



FORM 200
Application for an
IPS, IRDF or VF
COVER PAGE

AID
CTTEE
Date 2016/06/18

Type of Award VFG	Reference No. 386145724
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Family name of applicant Olatinwo	Given name Mutairu Bolaji	Initial(s) of all given names MBO	Personal identification no. (PIN) 500753
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ADDRESSES. Changes to any of the information below must be sent to schol@nserc-crsng.gc.ca.

Current address 375 West Roosevelt St., Apartment 3226 Baton Rouge, LA UNITED STATES 70802	Permanent address (if different from current mailing address) Sw9/800 B Apata Ganga, Ibadan, Oyo State Nigeria NIGERIA	
If current address is temporary, indicate leaving date	Telephone number at permanent address 234 (70) 30123416	
Telephone number (225) 2762385	Facsimile number	E-mail address NSERC will use this information as the initial point of contact. molati1@lsu.edu

CITIZENSHIP

<input type="checkbox"/> Canadian citizen	<input type="checkbox"/> Permanent resident of Canada	<input checked="" type="checkbox"/> Other
Indicate date of landing as stated on official immigration document		Indicate country of citizenship Nigeria

LANGUAGE OF CORRESPONDENCE

I wish to receive my correspondence in:

<input checked="" type="checkbox"/> English	<input type="checkbox"/> French
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SIGNATURE (Refer to the instructions under the heading "What does my signature on the application mean?")

I hereby agree that any award made to me as a result of this application will be subject to the general conditions governing scholarships and fellowships. These conditions are outlined in this Web site in the NSERC *Program Guide for Students and Fellows*, and *Visiting Fellowships in Canadian Government Laboratories* guide.

Applicant's signature



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ACADEMIC BACKGROUND (include only current and past degree programs)

Degree	Name of discipline	Department, institution and country	Month and year started	Month and year awarded/expected
Bachelor's	Industrial Chemistry, BSc	Chemistry University of Ibadan, NIGERIA	6 / 2003	4 / 2007
Master's	Organic Chemistry, MSc	Chemistry University of Ibadan, NIGERIA	8 / 2008	Transferred to Ph.D.
Doctorate	Inorganic Chemistry-Materials Science	Chemistry Louisiana State University, UNITED STATES	8 / 2011	8 / 2016



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			Date 2016/06/18	
Type of Award VFG	Family name of applicant Olatinwo	Given name Mutairu Bolaji	Initial(s) of all given names MBO	Personal identification no. (PIN) 500753
ACADEMIC, RESEARCH AND OTHER RELEVANT WORK EXPERIENCE				
Position held and nature of work (begin with current) Full Time - Part Time	Organization and department	Supervisor	Period (mm/yyyy-mm/yyyy)	
Teaching Assistant - Full Time Teaching of general chemistry laboratories	Louisiana State University Chemistry	Dr. Linda Allen	8/2014 - 5/2016	
Research Assistant - Full Time Working on analysis of various formulations of flame retardants using X-ray imaging techniques and m	Louisiana State University Chemistry	Prof. Leslie G. Butler	1/2012 - 6/2016	
Solution Assistant - Full Time Working in the organic lab to prepare solutions for the advanced organic chemistry labs	Louisiana State University Chemistry	Dr. Tamara Nauman	8/2011 - 12/2011	
Lecturer II Teaching of organic and inorganic chemistry classes and labs	Kwararafa University Chemistry	Dr. Raphael Odoh	2/2010 - 7/2011	
Intern student - Full Time Preparation of solutions for the laboratory experiments.	Lagos University Teaching Hospital, LUTH, Lagos, Nigeria Pharmaceutical Department	Mr. Abideen Osibanjo	5/2005 - 8/2005	

Personal identification no. (PIN)	Family name, given name and initial(s) of applicant
500753	Olatinwo, Mutairu Bolaji MBO

AWARD APPLIED FOR

Type of award Visiting Fellowships in Canadian Government Laboratories	Proposed starting date of award 2017/01
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Proposed degree program (e.g. Bachelors, Masters, Doctorate)	Proposed field of study/research POLYMER CHEMISTRY	Research subject code 3750
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Title of proposed research
New generation flame retardant, alloy, renewable energy and materials studies using X-ray imaging method coupled with UL 94 test, FTIR, XANES, GCMS, ICPMS, EGA, SEM-EDS and spectrophotometry.

