

# Curriculum Vitae



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## Personal information

**Name:** Belachew Bantyriga Gessesse (PhD)  
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## Education

No.	Institute/University	Qualification	Year of Graduation
1	University of Duisburg – Essen, Germany	Ph.D. Power System Engineering	July 18, 2013
2	Belarusian State University, Minsk, Belarus	MSc degree in Electrical Engineering (Bachelor + MSc degree )	June 22, 1989

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## Work experience

**Date:** 1990 to date

**Occupation/ Position:**

- Associate Professor at Bahir Dar University, Bahir Dar Institute of Technology (BiT), Faculty of Electrical and Computer Engineering
- Dean for Distance and Continuing Education (From May 2018 to April 2021), Bahir Dar Institute of Technology (BiT), Faculty of Electrical and Computer Engineering.
- Chair for Energy and Power systems (From February 8, 2014, to June 11, 2017) at the Faculty of Electrical and Computer Engineering, Bahir Dar institute of Technology.

**Main activities and responsibilities:**

- Teaching Postgraduate courses: Advanced power system analysis, power systems operation and control, power systems dynamics and transients, computer-aided power system analysis, etc,
- Advised more than 75MSc students From 2014 to date.

- Advising and Co-Advising Ph.D. students
- Active participation in research and community services

### **Social skills and competencies:**

Worked with various team members in academics, administration, research, and organizational activities with simplicity in communication and easy understanding.

### **Organizational skills:**

Strong sense of leadership- highly organized, very good planning skills and great attention to the details and ability to prioritize works.

### **Technical skills and competencies:**

Much experience in laboratory practices (Electrical machines and power system engineering), motor control circuits including induction motor maintenance etc. Power system stability and wind turbine integration analysis using simulation software; Microgrid design and implementation for rural communities, potential applications of stand alone mini grids, etc.

### **Computer skills and competencies:**

Microsoft Office (Word, Powerpoint, Excel), Google Drive, Presentation software, Email management, key social media platforms including Facebook, Twitter, LinkedIn, DIGSILENT Power Factory, PowerWorld simulator, MATLAB Simulink.

## **Relevant Publications from the past five years**

### **1. Web of Science & Scopus indexed**

- Ahunim Abebe, **Belachew Bantyriga**, Fekadu Shewarega, "A generalized approach for the determination of optimum tilt angle for solar photovoltaic modules with selected locations in Ethiopia as illustration examples" Scientific African, Volume 18, November 2022, e01433 (Science Direct). <https://orcid.org/0000-0002-7896-725X>
- Elias Mandefro Getie, **Belachew Bantyriga** Gessesse, and Tewodros Gera Workneh "Photovoltaic Generation Integration with Radial Feeders Using GA and GIS", International Journal of Photoenergy, 2020
- Getaye Yeshaneh Sinishaw, **Belachew Bantyriga**, Kirubel Abebe "Analysis Of Smart Grid Technology Application For Power Distribution System Reliability Enhancement: A Case Study On Bahir Dar Power Distribution" Scientific African Volume 12, July 2021(Science Direct).
- Ahunim Abebe, **Belachew Bantyriga**, Fekadu Shewarega, "Development of Optimal Tilt Angle Models of a Photovoltaic Module for Maximum Power Production: Ethiopia, International Journal of Photoenergy, 2022, DOI: 10.1155/2022/8729570

- Lijalem Dires Asmare, **Belachew Bantyriga Gessesse**, Elias Mandefro Getie, “Techno-Economic Comparisons of HVAC and Simultaneous AC-DC Transmission”. International Journal of Photoenergy, 2022, DOI: 10.1155/2022/8729570
- Ahunim Abebe, Belachew Bantyriga, Fekadu Shewarega, “Feasibility Study and Energy Management of a Hybrid Microgrid for Ethiopian Rural Community”, ICECET 2022, ID-198. <https://www.ecres.net/icecet>

