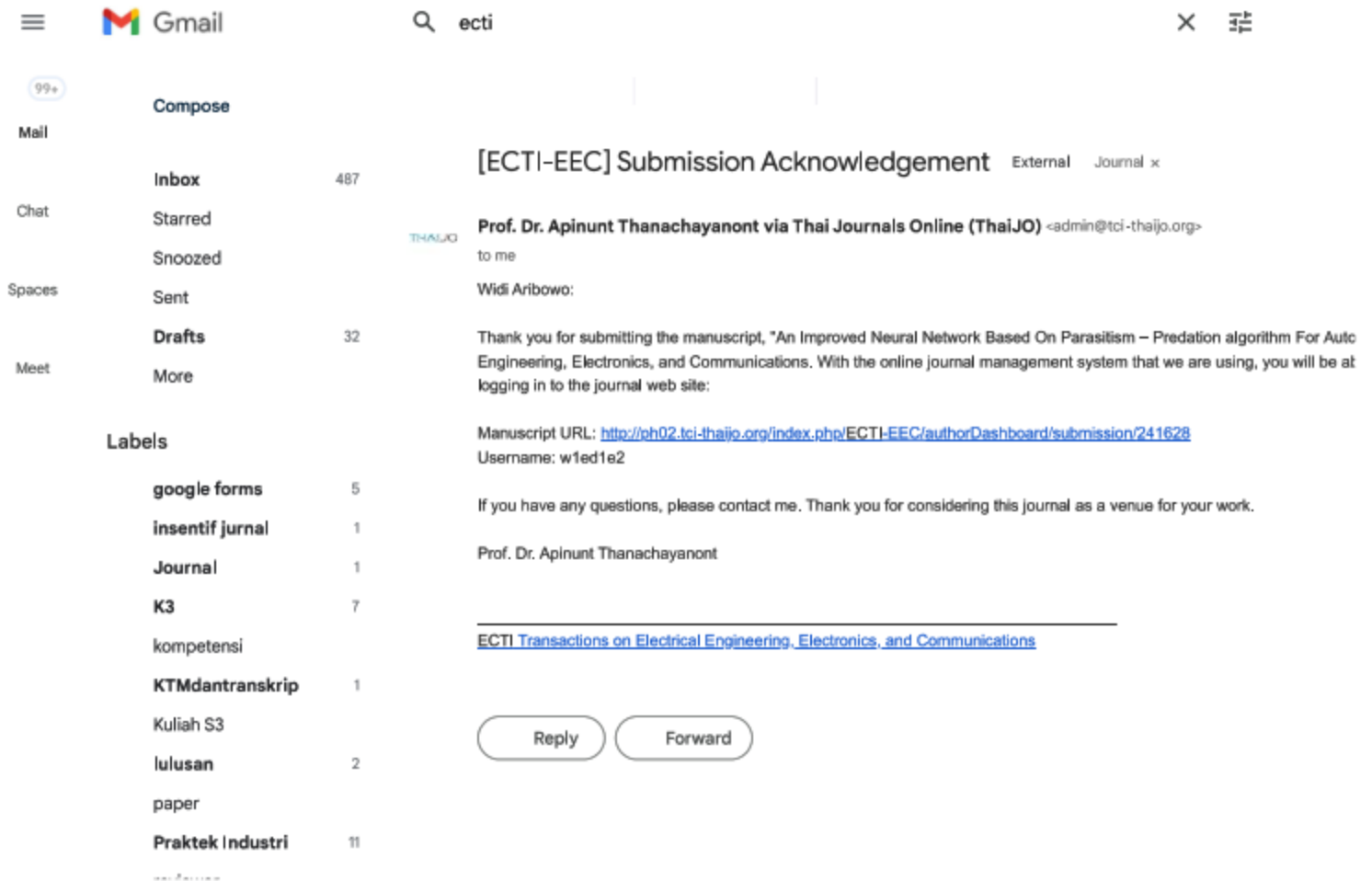


## Bukt korespondensi Dan Peer Review

### 1. Email Pertama Submitted Paper



The screenshot shows a Gmail interface with a search bar at the top containing the text "ecti". On the left sidebar, the "Inbox" is selected, showing 487 emails. Below the inbox list, there are labels for various categories: "google forms" (5), "insentif jurnal" (1), "Journal" (1), "K3" (7), "kompetensi", "KTMdantranskrip" (1), "Kuliah S3", "lulusan" (2), "paper", and "Praktek Industri" (11). The main content area displays an email titled "[ECTI-EEC] Submission Acknowledgement" from "Prof. Dr. Apinunt Thanachayanont via Thai Journals Online (ThaiJO)" with the email address "<admin@tci-thaijo.org>". The email body contains a thank you message for submitting a manuscript titled "An Improved Neural Network Based On Parasitism – Predation algorithm For Auto Engineering, Electronics, and Communications". It provides a manuscript URL: <http://oh02.tci-thaijo.org/index.php/ECTI-EEC/authorDashboard/submission/241628> and a