List ten (10) key words that describe your proposed research. Use commas to separate them.

Flame retardants, X-ray K-edge absorption, Tomography, Interferometry, Radiography, UL 94 burn test, Visualization, FEI Avizo, Char layer, Gas bubbles

PROPOSED LOCATION(S) OF TENURE (in order of preference)

Institution/organization	Department	Program of study	Proposed supervisor
Natural Resources Canada, Atmospheric Environment Service, National Water Research Institute,	Advanced Combustion Technology Canadian Light Source Saskatoon		

Are any of your proposed programs of study:

Clinically-oriented? ☒ Yes ☐ No Joint programs with a professional degree (e.g., MD/PhD)? ☒ Yes ☐ No

SECTION TO BE COMPLETED BY IPS APPLICANTS ONLY

Indicate the total number of months of graduate studies (master's and doctoral) you have completed as of December 31 of the year of application in the natural sciences and engineering.

_____ months of full-time studies _____ months of part-time studies

Indicate the number of months of studies you have completed, as of December 31 of the year of application, **in the program for which you are requesting funding.**

_____ months of full-time studies _____ months of part-time studies

Indicate if you are attending university at the time of application.

Attending full time ☐ Attending part time ☐ Not attending



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SCHOLARSHIPS AND OTHER AWARDS OFFERED (start with most recent and include NSERC awards)					
Name of Award	Value \$CAD	Level Institutional, Provincial, National, International	Type Academic, Research, Leadership, Communication	Location of tenure	Period held (yyyy/mm - yyyy/mm)
Student Travel Award, LSU	1,200	Institutional	Academic	LSU Graduate Dean's Award	2010/04 - 2009/11
Muzaffar Zafr Educational Scholarsh	1,300	Institutional	Academic	LSU	
Student Travel Award, LSU	650	National	Academic	Argonne National Lab	
A. G. Leventis Foundation	15,450	International	Research	LSU	
Alpha Kappa Alpha Educational	1,676	National	Academic	Louisiana State University	
Oyo State Scholarship Award	1,295	Provincial	Academic	University of Ibadan, Nigeria	

