



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

*Author's Name:* Alcides Feitosa Neto

*Journal Name:* International Journal of Engineering Research and Development (IJERD)

*Journal URL:* [www.ijerd.com](http://www.ijerd.com)

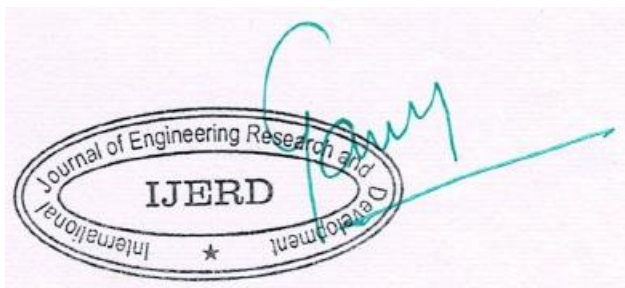
*Journal Type:* Online & Offline

*Publication Year:* 2025

*Publication Month:* November

*Vol No. :* 21

*Issue No. :* 11



Editor-In-Chief

International Journal of Engineering Research and Development (IJERD)

ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X

E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)

URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

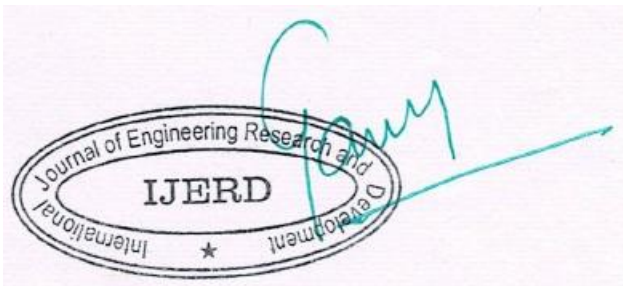
e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

*Author's Name:* Ana Katherine Silveira Pereira Caracas  
*Journal Name:* International Journal of Engineering Research and Development (IJERD)  
*Journal URL:* [www.ijerd.com](http://www.ijerd.com)  
*Journal Type:* Online & Offline  
*Publication Year:* 2025  
*Publication Month:* November  
*Vol No. :* 21  
*Issue No. :* 11



Editor-In-Chief  
International Journal of Engineering Research and Development (IJERD)  
ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X  
E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)  
URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

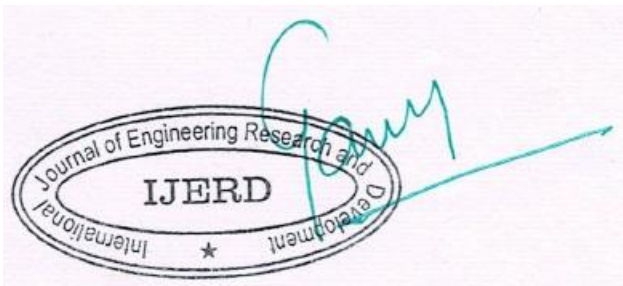
e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

*Author's Name:* Antonio Werbiton Marinho Almeida  
*Journal Name:* International Journal of Engineering Research and Development (IJERD)  
*Journal URL:* [www.ijerd.com](http://www.ijerd.com)  
*Journal Type:* Online & Offline  
*Publication Year:* 2025  
*Publication Month:* November  
*Vol No. :* 21  
*Issue No. :* 11



Editor-In-Chief  
International Journal of Engineering Research and Development (IJERD)  
ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X  
E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)  
URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

**Author's Name:** Emilio Parra Sanches Junior

**Journal Name:** International Journal of Engineering Research and Development (IJERD)

**Journal URL:** [www.ijerd.com](http://www.ijerd.com)

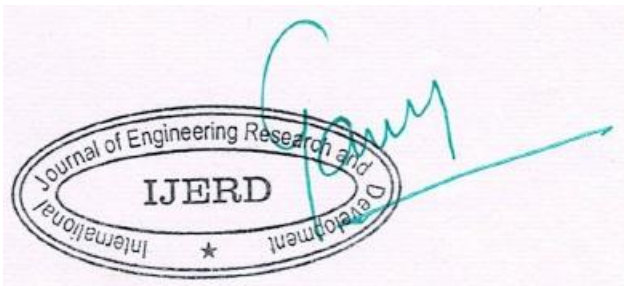
**Journal Type:** Online & Offline

**Publication Year:** 2025

**Publication Month:** November

**Vol No. :** 21

**Issue No. :** 11



Editor-In-Chief

International Journal of Engineering Research and Development (IJERD)

ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X

E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)

URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

**Author's Name:** Ernandes Farias da Costa

**Journal Name:** International Journal of Engineering Research and Development (IJERD)

**Journal URL:** [www.ijerd.com](http://www.ijerd.com)

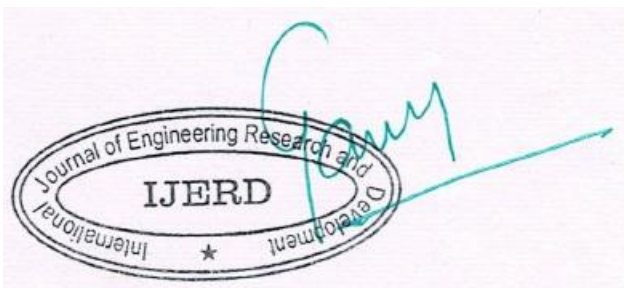
**Journal Type:** Online & Offline

**Publication Year:** 2025

**Publication Month:** November

**Vol No. :** 21

**Issue No. :** 11



Editor-In-Chief

International Journal of Engineering Research and Development (IJERD)

ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X

E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)

URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

**Author's Name:** Francisco José Lopes Cajado

**Journal Name:** International Journal of Engineering Research and Development (IJERD)

**Journal URL:** [www.ijerd.com](http://www.ijerd.com)

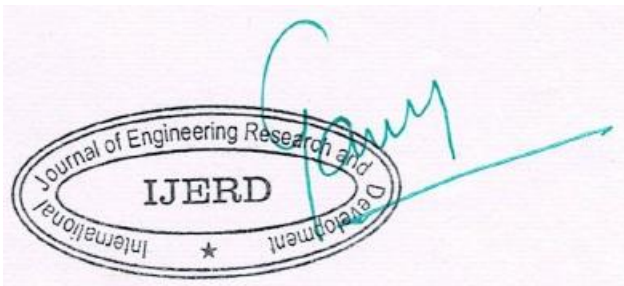
**Journal Type:** Online & Offline

**Publication Year:** 2025

**Publication Month:** November

**Vol No. :** 21

**Issue No. :** 11



Editor-In-Chief

International Journal of Engineering Research and Development (IJERD)

ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X

E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)

URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

**Author's Name:** Francisco José da Silva Fonteles

**Journal Name:** International Journal of Engineering Research and Development (IJERD)

**Journal URL:** [www.ijerd.com](http://www.ijerd.com)

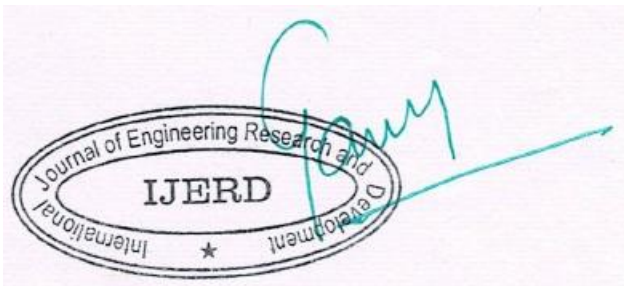
**Journal Type:** Online & Offline

**Publication Year:** 2025

**Publication Month:** November

**Vol No. :** 21

**Issue No. :** 11



Editor-In-Chief

International Journal of Engineering Research and Development (IJERD)

ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X

E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)

URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

**Author's Name:** Givanildo Ximenes Santana

**Journal Name:** International Journal of Engineering Research and Development (IJERD)

**Journal URL:** [www.ijerd.com](http://www.ijerd.com)

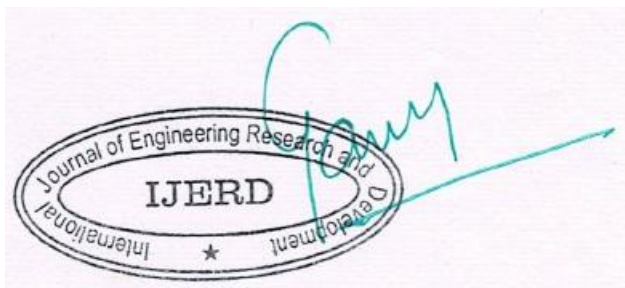
**Journal Type:** Online & Offline

**Publication Year:** 2025

**Publication Month:** November

**Vol No. :** 21

**Issue No. :** 11



Editor-In-Chief  
International Journal of Engineering Research and Development (IJERD)  
ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X  
E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)  
URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

