P, Ananth. S and GnanaSundaram. Properties of seaweeds: A Review, International Journal of Current Innovation Research, 3(10); 2017.
 22. Mitali, P. P. D. S. Satyabrata, N. Lakshman and R. P. Chita. Uses of seaweed and its application to human welfare: a review, Inter J Pharm Sci 8; 2016.
 23. Rout, Sradhasini and Anjan Kumar. A review on the pot RJPT source, World Journal of Pharmacy and Pharmaceutical Sciences, 4(10); 2016. Hi,
 24. Haresh S. Kalasariya, Rinku V. Patel, Krishna Y. Pandya, How can I help you ? review on nutritional facets of seaweeds, International Journal of Chemical Sciences and Technology, 1(3), 2010.
 25. Fritsch, Felix Eugene. The structure and reproduction of the algae, .At The University Press; Cambridge, 1948.
 26. Pal, Archana, Mohit Chandra Kamthania and Ajay Kumar. Bioactive compounds and properties of seaweeds-a review, Open Access Library Journal, 1 (4); 2014.
 27. Chennubhotla, V. S, N. Kaliaperumal, S. Kalimuthu ar Start chat seaweeds-a review. Seaweed Research and Utilization, 1(1); 2014.
 28. H.P.S. Abdul Khalil, T.K. Lai, Y.Y. Tye, S. Rizal, E.W.N. C A rewied of extractions of seaweed hydrocolloids: Properties and applications, 12(4); 2018. by AI/Sensy (<https://aisensy.com>) h,
 29. Rebours, Celine, Eliane Marinho-Soriano, José A. Zertuche-González, Leila Hayashi, Julio A. Vasquez, Paul Kradolfer, Gonzalo Soriano et al. Seaweeds: an opportunity for wealth and sustainable livelihood for coastal communities, Journal of Applied Phycology, 26(5);2014.
 30. Khan, Wajahatullah, Usha P. Rayirath, Sowmyalakshmi Subramanian, Mundaya N. Jithesh, Prasanth Rayorath. D. <https://rjptonline.org/AbstractView.aspx?PID=2020-13-5-74#:~:text=Polysaccharide%20is%20the%20important%20component,more%20resistant%20to%20microwave%20radiation.> 3/10

- Mark Hodges, Alan T. Critchley, James S. Craigie, Jeff Norrie, and Balakrishnan Prithiviraj. "Seaweed extracts as Biostimulants of plant growth and development, Journal of Plant Growth Regulation, 28(4); 2009.
31. Ali A. El Gamal. Biological importance of marine algae, Saudi Pharmaceutical Journal, 18; 2010.
32. Chapman, Valentine. Seaweeds and their uses, Springer Science & Business Media, 2012.
33. Vijayan, Sri Ramkumar, Prakash Santhiyagu, Ramasubburayan Ramasamy, Pugazhendhi Arivalagan, Gopalakrishnan Kumar, Kannapiran Ethiraj, and Babu Rajendran Ramasamy. Seaweeds: a resource for marine bionanotechnology, Enzyme and Microbial Technology, 95; 2016.
34. Wijesinghe, W. A. J. P., and You-Jin Jeon. Enzyme-assistant extraction (EAE) of bioactive components: a useful approach for recovery of industrially important metabolites from seaweeds: a review, Fitoterapia, 83(1); 2012.
35. Wang, K., A. Mandal, E. Ayton, R. Hunt, M. A. Zeller, and S. Sharma. Modification of Protein Rich Algal-Biomass to Form Bioplastics and Odor Removal, In Protein Byproducts, Academic Press, 2016.
36. Algal Biopolymer or Bioplastics and its Application - Biotech Articles
<https://www.biotecharticles.com/Applications.../Algal-Biopolymer-or-Bioplastics-and-i...>
37. NS Adenan, FM Yusoff, M Shariff , Effect of salinity and temperature on the growth of diatoms and green algae, Journal of Fisheries and Aquatic, 2013.
38. Gade, Ramani, M. SIVA Tulasi, and V. ARUNA Bhai. Seaweeds: a novel biomaterial, International Journal of Pharmacy and Pharmaceutical Sciences, 5(2); 2013.
39. Machmud, M. Nizar, Reza Fahmi, Rohana Abdullah, and Coco Kokarkin. Characteristics of red algae bioplastics/latex blends under tension, International Journal of Science and Engineering 5 (2); 2013.
40. EB Arikan, HD Ozsoy. A review: investigation of bioplastics, Civil Engineering and Architecture, Davidpublisher.org, 2015.
41. Ying Jian Chen. Bioplastic and their role in achieving global sustainability, Journal of Chemical and Pharmaceutical Research, 6(1); 2014.
42. Shit, Subhas C., and Pathik M. Shah. Edible polymers: challenges and opportunities, Journal of Polymers, 2014.

RECOMONDED ARTICLES:





Research Journal of Pharmacy and Technology (RJPT) is an international, peer-reviewed, multidisciplinary journal....