Type of Award VFG	Personal identification no.(PIN) 500753	Family name, given name and initial(s) of applicant Olatinwo, Mutairu Bolaji MBO
THESIS COMPLETED OR IN PROGRESS		
1. Degree PhD	Supervisor Prof. Leslie G. Butler	Date degree requirements completed 05/2016
Title of thesis USE OF X-RAY K-EDGE TOMOGRAPHY AND INTERFEROMETRY IMAGING TECHNIQUES FOR THE STUDIES OF BROMINATED FLAME RETARDANTS		
2. Degree MSc	Supervisor Dr. Ganiyat K. Oloyede	Date degree requirements completed 05/2010
Title of thesis CHEMICAL CONSTITUENTS AND BIOLOGICAL ACTIVITIES OF LEAVES AND BARK-STEMS OF SANDBOX TREE, HURA CREPITANS		
SUMMARY OF THESIS MOST RECENTLY COMPLETED OR IN PROGRESS		
<p>Use plain language. Do not reproduce abstract of thesis.</p> <p>The work presented in the dissertation is based on the studies of flame retardancy performance of various formulations consisting of brominated flame retardants (BFRs: Saytex 8010 and Green Armor) and their synergist, antimony trioxide (Sb_2O_3) in high impact polystyrene (HIPS). Chemical flame retardants are incorporated in polymers to improve their flame inhibition for optimal applications in electrical and electronic devices, furniture, printers and more. These flame retardant polymer blends are studied using the Underwriters Laboratory vertical burn test (UL 94) and X-ray imaging techniques such as X-ray K-edge absorption tomography and X-ray grating interferometry.</p> <p>The UL 94 burn test is initially performed to assess the flammability behavior of flame retardant samples before X-ray imaging methods of burnt and pristine polymer blends. Because the UL 94 test bars are formulated with varying concentrations of a brominated flame retardant (Saytex 8010® or Green Armor®) and a synergist, Sb_2O_3 into a high impact polystyrene (HIPS), samples pass or fail the UL 94 plastics flammability test based on the burn time and other factors. Then, the X-ray imaging techniques are used to reveal internal features for the flame retardant performance during the burn.</p> <p>The Underwriters Laboratory 94 test bars are imaged with X-ray K-edge absorption tomography between 12 to 32 keV to assess the bromine and antimony concentration gradient across char layers of partially burnt samples. X-ray grating interferometry on partially burnt samples shows gas bubbles and dark-field scattering ascribed to residual blend inhomogeneity. In addition, X-ray single-shot grating interferometry is used to record X-ray movies of test samples during heating intended to mimic the UL 94 plastics flammability test. Key features such as char layer, gas bubble formation, micro-cracks, and dissolution of the flame retardant in the char layer regions are used in understanding the efficiency of the flame retardant and synergist. The samples that pass the UL 94 test have a thick, highly visible char layer, low bromine and antimony concentration in the char layer as well as an interior rich in gas bubbles. Growth of gas bubbles from flame retardant thermal decomposition is noted in the X-ray phase contrast movies. Also noteworthy is an absence of gas bubbles near the burning surface of the polymer; dark-field images after burning suggest a micro-crack structure between interior bubbles and the surface. The accepted mechanism for flame retardant activity includes free radical quenching in the flame by bromine and antimony species.</p>		

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JUSTIFICATION FOR LOCATION OF TENURE

Provide a rationale for your choice(s) for location of tenure (maximum 1 page). See instructions for further details.

My first choice of Natural Resources Canada, Advanced Combustion Technology is based on the fact that I think I can contribute for the wise use of resources, reducing costs of materials while still attaining optimal performance, protecting the environment by creating safe materials, and creating new products and services.

Based on the Natural Resources Canada Resource Center, I am interested in conducting excellent research in science and technology to better human experience in developing more efficient and safe materials for use. This is one economical approach of protecting our environment. The CanmetMATERIALS-Hamilton and Calgary for research in metals, materials for use in automotive applications, clean energy, pipelines, eco-materials is doing excellent work, and I think my chemistry knowledge will be useful in research and development to study a variety of materials. Other areas of interest are found in the Bitumen Production Program, Mining and Mineral Sciences Laboratory and CANMET Energy Technology Centre (CETC)-Ottawa for research in mineral processing, waste disposal, characterization, renewable energy, CO₂ management, and transportation systems.

Research into design and development of new generation flame-retardants is essentially important as some brominated flame-retardants are phased out due to environmental issues. More studies are needed for the development of efficient and safe flame-retardants because of their wide range of applications in electronic devices, transportation, furniture, wire and cable and more. Synergism between flame-retardants can help to attain optimal flame retardancy in materials if flame-retardants are used in correct proportion. During combustion and flame propagation of materials without flame-retardants, it leads to production of tons of carbon dioxide, CO₂ causing global warming or climate change. In the presence of flame-retardants, the CO₂ generation is optimally reduced. Using safe flame-retardants, for instance, mineral flame-retardants, such as magnesium hydroxide, Mg(OH)₂ and aluminum hydroxide, Al(OH)₃, it leads to formation of harmless products, but it is not economical due to high loadings/wt% needed to attain optimal flame retardancy performance. In addition, at elevated temperature, their efficiency is drastically reduced. With the recent experience of analysis of brominated flame retardants using X-ray imaging, Underwriters Laboratory burn test, Scanning electron microscope with energy dispersive X-ray spectroscopy, Infra-red and Raman and more, design and applications of new materials will be explored to better research and development in Natural Resources Canada.