username: w1ed1e2. The email also includes a contact information for Prof. Dr. Apinunt Thanachayanont and a link to the journal's website: [ECTI Transactions on Electrical Engineering, Electronics, and Communications](http://www.ecti-thaijo.org). At the bottom of the email, there are buttons for "Reply" and "Forward".

**[ECTI-EEC] Submission Acknowledgement** External Journal x

**Prof. Dr. Apinunt Thanachayanont via Thai Journals Online (ThaiJO)** <admin@tci-thaijo.org> to me

Widi Aribowo:

Thank you for submitting the manuscript, "An Improved Neural Network Based On Parasitism – Predation algorithm For Auto Engineering, Electronics, and Communications. With the online journal management system that we are using, you will be at logging in to the journal web site:

Manuscript URL: <http://oh02.tci-thaijo.org/index.php/ECTI-EEC/authorDashboard/submission/241628>  
Username: w1ed1e2

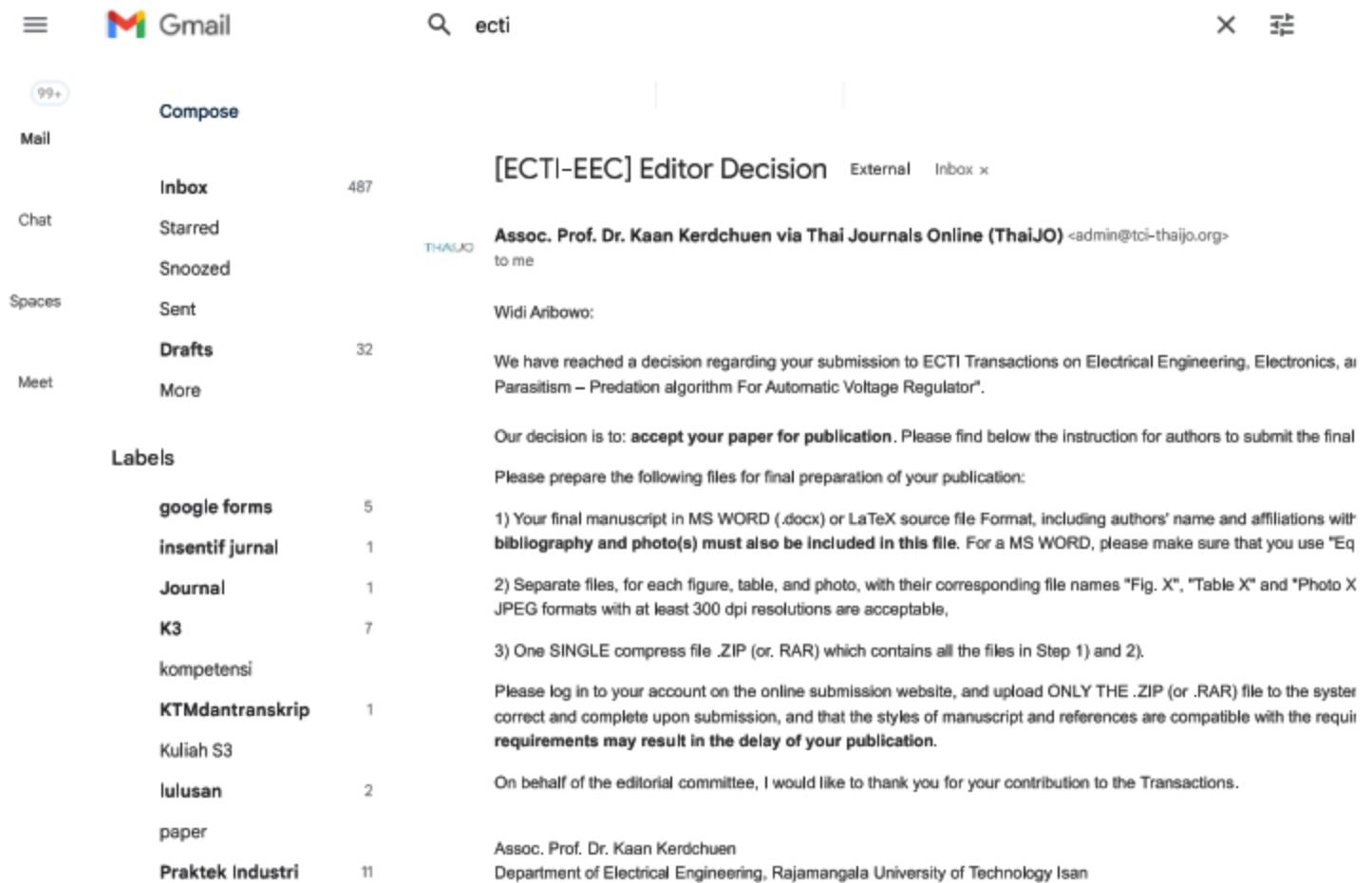
If you have any questions, please contact me. Thank you for considering this journal as a venue for your work.

