

Centre d'Excellence Régional pour la Maîtrise de l'Electricité/ Regional Center of Excellence for Electricity Control (CERME)





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A- Key Infos :

- Financement: IDA/Banque Mondiale
- Montant: 6 Millions de Dollars US
- Début: 07 Mai 2020
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B- 05 Components :

- 1- Governance and operation
- 2- Excellence in teaching and training
- 3- Excellence in research
- 4- Development impact
- 5- Educational and research infrastructure

C- Educations :

- Three (03) regional Master and Master Engineer courses;
- two (02) doctoral training;
- short-term training modules for professionals

D- 04 Lines of research :

- 1- Mastery of electrical grid techniques, electrical machines and electrical machine controls
- 2- Control of renewable electrical energies and studies on materials used in the development of electrical equipment
- 3- Energy efficiency
- 4- Solutions to the environmental impacts of electricity and energy storage

Scholarship (free registration, accommodation and monthly allowance) for non-Togolese.

Three (03) regional Master courses (251)

N°	Domaine	Type	Mention	Spécialité
1	Science and Technology (ST)	Research	Physique	Advanced Materials for Electricity
2		Research	Engineering Sciences	Research engineer in Electrical Engineering
3		Professional	Engineering Sciences	Design Engineer in Electrical Engineering

Two (02) doctoral theses courses (61)

N°	Domaine	Type	Mention	Spécialité
1	Science and Technology (ST)	Research	Engineering Sciences	Electroenergetics and Smart grids
2		Research	Engineering Sciences	Materials, renewable electricity and energy efficiency

07 titles of Research's cluster

Wind power	Optimization of energy production and consumption (intelligent energy management)	Prediction and planning of energy production (Smart Energy Management)	Materials for PV conversion	Energy production from biomass	Energy efficiency of buildings	Environmental pollution linked to energy consumption
• Manufacturing and Development of Wind Systems • Performance and testing of wind systems including generators	• Including storage • Including flexibility • Electrification via micro-grids	• Including Weather • Including Temperature • Sunshine • Humidity • Potential of primary sources of production in rural areas • Energy sharing according to environments and regions	• Absorber materials for the development of PV • Development of dye-sensitized solar cells	• Peltier cell / Seebeck cell • Energy storage • Electrode manufacturing • Battery testing and quality control	• Substitution of Cement by clay (calcined and stabilized). Replacement of a % of Cement by clay • Thermal property study • Characteristic studies • Use of local materials for construction and roofing • Study of materials to reduce heat in buildings. • Building instrumentation	• Gas pollution (natural resource, oil as a conventional energy source) • Analysis of pollution gases in the environment. Example Car. Generator • Urban densification / non-densification problem (current and voltage drop, voltage regulation) • Watershed problem (flooding after dams) • Characteristics studies

E- Sector Consultative Committee (SCC) composed of 15 sectoral and industrial leaders in the electricity sector:

DGE (Direction Général des Energies)

CEET (Compagnie Energie Electrique du Togo)

CEB (Communauté Electrique du Benin)

ATZER (Agence Togolaise d'Electrification Rurale et des Energies Renouvelables)

ARSE (Autorité de Réglementation du Secteur de l'Electricité)

SABER (Société Africaine de Biocarburants et des Energies Renouvelables)

INPIT (Institut National de la Propriété Industrielle et de la Technologie)

FCT (Faîtière des Communes du Togo)

CCIT (Chambre de Commerce et d'Industrie du Togo)

HAUQE (Haute Autorité de la Qualité et de l'Environnement)

ANPE (Agence Nationale Pour l'Emploi)

TOGOCOM

MOOV AFRICA TOGO

ASPER

CREFER (Centre Régional d'Etude et de Formation en Energies Renouvelables)

F- International Scientific Advisory Committee (CCSI) composed of 10 teacher-researchers from:

Université d'Abomey-Calavi (BENIN) ;

Ecole supérieure polytechnique (ESP) / UCAD de Dakar (SENEGAL) ;

Université Assane Seck de Ziguinchor (SENEGAL) ;

Université Gaston Berger de Saint-Louis (SENEGAL) ;

Institut de Recherche sur les Energies Nouvelles / Université Nangui Abrogoua, Abidjan, (CÔTE D'IVOIRE) ;

Ecole des Ingénieurs de Metz (ENIM)/ Université de Lorraine, Metz, (FRANCE) ;

Université de Cape Town (AFRIQUE DU SUD) ;

Université du Québec à Trois-Rivières (UQTR), Trois-Rivières (Québec), (CANADA) ;

Université d'Auburn (USA) ;

Université de Lille (FRANCE).