Research interests:

- Development of advanced materials, processes and fabrication techniques for the next generation vehicles, including incorporation of flame-retardants.
- Development of hybrid materials, new materials recycling technologies.
- Development of nanotechnology-based titanium dioxide photo-catalyst materials and highly corrosion-resistant materials.
- Development of safe and efficient flame retardants to reduce air emissions during material combustion process.
- Analysis and quantification of air emissions and flame effluents of materials with harmful effects on environment using spectrophotometry, gas chromatography mass spectrometry, Fourier transform infra-red, non-dispersive infra-red, evolved gas analysis. Detection and identifica



FORM 200
Report on the Applicant
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URGENT

Please return to:

By date: (yyyy/mm/dd)

Type of award

VFG

Date

2016/06/18

Read the instructions before you complete this report.

In accordance with the *Privacy Act*, this report will be accessible to the applicant. This report, including your name, may also be disclosed to organizations whose fellowships are administered by NSERC and to partner agencies that offer supplements to NSERC awards.

Family name of applicant	Given name	Initial(s) of all given names	Personal identification no. (PIN)
Olatinwo	Mutairu Bolaji	MBO	500753

Comment on the applicant's research ability/potential and on the applicant's communication, interpersonal and leadership abilities.

I have known the applicant in my capacity as _____ for _____ years.

☐ **Print respondent's**

Name: _____

Title: _____

Affiliation: _____

☐

I have read the applicant's completed Form 200.

Signature of respondent



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Report on the Applicant
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URGENT

Please return to:

By date: (yyyy/mm/dd)

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Date

2016/06/18

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Family name of applicant	Given name	Initial(s) of all given names	Personal identification no. (PIN)
Olatinwo	Mutairu Bolaji	MBO	500753

Comment on the applicant's research ability/potential and on the applicant's communication, interpersonal and leadership abilities.

I have known the applicant in my capacity as _____ for _____ years.

☐ **Print respondent's**

Name: _____

Title: _____

Affiliation: _____

☐

I have read the applicant's completed Form 200.

Signature of respondent

Statement of Research Interests: Mutairu Bolaji Olatinwo

I plan to become indispensable in chemistry, science and technology to immensely contribute my knowledge, experiences and skills to our nations for the betterment of human existence. I like being flexible in research and development to improve problem-solving skills for betterment of existing materials, methods, techniques and discover new efficient systems.

In the past few years, my undergraduate and master programs focused on natural-organic compound isolation with synthesis for their medicinal and biological activities. For instance, the aims of master's dissertation (M.Sc.) were to isolate the medicinal plant constituents and essential oils from the leaves and bark of Sandbox tree (*Hura crepitans*) for phytochemical, antimicrobial screening as well as cytotoxic, antioxidant, and hepatoprotective (*in vitro and vivo*) activities. Some characterizations of the isolated compounds and essential oils were also carried out using various methods of column and thin layer chromatography and elucidation techniques (IR, NMR, MS, UV and GC-MS).

The world is a beautiful place except for the plastic flammability, toxic gas generation and solid waste affecting us in some negative ways. Polymers/plastics are, undoubtedly, a class of materials with numerous applications in all aspects of life. This is because almost everything around us is made of polymers. For example, polymers are used in electronic devices, furniture, printers, textiles, and transportation vehicles to name just a few of their applications.

However, one major problem with these widely used materials is their flammability, which leads to huge losses of life, properties i.e. reaching thousands of lives, billions of dollars and huge recycling problems annually. For instance, according to the U.S. fire statistics in 2011, 1,389,500 fires, 3,005 deaths, 17,500 injuries and \$11.7 billion loss of properties (<http://www.usfa.fema.gov/data/statistics/>) are reported. This also causes damages to our environment, therefore, increasing the solid waste products. Incorporation of safe and efficient flame-retardants (FR) into polymers makes the materials safer, therefore, reducing solid wastes and improving polymer applications. Understanding the mechanisms of safe FR helps to minimize toxic emissions that pose negative effects on humans and environment.