**Author's Name:** Irene Mendes Fontes

**Journal Name:** International Journal of Engineering Research and Development (IJERD)

**Journal URL:** [www.ijerd.com](http://www.ijerd.com)

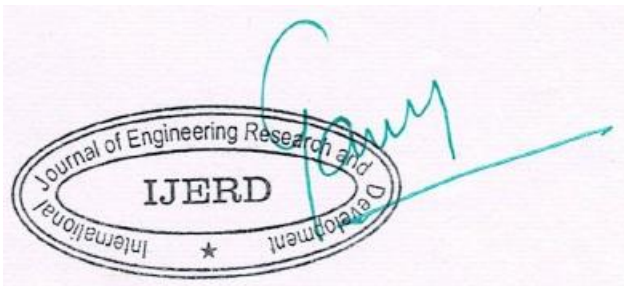
**Journal Type:** Online & Offline

**Publication Year:** 2025

**Publication Month:** November

**Vol No. :** 21

**Issue No. :** 11



Editor-In-Chief

International Journal of Engineering Research and Development (IJERD)

ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X

E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)

URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

**Author's Name:** José Reudson de Souza

**Journal Name:** International Journal of Engineering Research and Development (IJERD)

**Journal URL:** [www.ijerd.com](http://www.ijerd.com)

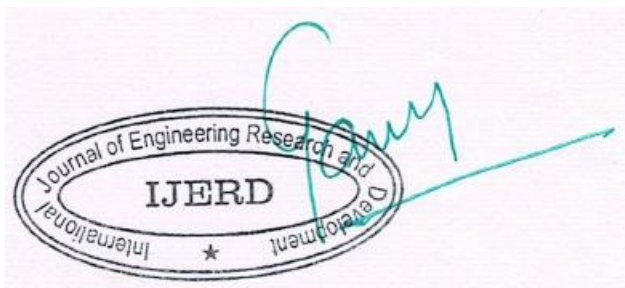
**Journal Type:** Online & Offline

**Publication Year:** 2025

**Publication Month:** November

**Vol No. :** 21

**Issue No. :** 11



Editor-In-Chief

International Journal of Engineering Research and Development (IJERD)

ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X

E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)

URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

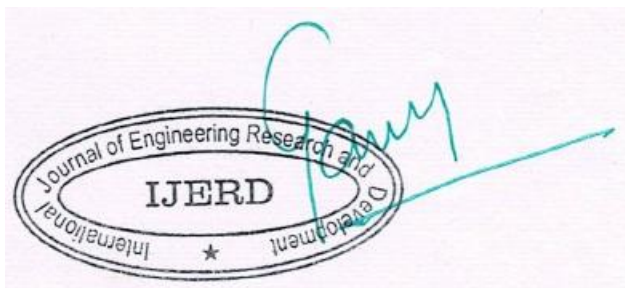
e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

**Author's Name:** *Luísa Janaina Lopes Barroso Pinto*  
**Journal Name:** *International Journal of Engineering Research and Development (IJERD)*  
**Journal URL:** *www.ijerd.com*  
**Journal Type:** *Online & Offline*  
**Publication Year:** *2025*  
**Publication Month:** *November*  
**Vol No. :** *21*  
**Issue No. :** *11*



Editor-In-Chief  
International Journal of Engineering Research and Development (IJERD)  
ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X  
E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)  
URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

*Author's Name: Paulo Henrique Barbosa Sousa*

*Journal Name: International Journal of Engineering Research and Development (IJERD)*

*Journal URL: www.ijerd.com*

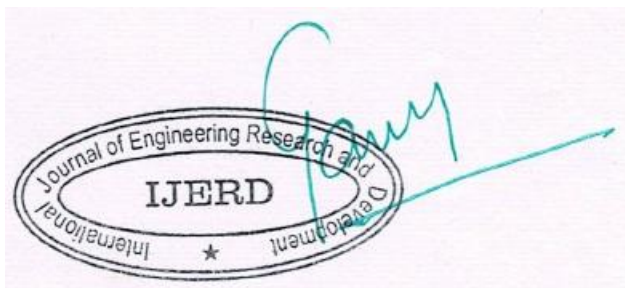
*Journal Type: Online & Offline*

*Publication Year: 2025*

*Publication Month: November*

*Vol No. : 21*

*Issue No. : 11*



Editor-In-Chief

International Journal of Engineering Research and Development (IJERD)

ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X

E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)

URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

**Author's Name:** Rickardo Léo Ramos Gomes

**Journal Name:** International Journal of Engineering Research and Development (IJERD)

**Journal URL:** [www.ijerd.com](http://www.ijerd.com)

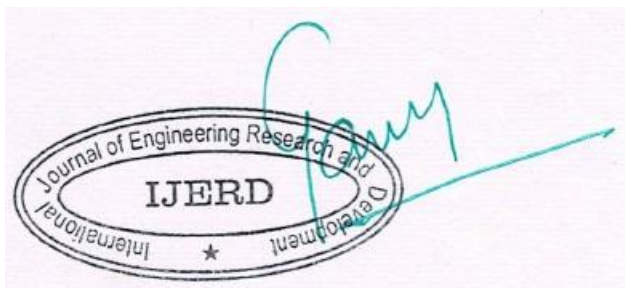
**Journal Type:** Online & Offline

**Publication Year:** 2025

**Publication Month:** November

**Vol No. :** 21

**Issue No. :** 11



Editor-In-Chief

International Journal of Engineering Research and Development (IJERD)

ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X

E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)

URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

**Author's Name:** Roberto Augusto Caracas Neto

**Journal Name:** International Journal of Engineering Research and Development (IJERD)

**Journal URL:** [www.ijerd.com](http://www.ijerd.com)

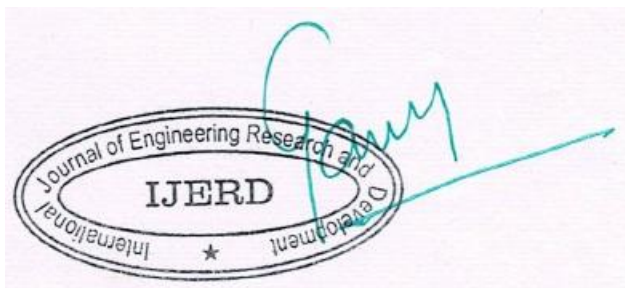
**Journal Type:** Online & Offline

**Publication Year:** 2025

**Publication Month:** November

**Vol No. :** 21

**Issue No. :** 11



Editor-In-Chief

International Journal of Engineering Research and Development (IJERD)

ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X

E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)

URL: [www.ijerd.com](http://www.ijerd.com)



# INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH AND DEVELOPMENT

e-ISSN: 2278-067X p-ISSN: 2278-800X

## CERTIFICATE

It is certified that the paper entitled by **“Technological Innovation and Sustainable Management of Rare Earths in the Context of Renewable Energy Geopolitics”** has been published in **International Journal of Engineering Research and Development (IJERD)**.

***Your article has been published with following details:***

**Author's Name:** Tadeu Dote Sá

**Journal Name:** International Journal of Engineering Research and Development (IJERD)

**Journal URL:** [www.ijerd.com](http://www.ijerd.com)

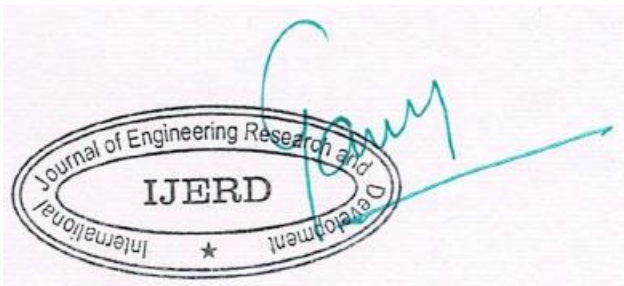
**Journal Type:** Online & Offline

**Publication Year:** 2025

**Publication Month:** November

**Vol No. :** 21

**Issue No. :** 11



Editor-In-Chief

International Journal of Engineering Research and Development (IJERD)

ISSN(Online) : 2278-067X, ISSN(Print) : 2278-800X

E-mail ID: [ijerd@editormails.com](mailto:ijerd@editormails.com)

URL: [www.ijerd.com](http://www.ijerd.com)