Prof. Dr. Apinunt Thanachayanont

[ECTI Transactions on Electrical Engineering, Electronics, and Communications](http://www.ecti-thaijo.org)

Reply Forward

## 2. Email Review Tahap 1



The screenshot displays a Gmail interface. On the left, the navigation sidebar includes 'Compose', 'Inbox' (487), 'Starred', 'Snoozed', 'Sent', 'Drafts' (32), and 'More'. Below these are 'Labels' such as 'google forms' (5), 'insentif jurnal' (1), 'Journal' (1), 'K3' (7), 'kompetensi', 'KTMdantranskrip' (1), 'Kuliah S3', 'lulusan' (2), 'paper', and 'Praktek Industri' (11). The main content area shows an email titled '[ECTI-EEC] Editor Decision' from 'Assoc. Prof. Dr. Kaan Kerdchuen via Thai Journals Online (ThaiJO)'. The email body states that a decision has been reached regarding a submission to ECTI Transactions on Electrical Engineering, Electronics, and Parasitism – Predation algorithm For Automatic Voltage Regulator. The decision is to accept the paper for publication. It provides instructions for final preparation, including submitting the final manuscript in MS Word or LaTeX format, separate files for figures, tables, and photos, and a single compressed file (ZIP or RAR). The email concludes with a thank you from the editorial committee and the sender's contact information.

**[ECTI-EEC] Editor Decision** External Inbox x

**Assoc. Prof. Dr. Kaan Kerdchuen via Thai Journals Online (ThaiJO)** <admin@tcj-thaijo.org> to me

Widi Aribowo:

We have reached a decision regarding your submission to ECTI Transactions on Electrical Engineering, Electronics, and Parasitism – Predation algorithm For Automatic Voltage Regulator".

Our decision is to: **accept your paper for publication**. Please find below the instruction for authors to submit the final

Please prepare the following files for final preparation of your publication:

- 1) Your final manuscript in MS WORD (.docx) or LaTeX source file Format, including authors' name and affiliations with **bibliography and photo(s) must also be included in this file**. For a MS WORD, please make sure that you use "Eq
- 2) Separate files, for each figure, table, and photo, with their corresponding file names "Fig. X", "Table X" and "Photo X" JPEG formats with at least 300 dpi resolutions are acceptable,
- 3) One SINGLE compress file .ZIP (or .RAR) which contains all the files in Step 1) and 2).

Please log in to your account on the online submission website, and upload ONLY THE .ZIP (or .RAR) file to the system correct and complete upon submission, and that the styles of manuscript and references are compatible with the requirements may result in the delay of your publication.