At Louisiana State University, Baton Rouge, started in January 2012, I developed interest in using X-ray imaging in materials science, because it is a powerful and complex technique in revealing the internal structures of materials and systems for their understanding and evaluation. The X-ray imaging involves a lot of processes ranging from the data acquisition through reconstruction to material visualization and analysis. Many programs and software are required to perform a meaningful research with the X-ray imaging system. My PhD research focuses on the use of novel and sophisticated techniques of X-ray imaging techniques to scrutinize the efficiency of brominated flame retardants (BFR) in polymer blends. Another aim is to understand the behavior of FR molecules in polymer composites with ultimate goal of gaining insights that will help make these polymers much safer, economical and effective. Lastly, the objective is to also develop and study more efficient, safe flame-retardants that are non-halogenated using the acquired knowledge, experience and skills gained from BFRs studies. We have been collaborating with Albemarle Corporation (flame retardant manufacturing company) using X-ray imaging techniques for the studies of several BFRs (Saytex-BT93, Saytex-8010,

GreenArmor). Possible future plans are to study the new generation flame-retardants, of light elements using a recent X-ray grating interferometry.

I have more than four years of experience working with a major polymer additive company, Albemarle Corporation. I have studied and assessed the performance of various flame retardant formulations using a novel X-ray interferometry/tomography approach. The studies were performed at two synchrotrons, the Advanced Photon Source (Argonne National Laboratory) and Louisiana State University Center of Advanced Microstructures and Devices (LSU-CAMD). This is the technology that is pushing the X-ray interferometry imaging for low-dose medical applications and rapid image acquisition needed for flame-retardant analysis in polymer matrices.

My knowledge of flame-retardants and their relevance to waste management control can make a great contribution to our nation's health and development. More research is needed to efficiently improve polymer/plastic flame retardancy and recycling of plastics, both high-volume polystyrene, polyethylene terephthalate and low-volume, high-value flame retardant-rich polymers. Safe and efficient flame-retardants for improving the polymer properties and recycling will be achieved with the use of X-ray imaging combined with other methods.

I will continue to work on analysis of various flame-retardants such as new generation flame retardants (nitrogen-based, phosphorous-based, nanoparticle-fillers etc.), and apply the UL 94 burn test, X-ray grating interferometry imaging, optical, near-IR, XANES/EXAFS, XPS, SEM-EDS, GC-MS, ICPMS, GC-MS, HPIC. All these techniques and valuable methods will be used to study low-volume, high-value flame retardant-rich polymers. Aims are to achieve low flammability materials of high industrial applications in electronic devices, aircraft, building and construction, fabric, wire and cables, and furnishings with excellent recycling properties. The techniques will enable us to quantify toxic and non-toxic products generated from various materials under fire conditions to better understand flame retardancy performance and safe flame-retardants.

The X-ray grating interferometry is extremely useful in providing three modalities: Absorption, differential phase contrast and dark-field images in visualizing understanding materials under the investigation. I want to study the design, apply it to various X-ray imaging experiments and improve the X-ray imaging methods, while using the X-ray grating interferometry that relies on the optical elements (phase and analyzer gratings). Design and development of this delicate and extremely important optics are also my interest during the postdoctoral program. This can be performed mostly with a Physics professor in that area of research.

I know how to communicate chemistry with advanced visualization methods. I have nearly daily experience with Avizo, high-end visualization software and other software such as ImageJ and ParaView. I have collaborated and co-authored with visualization experts at the LSU Center for Computation and Technology.

All the available techniques and experience are promising for transitioning from brominated flame-retardants, BFRs to non-brominated ones. The new research can focus on understanding the formulation, performance and environmental implications of the new generation flame-retardants,

which will eventually replace BFRs, and be widely used in polymeric materials to eliminate any environmental concerns on human health. In addition, our environment will be actively protected from fire hazards, minimizing waste disposal, and improving the recycling systems. Putting everything into place through continuous research and development, plastic properties would be improved in terms of low flammability, high mechanical features and optimal applications.

