

PRESS RELEASE N° 17 / 00175 /MINESUP/SG/DAUQ/SDEAC OF

Launching the selection for admission into the M.Sc. of the Centre for Atomic Molecular Physics and Quantum Optics (CEPAMOQ) of the Faculty of Science of the University of Douala, and to fix the number of places available, for the 2017-2018 academic year.

THE MINISTER OF HIGHER EDUCATION HEREBY ANNOUNCES

Within the framework of the AC-71 project of the Abdus Salam International Centre for Theoretical Physics, the Centre for Atomic Molecular Physics and Quantum Optics (CEPAMOQ) of the Faculty of Science of the University of Douala will admit students for the 2017-2018 academic year, this being the seventh batch of students from Central Africa in the M.Sc. diploma in **PHYSICS OF MATTER AND RADIATION**, in accordance within the requirements stipulated hereafter.

ADMISSION

Holders of a "Maîtrise" (or M.Sc. I) Degree in Physics or any other equivalent qualifications recognised by the Minister of Higher Education are eligible to apply. Consideration will be given to the candidate's previous academic background as well as a good knowledge of French and English. **Twenty (20) applicants** will be selected in M.Sc. II through an examination of application files by a jury appointed by the Minister of Higher Education. Applicants should deposit application files at the Secretariat of the Centre on or before the deadline of **15 July 2017**. The application file is made up of the following:

1. a hand written application of at most two pages, stating the candidate's motivations;
2. a detailed curriculum vitae et studiorum with two passport-size photographs not older than three months;
3. certified true copies of university degrees or diplomas (beginning with the G.C.E Advanced level or the Baccalaureat or any equivalent qualifications recognised by the Ministry of Higher Education);
4. certified true copies of all university transcripts for the B.Sc. and M.Sc. degrees;
5. certified true copies of the detailed course programmes of the B.Sc. and M.Sc. These documents should be authenticated by the academic authorities of the former institution (s) attended by the candidate;
6. a certified true copy of birth certificate not older than three months;
7. a medical certificate of fitness stating that the candidate can carry out doctoral studies;
8. a large stamped envelope or containing three(03) international reply coupons and bearing the candidate's address;
9. a statement for secondment covering the period of studies for employees. This is applicable to workers.
10. A receipt of **twenty five thousand (25 000) CFA Frs** paid into the CEPAMOQ bank account: **UBA n°10033-05214-14004000008-84**.

Final results will be published by the Minister of Higher Education. The course begins on 1st October 2017.

OBJECTIVES

The objectives of the above mentioned project are to train in microphysics, 20 experts of the radiation-matter interaction

- a) who will eventually be involved in university teaching and research ;
- b) Capable of tackling quality control and environmental pollution problems using modern optical and nuclear techniques.

SCHOLARSHIPS

CEPAMQ can only provide a limited number of scholarships within the framework of the AC-71 project. The scholarship consists of a monthly living subsistence allowance, a health insurance, and for foreign students, an allocation for transport from their countries of residence to Douala. Unsuccessful candidates for scholarship can apply for support from their respective governments, any other organisation or pay for their studies themselves.

COURSES

The Doctorate programme is based on three options: Optics & Applications, Dosimetry & Radiation Protection, Atoms & Molecules. The M.Sc. II graduate programme shall be based on the following three main courses:

CORE COURSES	
UEMR 500	Advanced Quantum Mechanics
	Atomic Physics
	Molecular Physics
UEMR 501	Statistical Physics
	Tools for High Computing
UEMR 502	Dissertation and Seminars

OPTIONS					
Optique & Applications		Dosimétrie & Radioprotection		Atomes & Molécules	
UEMR 503	Spectroscopy	UEMR 504	Physique Nucléaire	UEMR 505	Relativistic Quantum Mechanics
	Physics and Modern Applications of Lasers		Radiation-Matter Interactions and Radiation Detection		Physics and Modern Applications of Lasers
	Fourier Optics		Biological Effects of Ionising Radiation and Dosimetry		Mean Fields Theory

RESEARCH TOPICS

1. Optics and Applications

- Drugs toxicity reduction: thermodynamics of the binding of Mamea A/AA on cyclodextrin derivatives by UV-visible spectroscopy.
- Determination of lactulose and furosine commercialized in Douala and Yaounde using front-face fluorescence spectroscopy.
- Fluorescence spectroscopy study of honey adulteration.
- Influence of the amino group torsional motion on the spectroscopy of thieno-guanosine in DNA
- Study of the dynamical and optical properties of graphenes.
- Angular momentum induced by optical quasi-modes in the ZnO thin film.
- Wave propagation of light in an optical fiber: attenuation and regeneration of the signal.

2. Applied Nuclear Physics and High Energy Physics

- Control of radiological contamination of the fisheries products in Cameroon.
- Radioecological monitoring of certain mining areas in Cameroon.
- Update of dose coefficients by ingestion and inhalation of natural radionuclides

- Indoor measurements of radon, thoron, and thoron progeny in certain areas of Cameroon potentially rich in uranium and thorium.
- Determination of some characteristics of a cobalt radiotherapy machine by radiochromic film dosimetry.
- Influence of the scattering of scanner light in radiochromic film dosimetry

3. Atoms and Molecules

- Nonrelativistic dynamics of one- and two-active electron atoms in intense electromagnetic field, at low and high frequencies.
- Relativistic dynamics of highly charged hydrogenic ions in high frequency and super intense laser field.
- Physical processes in electron-helium collisions at high incident energy.
- Molecular collisions of astrophysical interest induced by He/H₂: potential energy surfaces and rate coefficients for excitation at low temperature.
- Rovibrational transitions in diatomic *SiS*, *SiO* and triatomic *SiCN*, *NaCN* molecules.

TRAINING STAFF

Training and research activities at CEPAMOQ are carried out under the guidance of Cameroonian and foreign lecturers and research scientists.

For further information all interested persons should consult the websites of the Minister of Higher Education <http://www.minesup.gov.cm> and the University of Douala <http://www.univ-douala.com>



Jacques FAME NDONGO,
MINISTER OF HIGHER EDUCATION