On behalf of the editorial committee, I would like to thank you for your contribution to the Transactions.

Assoc. Prof. Dr. Kaan Kerdchuen  
Department of Electrical Engineering, Rajamangala University of Technology Isan

99+

Mail

Compose

Chat

Spaces

Meet

**Inbox** 487

Starred

Snoozed

Sent

**Drafts** 32

More

Labels

**google forms** 5

**insentif jurnal** 1

**Journal** 1

**K3** 7

kompetensi

**KTMdantranskrip** 1

Kuliah S3

**lulusan** 2

paper

**Praktek Industri** 11

Reviewer B:  
Recommendation: See Comments

**Comments to Authors (Mandatory)**

(Please provide constructive and helpful feedback to guide the authors in understanding the shortcomings and indicate

- In abstract, the result of this work must be described briefly.
- Please improve Table 1.
- Please check spelling words.
- Future works as an integral part should be included in the Conclusions.

Reviewer C:  
Recommendation: Accept Submission

**Comments to Authors (Mandatory)**

(Please provide constructive and helpful feedback to guide the authors in understanding the shortcomings and indicate

there are some word misspelling, check it out

### 3. Hasil Review dan penerimaan artikel. Dan meminta menyesuaikan sesuai format untuk final manuscript

The screenshot displays the author dashboard for ECTI Transactions on Electrical Engineering, Electronics, and Communications. The 'Notifications' section is highlighted, showing a decision from the [ECTI-EEC] Editor dated 2021-01-27 01:46 PM. The decision states that the submission, 'An Improved Neural Network Based On Parasitism - Predation algorithm For Automatic Voltage Regulator', has been accepted for publication. The editor provides instructions for preparing the final manuscript, including requirements for file formats (MS Word, LaTeX, or a single ZIP/RAR file), figure/table/photo formats, and submission deadlines. The dashboard also shows the 'Round 1 Status' as 'Submission accepted' and a list of 'Revisions'.

**[ECTI-EEC] Editor Decision**  
2021-01-27 01:46 PM

Widi Aribowo:

We have reached a decision regarding your submission to ECTI Transactions on Electrical Engineering, Electronics, and Communications, "An Improved Neural Network Based On Parasitism - Predation algorithm For Automatic Voltage Regulator".

Our decision is to: **accept your paper for publication**. Please find below the instruction for authors to submit the final manuscript.

Please prepare the following files for final preparation of your publication:

- 1) Your final manuscript in MS WORD (.docx) or LaTeX source file Format, including authors' name and affiliations with all the revisions, corrections etc. as required by the reviewers. **Your bibliography and photo(s) must also be included in this file.** For a MS WORD, please make sure that you use "Equation Editor or MathType" for the equations.
- 2) Separate files, for each figure, table, and photo, with their corresponding file names "Fig. X", "Table X" and "Photo X". One file per Figure/Table/Photo. Only the EPS, PNG, PDF and JPEG formats with at least 300 dpi resolutions are acceptable.
- 3) One SINGLE compress file .ZIP (or .RAR) which contains all the files in Step 1) and 2).

Please log in to your account on the online submission website, and upload ONLY THE ZIP (or .RAR) file to the system. Before uploading, please make sure that your final manuscript is correct and complete upon submission, and that the styles of manuscript and references are compatible with the required formats indicated on the website. **Failure to comply with these requirements may result in the delay of your publication.**

On behalf of the editorial committee, I would like to thank you for your contribution to the Transactions.

Assoc. Prof. Dr. Kaan Kerdchuen  
Department of Electrical Engineering, Rajamangala University of Technology Isan  
kaan.ke@rmu.ac.th

### 4. Pengiriman Final Manuscript

The screenshot displays the author dashboard for ECTI Transactions on Electrical Engineering, Electronics, and Communications. The 'Revisions' section is highlighted, showing a list of revisions. The first revision is titled '845077-1 Other, Widi Aribowo - ECTI - OK.rar' and was submitted on January 22, 2021. The dashboard also shows the 'Round 1 Status' as 'Submission accepted' and a list of 'Notifications'.