In addition to flame retardant studies, I can possibly add another line of research, which is medicinal natural products chemistry and synthesis. Medicinal plants find applications in pharmaceutical, cosmetic, agricultural and food industries. Recently research has supported the biological activities of some medicinal herbs. Cancer is such a segment where researchers are expecting new molecules from herbs that can provide us with tools/compounds for fighting this dreaded disease. Diabetes mellitus is another area where a lot of research is going on. Hepatoprotective activity of certain botanicals deserves attention now since lots of liver diseases are reported endangering the lives of people. The concept of antioxidants is fastly catching up and latest research has shown that a number of herbal derivatives have excellent antioxidant action. Ancient knowledge coupled with scientific principles can come to the forefront and provide us with powerful remedies to eradicate these fatal diseases. There is a tremendous excitement and challenge in synthesizing molecules never before produced from natural products such as plants or found in nature. There is enough not yet known to keep natural products chemistry interesting and full of opportunities. I always think of new ways to solve problems for scientific discoveries.

I believe that Visiting Fellowship in Canadian Government Laboratories Program will help me to do further research concerning flame retardant applications in intrinsic flammable polymeric materials to save lives, reduce solid waste, enhance recycling and make our environment safe. I will also like to work in partnership with the Atmospheric Environment Service and Natural Water Research Institute to investigate further if flame-retardants mainly contribute to environment pollution in air and seas. In addition, I will also like to explore the field of medicinal chemistry and synthesis to make potent organic compounds of great biological importance, useful in the treatment of deadly diseases such as cancer.

LOUISIANA STATE UNIVERSITY AND A & M COLLEGE

BATON ROUGE, LOUISIANA 70803

OFFICIAL TRANSCRIPT

MUTAIRU BOLAJI OLATINWO
xxx-xx-0671

BIRTHDATE: 05/05

DEGREES AWARDED:

03/2007 BS
UNIVERSITY OF IBADAN09/2010 MS
UNIVERSITY OF IBADAN

UNIVERSITY OF IBADAN

UG 1S/2003-2S/2007

UNIVERSITY OF IBADAN

GR 1S/2009-2S/2010

COURSE TITLE	DEPT	CRSE	GR	CARR	EARN	QPTS
LOUISIANA STATE UNIVERSITY						
1ST SEM 2011-2012 GRAD 7 PCHEM						
INSTR CHAR ORG COMPS	CHEM	4552	A	2.00	2.00	8.00
INTR PHYSICAL-ORG CH	CHEM	4561	A	3.00	3.00	12.00
INTERMEDIATE ORG CH	CHEM	4562	A	3.00	3.00	12.00
SEMINAR	CHEM	7800	P		1.00	
SEMINAR	CHEM	7800	P		1.00	
SEMINAR	CHEM	7800	P		1.00	
SEMINAR	CHEM	7800	P		1.00	
SEMINAR	CHEM	7800	P		1.00	
ENGL COMPOSITION	ENGL	1004	P		3.00	
SPK ENGL INT GRD AST	ENGL	1051	P		3.00	
SEMESTER				8.00	19.00	32.00 4.000
LSU SYSTEM				8.00	13.00	32.00 4.000
CUMULATIVE				8.00	13.00	32.00 4.000

LOUISIANA STATE UNIVERSITY						
2ND SEM 2011-2012 GRAD 7 PCHEM						
ORGAN STRUCT ELUCID	CHEM	4563	A	3.00	3.00	12.00
INTROD MATH CHEM	CHEM	4581	A	3.00	3.00	12.00
SEMINAR	CHEM	7800	P		1.00	
SEMINAR	CHEM	7800	P		1.00	
SEMINAR	CHEM	7800	P		1.00	
DISSERTATION RES	CHEM	9000	S		1.00	
ENGL COMPOSITION	ENGL	1005	P		3.00	
SPK ENGL INT GRD AST	ENGL	1051	P		3.00	
SEMESTER				6.00	16.00	24.00 4.000
LSU SYSTEM				14.00	23.00	56.00 4.000
CUMULATIVE				14.00	23.00	56.00 4.000

