

# **Energy Transfer Data Communication in Wireless Sensor Network Using Improved Firefly Algorithm**

Publisher: IEEE





S Sreejith; N Shanmugasundaram; V Rajendran; K Sushita All Authors •••

**24** Full Text Views



Manage Content Alerts

Add to Citation Alerts

#### **Abstract**



PDF

**Document Sections** 

Document Sections

- Introduction
- II. Proposed System Description
- III. Proposed System Modelling
- IV. Results and Discussion
- V. Conclusion

Authors

Figures

References

Keywords

Metrics

More Like This

#### Abstract

The wireless transmission of energy via directed radio frequency waves has the potential to produce always working sensor nodes by refilling the energy stored in the rest... **View more** 

#### ✓ Metadata

#### Abstract:

The wireless transmission of energy via directed radio frequency waves has the potential to produce always working sensor nodes by refilling the energy stored in the restricted on-board battery. The sensor nodes in WSNs collect environmental data, which is subsequently progressively sent to the networks. The sensor gathers signals and transmits them as data. The data are then relayed over a number of wireless nodes before being sent to the originating node. The large data transfer and high energy consumption of WSNs was not be successfully balanced by the existing routing techniques. In this paper the improved Firefly optimization approach is introduced to avoid this problem. The potential of the newly developed, nature-inspired Firefly algorithm for optimization reduces and addresses a variety of issues in WSN. The improved firefly technique is implemented in this study to find the correct path in sensor networks to transmit the data. In this paper the comparison of numerous network performance measures including average energy consumption (8.6J) end-to-end latency (2.2 ms), packet delivery ratio (1%), throughput (400 kbps), packet loss ratio (0.1%), are used to assess or analyse this routing system. To demonstrate the protocol's superiority over current protocols, it was compared to them.

**Published in:** 2023 Second International Conference on Advances in Computational Intelligence and Communication (ICACIC)

**Date of Conference:** 07-08 December 2023 **DOI:** 10.1109/ICACIC59454.2023.10435319

Date Added to IEEE Xplore: 19 February 2024 Pub

▶ ISBN Information:

Publisher: IEEE

Conference Location: Puducherry, India

## Contents

#### 1. Introduction

For several application situations, including battlefield monitoring, rescue efforts, monitoring the environment, and healthcare checking, WSN have become known as a viable technology. However, because they are frequently used in hazardous or severe environments, WSNs are exposed to a variety of dangers. Attackers may very simply take control of sensor nodes in WSNs and use them to execute a variety of attacks, including selective transmission wormhole, sinkhole and Sybil [1]. By allowing deployed sensors to recharge while the network is in use, wireless energy transfer will increase their longevity and reduce application downtime. There are several uses for WSNs, including security, environmental monitoring, tracking and surveillance [2].

Authors	~
Figures	~
References	~
Keywords	~
Metrics	~

### More Like This

Fuzzy and Ant Colony Optimization Based Clustering and Routing Protocol in Underwater Wireless Sensor Networks TENCON 2022 - 2022 IEEE Region 10 Conference (TENCON)

Published: 2022

Game Theory and Coverage Optimization Based Multihop Routing Protocol for Network Lifetime in Wireless Sensor Networks IEEE Sensors Journal

Published: 2022

24, 10:24 AM Energy	Transfer Data Communication	in Wireless Sensor Network Using I	mproved Firetly Algorithm   IEEE	
				Show
			_	
IEEE Personal Account	Purchase Details	Profile Information	Need Help?	Follow
CHANGE	PAYMENT OPTIONS	COMMUNICATIONS	US & CANADA: +1 800	f @ in C
USERNAME/PASSWORD	VIEW PURCHASED	PREFERENCES	678 4333	
	DOCUMENTS	PROFESSION AND EDUCATION	WORLDWIDE: +1 732 981 0060	
		TECHNICAL INTERESTS	CONTACT & SUPPORT	
About IEEE Xplore   Conta	ct Us   Help   Accessibility   Te	rms of Use   Nondiscrimination Polic	y   IEEE Ethics Reporting 🗹   S	itemap
IEEE Privacy Policy				5 (1)
A not-for-profit organization humanity.	n, IEEE is the world's largest te	echnical professional organization de	dicated to advancing technology	y for the benefit of
© Copyright 2024 IEEE - A	Il rights reserved, including rig	hts for text and data mining and trair	ning of artificial intelligence and	similar technologie
EEE Account				
EEE Account  Change Username/Password				

#### **Purchase Details**

- » Payment Options
- » Order History
- » View Purchased Documents

**Profile Information** 

- » Communications Preferences
- » Profession and Education
- » Technical Interests

Need Help?

» US & Canada: +1 800 678 4333 » Worldwide: +1 732 981 0060

» Contact & Support

About IEEE Xplore | Contact Us | Help | Accessibility | Terms of Use | Nondiscrimination Policy | Sitemap | Privacy & Opting Out of Cookies

A not-for-profit organization, IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity. © Copyright 2024 IEEE - All rights reserved. Use of this web site signifies your agreement to the terms and conditions.