[Read more >> \(AboutJournal.aspx\)](#)

RNI: CHHENG00387/33/1/2008-TC

DOI: 10.5958/0974-360X

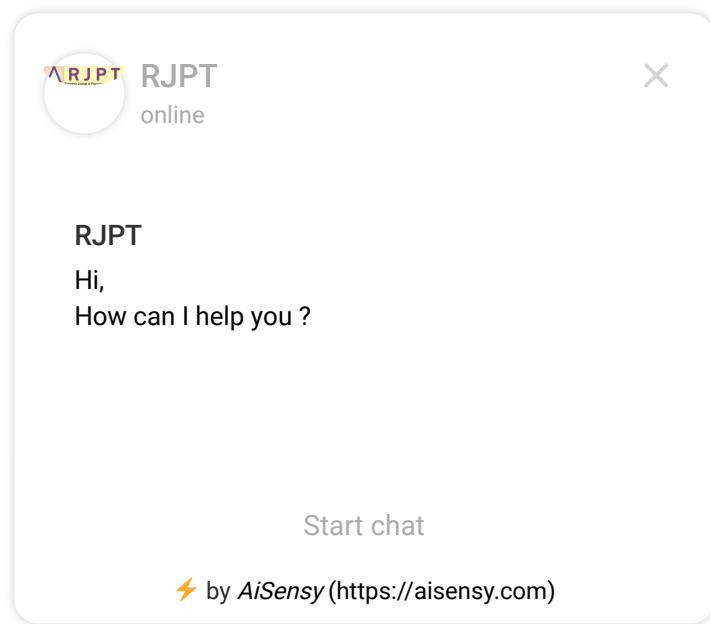
1.3

56th percentile

2021
CiteScore

Powered by

(https://www.scopus.com/sourceid/21100197160?dgcid=sc_widget_citescore)



Research Journal of Pharmacy and Technology

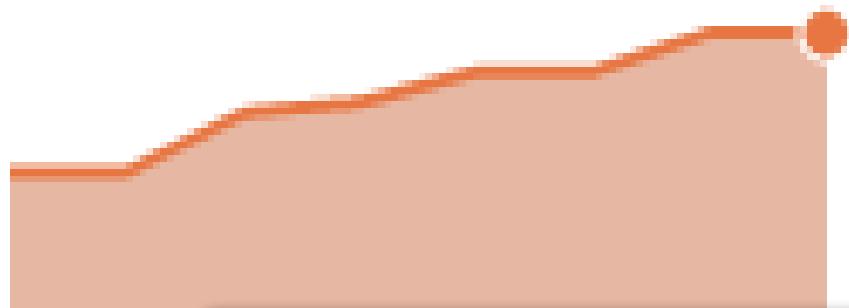
Q2

Pharmacology,
Toxicology and
Pharmaceutics...

best quartile

SJR 2023

0.27



powered by scimagojr.com

(<https://www.scimagojr.com/journalsearch.php?q=21100>) RJPT

Journal Policies & Information

Scope of Focus ([FocusScope.aspx](#))

Informed Consent ([InformedConsent.aspx](#))

Competing Interests ([CompetingInterests.aspx](#))

Privacy Policy ([PrivacyPolicy.aspx](#))

Advertisement Policy ([AdvertisementPolicy.aspx](#))

Disclaimer ([Disclaimer.aspx](#))

Plagiarism Policy ([PlagiarismPolicy.aspx](#))

Publication Ethics ([PublicationEthics.aspx](#))

Hi,
How can I help you ?

[Start chat](#)

⚡ by Aisensy (<https://aisensy.com>)

[Reviewers' Guidelines \(ReviewersGuidelines.aspx\)](#)[Review Policy \(ReviewPolicy.aspx\)](#)[Correction and Retraction Policy \(CorrectionRetractionPolicy.aspx\)](#)

QUICK LINKS

[SUBMIT ARTICLE \(SUBMITARTICLE.ASPX\)](#)[AUTHOR'S GUIDELINES \(DOWNLOADS/INSTRUCTIONS_TO_AUTHOR.PDF\)](#)[PAPER TEMPLATE \(DOWNLOADS/PAPER_TEMPLET.DOC\)](#)[COPYRIGHT FORM \(DOWNLOADS/COPYRIGHT TRANSFER FORM.DOCX\)](#)[CERT. OF CONFLICT OF INTREST \(DOWNLOADS/CERTIFICATE OF CONFLICT OF INTREST.PDF\)](#)[PROCESSING CHARGES \(CHARGESDETAILS.ASPX\)](#)[INDEXING INFORMATION \(INDEXED_IN.ASPX\)](#)

LATEST ISSUES

[AUGUST 2024 \(87\) \(ISSUES.ASPX?VID=17&IID=8\)](#)

RJPT

online

[JULY 2024 \(85\) \(ISSUES.ASPX?VID=17&IID=7\)](#)

RJPT

Hi,

How can I help you ?