LOUISIANA STATE UNIVERSITY						
3RD SEM 2011-2012 GRAD 7 PCHEM						
DISSERTATION RES	CHEM	9000	S		6.00	
SEMESTER					6.00	
LSU SYSTEM				14.00	29.00	56.00 4.000
CUMULATIVE				14.00	29.00	56.00 4.000

PAGE 1 (CONT)

ISSUED 04/11/2016 TO:
MUTAIRU OLATINWO

Robert K. Doolos

Robert K. Doolos, University Registrar

This officially sealed and signed transcript is printed on purple SCRIP-SAFE® security paper with the school seal printed in black and the signature printed in black and white. A raised seal is not required.

LOUISIANA STATE UNIVERSITY AND A & M COLLEGE

BATON ROUGE, LOUISIANA 70803

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xxx-xx-0671

COURSE TITLE	DEPT CRSE GR	CARR	EARN	QPTS	

LOUISIANA STATE UNIVERSITY					
1ST SEM 2012-2013 GRAD 7 PCHEM					
MACROMOLEC SYS I	CHEM 4010 A	4.00	4.00	16.00	
SYMMETRY & STRUCTURE	CHEM 7770 A	3.00	3.00	12.00	
SEMINAR	CHEM 7800 P		1.00		
SEMINAR	CHEM 7800 P		1.00		
SEMINAR	CHEM 7800 P		1.00		
DISSERTATION RES	CHEM 9000 S		6.00		
SEMESTER		7.00	16.00	28.00	4.000
LSU SYSTEM		21.00	45.00	84.00	4.000
CUMULATIVE		21.00	45.00	84.00	4.000

LOUISIANA STATE UNIVERSITY
2ND SEM 2012-2013 GRAD 7 PCHEM

SEMINAR	CHEM 7800 P		1.00		
SEMINAR	CHEM 7800 P		1.00		
DISSERTATION RES	CHEM 9000 S		9.00		
	SEMESTER		11.00		
	LSU SYSTEM	21.00	56.00	84.00	4.000
	CUMULATIVE	21.00	56.00	84.00	4.000

LOUISIANA STATE UNIVERSITY
3RD SEM 2012-2013 GRAD 7 PCHEM

DISSERTATION RES	CHEM 9000 S		6.00		
	SEMESTER		6.00		
	LSU SYSTEM	21.00	62.00	84.00	4.000
	CUMULATIVE	21.00	62.00	84.00	4.000

LOUISIANA STATE UNIVERSITY
1ST SEM 2013-2014 GRAD 7 PCHEM

SEMINAR	CHEM 7800 P		1.00		
SEMINAR	CHEM 7800 P		1.00		
DISSERTATION RES	CHEM 9000 S		9.00		
	SEMESTER		11.00		
	LSU SYSTEM	21.00	73.00	84.00	4.000
	CUMULATIVE	21.00	73.00	84.00	4.000

LOUISIANA STATE UNIVERSITY
2ND SEM 2013-2014 GRAD 7 PCHEM

SEMINAR	CHEM 7800 P		1.00		
SEMINAR	CHEM 7800 P		1.00		
DISSERTATION RES	CHEM 9000 S		7.00		
	SEMESTER		9.00		
	LSU SYSTEM	21.00	82.00	84.00	4.000
	CUMULATIVE	21.00	82.00	84.00	4.000

LOUISIANA STATE UNIVERSITY
3RD SEM 2013-2014 GRAD 7 PCHEM

DISSERTATION RES	CHEM 9000 S		6.00		
	SEMESTER		6.00		
	LSU SYSTEM	21.00	88.00	84.00	4.000
	CUMULATIVE	21.00	88.00	84.00	4.000

PAGE 2 (CONT)