**Round 1 Status**  
Submission accepted.

**Notifications**

- [ECTI-EEC] Editor Decision 2021-01-20 03:59 PM
- [ECTI-EEC] Editor Decision 2021-01-27 01:46 PM

**Reviewer's Attachments**  
No Files

**Revisions**

Revision ID	Revision Title	Submission Date	Other
845077-1	Other, Widi Aribowo - ECTI - OK.rar	January 22, 2021	Other

[Edit](#) [Delete](#)

## 5. Proses **copyediting** dan pengiriman artikel beserta support document

The screenshot shows the author dashboard for the journal ECTI Transactions on Electrical Engineering, Electronic... The submission title is "An Improved Neural Network Based on Parasitism - Predation Algorithm for an Automatic Voltage Regulator" by Widi Aribowo, Bambang Suprianto, I Gusti Putu Asto Buditjahjanto, Mahendra Widiartono, ... The submission is currently in the "Copyediting" stage, indicated by the highlighted tab. The dashboard includes a sidebar with "Submissions" and a main content area with tabs for "Submission", "Review", "Copyediting", and "Production".

**Copyediting Discussions**

Name	From	Last Reply	Replies	Closed
<a href="#">Send Article and support document</a>	w1ed1e2	-	0	<input type="checkbox"/>
<a href="#">Edit</a>				

**Copyedited**

No Files

## 6. Proses **Production** dan proofreading dengan melakukan beberapa bagian yang menjadi catatan

The screenshot shows the ECTI-EEC author dashboard for submission 241628. A modal window titled "[ECTI-EEC] Proofreading Request (Author)" is open. It displays the submission title "An Improved Neural Network Based On Parasitism - Predation Algorithm for an Automatic Voltage Regulator" by Widi Aribowo. The modal includes a "Participants" section listing the author and the managing editor, Kriangkrai Sooksood. The "Messages" section shows a message from Kriangkrai Sooksood dated 2021-05-20 12:49 PM, requesting a proofread and higher resolution figures. The dashboard sidebar on the left shows the submission status as "Production Done".

## 7. Komunikasi selama proses proofreading

The screenshot shows the ECTI-EEC author dashboard for submission 241628, displaying the communication history during the proofreading process. The messages are as follows:

- Message 1:** From Widi Aribowo (w1ed1e2) to Kriangkrai Sooksood (ksooksood) on 2021-05-20 05:57 PM. The message states: "I have some improvements to figure 3 and equation. this is mainly equations 1 and 2. Here I send you the files of all pictures and fixes equations 1 and 2." It includes attachments "w1ed1e2, AllFigure.zip" and "w1ed1e2, widi aribowo - paper ecti.docx".
- Message 2:** From Kriangkrai Sooksood (ksooksood) to Widi Aribowo (w1ed1e2) on 2021-05-21 09:10 AM. The message states: "Thank you for your correction. The Eqs. 1, 2, and Fig. 3 have been corrected, please check again. For the figures, Fig. 3 are of great quality now, but the others still low resolution. Could you please send me the higher resolution figures, especially for Figs. 5 and 6?" It includes an attachment "ksooksood, 241628-Proofread2.pdf".

The dashboard sidebar on the left shows the submission status as "Production Done".

ph02.tci-thaijo.org/index.php/ECTI-EEC/authorDashboard/submission/241628

ECTI Transactions on Electrical Engineering, Electronic...

Submissions

**An Improved Neural Network**  
Widi Aribowo, Bambang Suprianto

Submission Review

**Production Discussions**

Name

[ECTI-EEC] Proofreading Request

**Galleys**

PDF

Dear Kriangkrai Sooksood..

Thank for the information

I have corrected pictures 5 and 6. Based on pictures 5 and 6, I have made some improvements in Table 1.

thank you

Best regards,

Widi Aribowo

w1ed1e2  
2021-05-21 03:07 PM

Download w1ed1e2, All Figure Rev2.zip

Dear Widi Aribowo,

Thank you for the new figures. They are all good now. Please check the updated manuscript, if there is no more correction, please confirm.

Best regards,

Kriangkrai Sooksood

Managing Editor ECTI-EEC

ksooksood, 241628-Proofread3.pdf  
2021-05-21 04:12 PM

Dear Kriangkrai Sooksood..