[JUNE 2024 \(86\) \(ISSUES.ASPX?VID=17&IID=6\)](#)[MAY 2024 \(77\) \(ISSUES.ASPX?VID=17&IID=5\)](#)

Start chat

⚡ by AiSensy (<https://aisensy.com>)[APRIL 2024 \(78\) \(ISSUES.ASPX?VID=17&IID=](#)[MARCH 2024 \(77\) \(ISSUES.ASPX?VID=17&IID=3\)](#)



FEBRUARY 2024 (77) (ISSUES.ASPX?VID=17&IID=2)



JANUARY 2024 (71) (ISSUES.ASPX?VID=17&IID=1)

POPULAR ARTICLES

(AbstractView.aspx?PID=2020-13-7-74)

Pharmaceutical Incompatibilities: Causes, Types and Major ways of Overcoming in Extemporaneous Medicinal forms

(AbstractView.aspx?PID=2020-13-7-74)

(AbstractView.aspx?PID=2020-13-1-43)

Formulation and Evaluation of Herbal Face Cream

(AbstractView.aspx?PID=2020-13-1-43)

(AbstractView.aspx?PID=2017-10-9-42)

Detection of Food Adulterants in Chilli, Turmeric and Coriander Powders by Physical and Chemical Methods

(AbstractView.aspx?PID=2017-10-9-42)

(AbstractView.aspx?PID=2020-13-4-16)

Formulation and Evaluation of Herbal Lipsticks

(AbstractView.aspx?PID=2020-13-4-16)

(AbstractView.aspx?PID=2017-10-9-19)

Formulation and Evaluation of Aspirin Tablets by Using Different Lubricants in Combination for better Kinetic Drug Release Study by PCP

(AbstractView.aspx?PID=2017-10-9-19)

 RJPT
online



RJPT

Hi,

How can I help you ?

(AbstractView.aspx?PID=2020-13-3-81)

Regulatory requirements for conducting Clinical Trials in India

(AbstractView.aspx?PID=2020-13-3-81)

(AbstractView.aspx?PID=2019-12-11-80)

Dental Waxes-A Review

(AbstractView.aspx?PID=2019-12-11-80)

Start chat

 by AiSensy (<https://aisensy.com>)

(AbstractView.aspx?PID=2013-6-2-15)

Medicinal Plants from Solanaceae Family

(AbstractView.aspx?PID=2013-6-2-15)

(AbstractView.aspx?PID=2014-7-9-14)

The Use of Neem in Oral Health

(AbstractView.aspx?PID=2014-7-9-14)

(AbstractView.aspx?PID=2019-12-1-69)

Recent Advances in Preventive Resin Restoration (PRR)

(AbstractView.aspx?PID=2019-12-1-69)

(AbstractView.aspx?PID=2016-9-11-11)

Sex determination using the mastoid process using South Indian skulls

(AbstractView.aspx?PID=2016-9-11-11)

(AbstractView.aspx?PID=2010-3-3-60)

Evaluation of Ayurvedic Marketed Formulations Asava's and Arista's.

(AbstractView.aspx?PID=2010-3-3-60)

(AbstractView.aspx?PID=2011-4-9-2)

Formulation and Evaluation of Diclofenac gel

(AbstractView.aspx?PID=2011-4-9-2)

(AbstractView.aspx?PID=2017-10-12-61)

Mathematical Models in Drug Discovery, Development and Treatment of Various Diseases – A Case Study

(AbstractView.aspx?PID=2017-10-12-61)

(AbstractView.aspx?PID=2018-11-2-70)

Recent Advancements in Laminates and Veneers in

(AbstractView.aspx?PID=2018-11-2-70)



RJPT

Hi,

How can I help you ?

Start chat

⚡ by AiSensy (<https://aisensy.com>)

Recent Articles

Tags

Not Available

ABOUT JOURNAL

Research Journal of Pharmacy and Technology (RJPT) is an international, peer-reviewed, multidisciplinary journal, devoted to pharmaceutical sciences. The aim of RJPT is to increase the impact of pharmaceutical research both in academia and industry, with strong emphasis on quality and originality. RJPT publishes Original Research Articles, Short Communications, Review Articles in all areas of pharmaceutical sciences from the discovery of a drug up to clinical evaluation. Topics covered are: Pharmaceutics and Pharmacokinetics; Pharmaceutical chemistry including medicinal and analytical chemistry; Pharmacognosy including herbal products standardization and Phytochemistry; Pharmacology: Allied sciences including drug regulatory affairs, Pharmaceutical Marketing, Pharmaceutical Microbiology, Pharmaceutical biochemistry, Pharmaceutical Education and Hospital Pharmacy.

[Read More >>> \(AboutJournal.aspx\)](#)

VISITORS



Today:

Yesterday:

Total:

RJPT

online

RJPT

Hi,
 How can I help you ?

[HOME \(HOME.ASPX\)](#) | [ABOUT JOURNAL \(ABOUTJOURNAL.ASPX\)](#) | [EDITORIAL BOARD \(EDITORIALBOARD.ASPX\)](#) | [SITEMAP \(SITEMAP.XML\)](#)

(<https://tlabssolutions.com/>)

Desi

[Start chat](#)

by AiSensy (<https://aisensy.com>)