F- Short-term training modules already deployed (in Niamey in NIGER, in Ouagadougou in Burkina-Faso, in Abomey-Calavi in Benin, in Bouake in Ivory Coast). (more than 789 learners trained)

- ✓ Study, sizing and maintenance of a photovoltaic installation on an isolated site;
- ✓ Self-consumption of photovoltaic solar energy;
- ✓ Lighting using photovoltaic solar energy;
- ✓ Building electrical installation;
- ✓ Problems and solution approaches to the integration of ENRs into distribution and transport grid;
- ✓ Sizing and installation techniques for a photovoltaic power plant



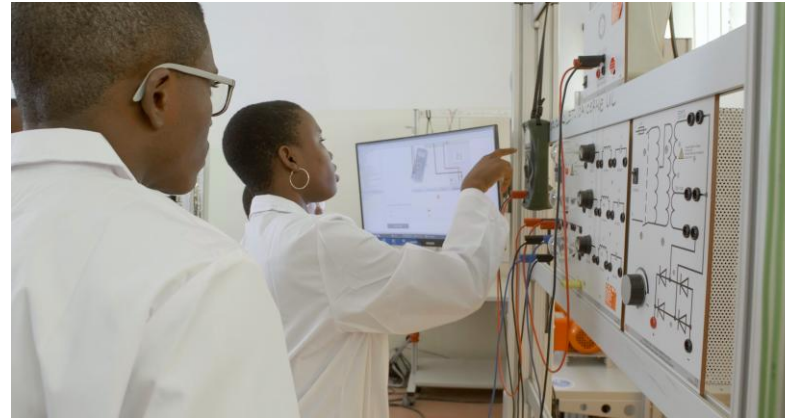
Bénin

G- Laboratoires :

Electrical machinery laboratory



Electrical engineering and automatic laboratory



*Visite dans un poste de transport
d'énergie électrique*



Solar pumping laboratory



List of some research works published in journals as articles

LIST OF RESEARCH WORKS PUBLISHED IN JOURNALS AS ARTICLES

- [1] *Edjadessamam Akoro, Yao Bokovi, Akueté Pierre Agbessi and Gnakou Mazama Ateyo. Study of the stability of a high-power PV conversion chain for isolated site supply. The 3rd International Conference on Energy and Green Computing (ICEGC'2024), E3S Web of Conferences 601, 00086(2025).16 January 2025, <https://doi.org/10.1051/e3sconf/202560100086>*
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- [3] *Apaloo Bara Komla Kpomonè, Bokovi Yao, Ghafi Kondi-Akara Victoire and Moro Ouma Cecil Naphtaly, Autoregressive Integrate Mean Average as Approaches for Modeling Energy Production in the Electricity Network by Seasons of the Electric Energy Company in Lomé, Togo, American Journal of Engineering and Applied Sciences dec. 2024, 17 (4) :100-126, ISSN : 1941-7020 (Print), ISSN: 1941-7039 (Online) <https://thescipub.com/ajeas/issue/1477>
<https://doi.org/10.3844/ajeassp.2024.100.126>*
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- [7] *Apaloo Bara Komla Kpomonè, Palanga Eyouleki Tcheyi Gnadi, Bokovi Yao, Kuevidjen Dosseh, Nomenyo Komla, Multiple Linear Regression to Predict Electrical Energy Consumption Based on Meteorological Data: Application to Some Sites Supplied by the CEB in Togo, American Journal of Applied Sciences 2024, Volume 21: 15.27, DOI: 10.3844/ajassp.2024.15.27 <https://thescipub.com/abstract/10.3844/ajassp.2024.15.27>*

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