Thanks for the information. I confirmed that my paper is correct

Best regards,

Widi Aribowo

w1ed1e2  
2021-05-21 04:34 PM

Dear Widi Aribowo,

Thank you for your confirmation. The final manuscript will available online soon.

Best regards,

ksooksood  
2021-05-21 05:03 PM

Submission Library View Metadata

Add discussion

Last Reply	Replies	Closed
ksooksood 2021-05-21 05:03 PM	6	<input type="checkbox"/>

Platform & workflow by

## 8. File Camera Ready atau PDF tersedia di akun author

ph02.tci-thaijo.org/index.php/ECTI-EEC/authorDashboard/submission/241628

ECTI Transactions on Electrical Engineering, Electronic...

Submissions

**An Improved Neural Network Based on Parasitism - Predation Algorithm for an Automatic Voltage Regulator**  
Widi Aribowo, Bambang Suprianto, I Gusti Putu Asto Budijahjanto, Mahendra Widayartono, Miftahur Rohman

Submission Review Copyediting Production

**Production Discussions**

Name	From	Last Reply	Replies	Closed
[ECTI-EEC] Proofreading Request (Author)	ksooksood 2021-05-20 12:49 PM	ksooksood 2021-05-21 05:03 PM	6	<input type="checkbox"/>

**Galleys**

PDF

Submission Library View Metadata

Platform & workflow by

# An Improved Neural Network Based on the Parasitism – Predation Algorithm for an Automatic Voltage Regulator

Widi Aribowo<sup>1</sup>, Bambang Suprianto, I Gusti Putu Asto Buditjahjanto,  
Mahendra Widyartono, and Miftahur Rohman, Non-members

## ABSTRACT

The parasitism – predation algorithm (PPA) is an optimization method that duplicates the interaction of mutualism between predators (cats), parasites (cuckoos), and hosts (crows). The study employs a combination of the PPA methods using the cascade-forward backpropagation neural network. This hybrid method employs an automatic voltage regulator (AVR) on a single machine system, with the performance measurement focusing on speed and the rotor angle. The performance of the proposed method is compared with the feed-forward backpropagation neural network (FFBNN), cascade-forward backpropagation neural network (CFBNN), Elman recurrent neural network (E-RNN), focused time-delay neural network (FTDNN), and distributed time-delay neural network (DTDNN). The results show that the proposed method exhibits the best speed and rotor angle performance. The PPA-CFBNN method has the ability to reduce the overshoot of the speed by 1.569% and the rotor angle by 0.724%.

**Keywords:** Parasitism – Predation Algorithm, PPA, Cascade-Forward Backpropagation Neural Network, Automatic Voltage Regulator, Neural Network, Elman Recurrent Neural Network

## 1. INTRODUCTION

Currently, electricity plays a strategic role in everyday life, influenced by every piece of equipment requiring electricity in homes, offices, companies, and factories [1]. The electrical power system is designed to operate at a set nominal value. Supply voltage experiencing a shift in behavior results in uncertain behavior and impacts the lifetime of equipment.

Irregular demand for loads that can change at any time, results in the performance of electrical power systems approaching unsafe limits. The electrical power system control is an important element in generation fulfillment. Besides, the burden also needs to increase in complexity. The generator can oscillate around a balanced state when disturbed such as load changes, turbine fluctuation, and other factors. This is extremely dangerous for the electrical system. Most synchronous generators are installed with an excitation system, controlled by an automatic voltage regulator (AVR) to maintain the dynamic stability and power quality of the power system. The AVR functions as the main controller of the excitation system and can maintain the generator terminal voltage under any conditions [3]. The basic foundation of the AVR system is stable and responsive to changes in load. An automatic AVR is a buffer for the output voltage at a pegged level under various conditions.

Complex power systems need good AVR performance. Various approaches to setting automatic voltage regulators are reported in the existing literature; the predominant two types being conventional and computational. The conventional approaches often used in the AVR arrangement are the Cohen-Coon and Zeiglar-Nicholas [4].

In conventional methods, the controller becomes a problem when adjusting the gain from light to severe conditions. This is because settings in one load condition may differ in others. Due to the complex and non-linear adjustment of the AVR, a soft computing algorithm is implemented in this study to adjust the parameter acquisition.

Several computational methods have started to be