## 2. Publication in Conferences

- Tenaw Ayew Mezigebe, Belachew Bantyriga Gessesse, “Design and Performance Analysis of a Multi-level Fuzzy-Based Stabilizer to Dampen Low-Frequency Oscillation in Single-Machine Infinite Bus Systems”, Springer Nature Switzerland, 2023 | Book, <https://doi.org/10.1007/978-3-031-28725-1>
- Elias M., **Belachew B.**, “Optimal Allocation of Distributed Generation for Performance Enhancement of Distribution System Using Particle Swarm Optimization”, Advances of Science and Technology, Springer International Publishing, 2021, DOI: [10.1007/978-3-030-43690-2](https://doi.org/10.1007/978-3-030-43690-2)
- Nebiyu Y., Elias M., **Belachew B.**, “Performance Enhancement of Distribution Power System by Optimal Sizing and Siting of Distribution System” , Advances of Science and Technology, Springer International Publishing, 2021, DOI: [10.1007/978-3-030-43690-2](https://doi.org/10.1007/978-3-030-43690-2)
- Alganesh Ygzaw, Habtemariam Aberie, Kassaye Gizaw & **Belachew Bantyriga**, “Synchronous generator excitation loss detection based on reactive power flow limit”, Advances of Science and Technology, Springer International Publishing, 2021, DOI: [10.1007/978-3-030-80618-7](https://doi.org/10.1007/978-3-030-80618-7)
- Habtemariam Aberie, Kassaye Gizaw **Belachew Bantyriga** & Alganesh Ygzaw, “Power loss reduction and voltage profile improvement of radial distribution system through simultaneous network reconfiguration and distribution generation integration”, Advances of Science and Technology, Springer International Publishing, 2021, DOI: [10.1007/978-3-030-80618-7](https://doi.org/10.1007/978-3-030-80618-7)
- Abdulkarim Ali and B. Belachew, “Designing and Modeling of a Synchronous Generator Using AGC, PSS, and AVR Case Study on Tis Abay II Hydroelectric Power System”, Advances of Science and Technology, Springer International Publishing, 2021, DOI: [10.1007/978-3-030-43690-2](https://doi.org/10.1007/978-3-030-43690-2)
- Alganesh Ygzaw, **Belachew Bantyriga**, and Marsilas Darsema, ” Generator Excitation Loss Detection on Various Excitation Systems and Excitation System Failures”, Advances of Science and Technology, Springer International Publishing, 2021, DOI: [10.1007/978-3-030-43690-2](https://doi.org/10.1007/978-3-030-43690-2)
- Kassaye Gizaw, Alganesh Ygzaw, **Belachew Bantyriga**, and Habtemariam Aberie, “ Estimation of Synchrophasor Parameters in the Presence of 3rd & 5th Harmonics and White Gaussian Noise”, Advances of Science and Technology, Springer International Publishing, 2021, DOI: [10.1007/978-3-030-80618-7](https://doi.org/10.1007/978-3-030-80618-7)

## Synergetic activities

- Principal Investigator (PI) for PEER Science cycle 3 project funded by USAID under the title “Development of a Microgrid Research Center in Ethiopia to support USAID’s Power Africa program” <http://sites.nationalacademies.org/PGA/PEER/PGA>
- Chief Editor of the proceedings of 2<sup>nd</sup> International Conference on the Advancements of Science and Technology: ICAST-2014, Bahir Dar Institute of Technology, Bahir Dar, Ethiopia.
- Editor for the proceedings of 2<sup>nd</sup> International Conference on the Advancements of Science and Technology: ICAST-2015, Bahir Dar Institute of Technology, Bahir Dar, Ethiopia
- Editor of the proceedings of 8<sup>th</sup> International Conference on the Advancements of Science and Technology: ICAST-2020, Bahir Dar Institute of Technology, Bahir Dar, Ethiopia

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## MSc Thesis Advised (Selected few)

- Design, Modelling and Control of Standalone DC Micro-Grid for Rural Electrification in Ethiopia
- Design of hybrid wind and solar powered street lighting for Bahir dar City
- Alternative analysis of grid-tied resilient PV system for supplying power to Ethio-Telecom multi-service access gateway /MSAG/ network
- Design and Control of Synchronous Generator Using Power System Stabilizer and Automatic Generation Control :Case Study Tis Abay II Hydroelectric Power
- Power quality improvement using UPFC with PI and fuzzy logic controller in Gonder distribution network.
- Reliability assessment of distribution network for medium voltage system of Bahir Dar town
- Application of FACT devices for improved dynamic performance of a power grid with the integration of Wind Farms
- Implementation of dynamic voltage restpre (DVR) for power quality enhancement in power distribution system
- Voltage Stability Analysis of the Ethio- Sudan Power Systems Interconnection and its Potential Impacts
- Power transmission capacity and power system stability improvement of existing HVAC lines with simultaneous AC-DC transmission [Case Study: Tana Beles - Addis Ababa 400 kV Transmission Line]

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## PhD on progress (Co- Advising)

- Intelligent and Comprehensive Power Management and Control of Hybrid AC-DC Smart Microgrid Using Multi-Agent System
  - Study the Potential Application of Fuzzy Logic Based AGC and AVR for Multi-Area Interconnected Power system
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## References

- Dr.-Ing, Fekadu Shewarega, Research staff at the University of Duisburg-Essen, Department of Power systems, Bismarckstr.81, 47057 Duisburg, Germany, E-mail: [fekadu.shewarega@uni-due.de](mailto:fekadu.shewarega@uni-due.de)
  - Dr.-Ing. Getachew Biru, Former Dean of the Ethiopian Aviation Academy, currently guest lecturer at Addis Ababa University, Ethiopia. E-mail: [gbiru@yahoo.co.uk](mailto:gbiru@yahoo.co.uk)
  - Professor Seifu Tilahun, Bahir Dar Institute of Technology, Bahir Dar University, P.O.Box 26, Bahir Dar, Ethiopia. E-mail: [satadm86@gmail.com](mailto:satadm86@gmail.com)
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