

COMSATS' Proposed Centre of Excellence in Senegal University Cheikh Anta Diop (UCAD)



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Advisor (Programmes)

University Cheikh Anta Diop (UCAD), Dakar, Senegal

Status of the Organization

- The University of Dakar was established on February 24, 1957 and officially inaugurated on December 09, 1959, which later became Université Cheikh Anta Diop de Dakar on March 30, 1987;
- The University Cheikh Anta Diop (UCAD) is a public institution and non-for-profit organization under the administrative control of Ministry of Higher Education, Universities and Scientific Research
- In accordance with the Law Governing Education, UCAD has the task for the compilation and transmission of knowledge and the development of research in view of training middle and senior management level technically qualified and appropriate to the African context.
- UCAD has training and research facilities in order to preserve the ability to fulfill its three functions: training, research and provide services to society

➤ **Focused Areas:**

economic, social and industrial domains in Senegal and African Countries. Tropical Medicine, Renewable Energy, Biotechnology, Veterinary Medicine, Pharmacology, Environmental Sciences, Information Science, Agro Biology, Agro Chemistry

University Cheikh Anta Diop (UCAD)

- The Rector, appointed by the President of the Republic of Senegal, is the head of the institution, under the direction of the Ministry of Higher Education.
- UCAD has 6 faculties
 - ✓ Faculty of S&T
 - ✓ Faculty of Economic Sciences and Management
 - ✓ Faculty of S&T for Education and Training
 - ✓ Faculty of Law and Politic Sciences
 - ✓ Faculty of Medicine, Pharmacy and Odonto Stomatology
 - ✓ Faculty of Letters and Human Sciences

Library of University Cheikh Anta Diop

- Library of University Cheikh Anta Diop: The documentation system of UCAD is composed of 18 libraries linked with the Central Library. On January 1983, there were more than 3,00,000 volumes, 6000 periodical titles.
- The library has multiple relations with numerous libraries in Africa, Europe, and North America

Data Bases Available: EBSCO, Cambridge Journal

Journals Available:

- Journal for Faculty of S&T
- Journal of Sciences: <http://www.ucadjds.org>

University Cheikh Anta Diop (UCAD)

Faculty of Science and Technology (FST)

The Faculty of S&T (<http://fst.ucad.sn>) is devoted to teaching and research in:

- 6 departments: Mathematics, Physics, Chemistry, Animal Biology, Vegetal Biology and Geology;
- Two institutes for higher education:
 - ✓ the Institute for Environmental Sciences (ISE)
 - ✓ the Institute for Earth Sciences (IST)
- Two research institutes
 - ✓ the Institute “Souleymane FALL” for pedagogic Research on Mathematics, Physics and Technology (IREMPT)
 - ✓ Biological Research Centre on Leprosy (CRBL)

University Cheikh Anta Diop (UCAD)

Polytechnic Higher School

The Polytechnic High School (<http://www.esp.sn>) which is an integral part of UCAD, was established on November 1994.

Composed of 6 departments and 12 laboratories: Civil Engineering, Electrical Engineering, Mechanical Engineering, Computer Engineering, Chemical Engineering and Applied Biology, Management.

Centre for Studies and Research on Renewable Energy (CERER)

The CERER (<http://cerer.ucad.sn>) is a research institute of the UCAD.

Mission:

to do research and develop renewable energy technologies for conservation of environment and to fulfill the energy needs of the Country.

Focused areas:

- Solar Photovoltaic (PV)
- Solar Thermal
- Biomass
- Wind Energy
- Energy Management

Centre for Studies and Research
on Renewable Energy (CERER)

Faculty of Science and
Technology (FST)

Laboratory of Semiconductors and
Solar Energy (LASES)

Laboratory of Materials
Science (LSM)

Research Group on Thermal
Transfers (GRTT)

Laboratory of Fluids
Mechanics and Applications
(LMFA)

Polytechnic Higher School
(ESP)

Laboratory of Applied
Energies (LEA)

Laboratory of Renewable
Energy (LER)

International Centre for
Training and Research on
Solar Energy (CIFRES)

Laboratory of Physics of
Atmosphere and Ocean
(Simeon Fongang)

Centre for Studies and Research
on Renewable Energy (CERER)

Laboratory Photovoltaic Energy

Laboratory of Thermal Energy
Thermodynamics

Laboratory of Biomass and
Domestic Fuels

Laboratory of Wind Energy

University Cheikh Anta Diop (UCAD)

Operational Cost

CERER US \$ 4500

ESP US \$ 200,000

FST not evaluated

Government Support:

Government established two external resource mobilization mechanism the FNRAA (National Agriculture and Food Research Fund) and the FIRST (Funds to promote Scientific and Technical Research) which are funds (about US \$ 4,58,000) allocated for researchers on a competitive basis

Government Allocated Budget for Research at:

First Year (2005): US \$ 6,55,500

Second Year (2006): US \$ 7,98,800

Third Year (2007): US \$ 7,51,500

Fourth Year (2008): US \$ 6,90,500

ACADEMIC STAFF

Laboratories

- i) No of Ph.Ds
- ii) No of Postgraduates
- iii) No of Graduates
- iv) No of Technicians
- v) No of Administrative staff
- vi) Any other

	FST	ESP	CERER
i) No of Ph.Ds	17	24	1
ii) No of Postgraduates	30	27	6
iii) No of Graduates	40	13	0
iv) No of Technicians	2	14	4
v) No of Administrative staff	4	4	6
vi) Any other	2	8	3

University Cheikh Anta Diop (UCAD)

Training:

The training in the research structures is oriented to the formation of Graduate and Post Graduate students in Renewable Energy. The following trainings are carried out:

Undergraduate Courses

Graduate Courses

- ✓ Renewable Energy related fields
- ✓ Material Sciences
- ✓ Condensed Matter Physics
- Fluid Mechanics

Post Graduate Courses

Solar Energy, Materials and Systems

Research Projects:

➤ **Faculty of S&T:**

- ✓ Synthesis of thin Solar film cells
- ✓ Electrochemical deposition of n-type CdTe
- ✓ Models for the spectral response of photo-electrochemical cells
- ✓ Nano-transparent conducting oxides (TCO): W-doped ZnO
- ✓ Photo-Induced Tunable and Reversible Wettability of Pulsed Laser
- ✓ Optical Resonance in Carbon nanotubes based Cavities
- ✓ Induced structural damage by He⁺ irradiation in conducting transparent Indium Tin oxide nanostructures
- ✓ Technology Development, Poverty Eradication and Sustainable Development

➤ **CERER:**

- ✓ PV Systems
- ✓ Improved Stoves
- ✓ Thermal Systems

➤ **ESP:**

Optimal design of a hybrid solar wind-battery system using the minimization of the annualized cost system and the minimization of the loss of power supply probability (LPSP)



THANK YOU