CRYSTALLOGRAPHY IN COTE D'IVOIRE

Crystallography for the next generation: the legacy of IYCr

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OUTLINE

Introduction

- Introduction of Côte d'Ivoire
- Higher education and scientific research
- International Year of Crystallography
- Target and Challenge
- Strength and opportunities
- Perspectives
- Conclusion

INTRODUCTION

- International Year of Crystallography is a major opportunity for the development of this science
- It has enabled several meetings for specialists of all continents towards fulfilling the objectives.
- Côte d'Ivoire is happy to be associated with this initiative.
- On behalf of Higher education and scientific research Ministry and F. HOUPHOUET-BOIGNY University,
- \checkmark we apologize for not achieving our objectives and
- kindly thank this assembly for the opportunity.

ABOUT CÔTE D'IVOIRE

MAIN INDICATORS 2009 - 2010

- WEST AFRICAN country
- 322 462 km² (Source : INS-CI, RGPH 1998)
- GDP (millions USD), 2009 : 2 000 (UEMOA, BCEAO, Avril 2010)
- Population 2009 : 21 395 000 (INS/ Democraphic Perspectives 2002)
- Public funds for education in % GDP, 2009 : 4,9% (MEF CI)
- Educated-people less than 15 year-old, 2008 2010 : 53,5%
- - Men : **43,9%**
- - Women: 63,2% (INS-ENV 2008)
- Students/ 100 000 habitants : 674 (DPE)
- Winner of African Nation Cup (2015)



HIGHER EDUCATION AND SCIENTIFIC RESEARCH

Public institutions

- F. HOUPHOUET-BOIGNY de Cocody University
- NANGUI ABROGOUA d'Abobo-Adjamé University
- Jean LOUROGNON GUEDE de Daloa University
- Péléforo GBON COULIBALY de Korhogo University
- Allasane OUATTARA de Bouaké University
- - National High School for Statistic and economic application
- -National Institut of Polytechnique F. HOUPHOUET-BOIGNY Yamoussoukro;

High school for Teaching Education.

- 2- University and private high school
- 3- High school of others Departments
- 4- Scientific Research centers and institutes

SCIENTIFIC RESEARCH AND TECHNOLOGY INNOVATION SYSTEM



Crystallography year meeting worldwide



INTERNATIONAL YEAR OF CRYSTALLOGRAPHY

- Côte d'Ivoire as focal country for meeting and open Lab
 Prof. TENON Jules and Prof COFFI-HOUPHOUET-BOIGNY our Ambassador for UNESCO represented C I at the quick of meeting to Paris (Janvier 2014)
 Two Diffractometers as a gift from BRUKER society
- High Political engagement by Ministry Council Communication given 78 M de F CFA (120 000 Euros or 140 000 USD) for equipment and global organisation
- Difficulties due to Ministry reorganisation (April 2014)
- New plans and perspectives

TARGETS AND CHALLENGE

- Emerging country at 2020
- Economic, social, political and cultural
- Feeding challenge
- > Water challenge
- Energy challenge
- Health challenge
- Environmental challenge
- Training and employment challenge
- Cultural challenge



- MOLECULAR PHYSIC AND CRYSTALLOGRAPHY LABORATORY
 (LaCPM) as a basic unit for the implementation of Crystallography
- Eleven (11) Teacher and research
- one (1) Electronic Engineer
- seven (7) PHD students
- Ten (10) masters

RESEARCH FOCUS

- Focus 1 : molecular structures modelization ;
- Focus 2 : environmental stress of plants with economic interest
- <u>Focus 3 :</u> Quantification of electronic status for diatomic molecules

Tools and technologies

- Crystallography ;
- Spectroscopy IR FT, UV-Visible, Laser, mass ;
- X-ray Fluorescence ;

Multidisciplinary crystallography development

Focus 1 : molecular structures modeling

- Labos organic chemistry, natural substances, pharmacopea, inorganic chemistry, optometry, (UNA, UFHB, INPHB, UJLG)
- <u>Focus 2</u> : environmental stress of plants with economic interest ;
- Labo of tree and plant Physiology, CNRA, LANADA
- <u>Focus 3 :</u> Quantification of electronic status for diatomic molecules
- INPHB, physical chemistry laboratory
- Industrial application in differents sectors
- Many international Collaborations

MAIN FIELD

- Agriculture
- Civilizations
- Environment
- Administrative and Economic Management
- Mines and Energy
- Health
- Natural substances
- Technology
- Crystallography as technical tool and help for strategies development.



- Cycle of Conferences (May 2015)
- Innovation Forum (May 2015)
- Crystallography classroom (2016)
- Secondary School competition (2016)
- Diffractometer installation (July 2015)
- Open Lab (Sept-Oct 2015)

Number 1 producer of cocoa Quality of cocoa butter is important

- •Cocoa butter is the main ingredient of the chocolate and have six crystallines differents forms.
- •But only one form is the better with good texture, this crystalline form is stable.
- Crystallography will be a good tool for the characterization of this form for producers and factories.



Des vertus du beurre de cacao

Je vous remercie THANKYOU