Robert K. Doolos

Robert K. Doolos, University Registrar

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LOUISIANA STATE UNIVERSITY AND A & M COLLEGE

BATON ROUGE, LOUISIANA 70803

OFFICIAL TRANSCRIPT

MUTAIRU BOLAJI OLATINWO

XXX-XX-0671

COURSE TITLE	DEPT	CRSE	GR	CARR	EARN	QPTS
LOUISIANA STATE UNIVERSITY						
1ST SEM 2014-2015 GRAD 7 PCHEM						
SEMINAR	CHEM	7800	P		1.00	
SEMINAR	CHEM	7800	P		1.00	
DISSERTATION RES	CHEM	9000	S		7.00	
SEMESTER					9.00	
LSU SYSTEM				21.00	97.00	84.00 4.000
CUMULATIVE				21.00	97.00	84.00 4.000

LOUISIANA STATE UNIVERSITY						
2ND SEM 2014-2015 GRAD 7 PCHEM						
SEMINAR	CHEM	7800	P		1.00	
SEMINAR	CHEM	7800	P		1.00	
DISSERTATION RES	CHEM	9000	S		7.00	
SEMESTER					9.00	
LSU SYSTEM				21.00	106.00	84.00 4.000
CUMULATIVE				21.00	106.00	84.00 4.000

LOUISIANA STATE UNIVERSITY						
3RD SEM 2014-2015 GRAD 7 PCHEM						
DISSERTATION RES	CHEM	9000	S		6.00	
SEMESTER					6.00	
LSU SYSTEM				21.00	112.00	84.00 4.000
CUMULATIVE				21.00	112.00	84.00 4.000

LOUISIANA STATE UNIVERSITY						
1ST SEM 2015-2016 GRAD 7 PCHEM						
SEMINAR	CHEM	7800	P		1.00	
SEMINAR	CHEM	7800	P		1.00	
DISSERTATION RES	CHEM	9000	S		7.00	
SEMESTER					9.00	
LSU SYSTEM				21.00	121.00	84.00 4.000
CUMULATIVE				21.00	121.00	84.00 4.000

LOUISIANA STATE UNIVERSITY						
2ND SEM 2015-2016 GRAD 7 PCHEM						
SEMINAR	CHEM	7800	IP		1.00	
SEMINAR	CHEM	7800	IP		1.00	
DISSERTATION RES	CHEM	9000	IP		7.00	
CURRENTLY ENROLLED					9.00	

10/09/2013 PASS GENERAL EXAM

*****END OF ACADEMIC RECORD*****

PAGE 3

To be valid, this POSTALBOX™ field must display a colored background.



Robert K. Doolan

Robert K. Doolan, University Registrar

This officially sealed and signed transcript is printed on purple SCRIP-SAFE® security paper with the school seal printed in black and the signature printed in black and white. A raised seal is not required.

TO VERIFY: TRANSLUCENT GLOBE LOGOS MUST BE VISIBLE WHEN HELD TOWARD A LIGHT SOURCE

TRANSCRIPT IS VALID ONLY WHEN THE WHITE SIGNATURE OF THE REGISTRAR APPEARS UNDISORTIFIED

LOUISIANA STATE UNIVERSITY and A & M COLLEGE

DEFINITION: Translucent globe icons *MUST* be visible from both sides when held toward a light source. An official transcript contains all essential academic data, such as: dates of attendance, courses taken, grades and credit/s awarded, degrees received. It may also contain information related to the student's current status at the institution. An official transcript is one that has been received directly from Louisiana State University. It must bear the university seal, date, and appropriate registrar's signature. This document cannot be released to a third party without the written consent of the student. This is in accordance with the Family Educational Rights and Privacy Act of 1974. If you have any questions about this document, please contact our office at (225) 578-1686. ALTERATION OF THIS DOCUMENT MAY BE A CRIMINAL OFFENSE!

AUTHENTICATION TESTS: The face of this transcript is printed on purple SCRIP-SAFE® paper with the name of the institution appearing in white type over the face of the entire document. When held to a light source, translucent icons of a globe must appear. The institution name and the word COPY appear on alternate rows as a latent image. When photocopied, the pre-printed white signature and seals will blur. When this paper is touched by fresh liquid bleach, an authentic document will stain. A black and white or color copy of this document is not an original and should not be accepted as an official institution document.

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SCRIP-SAFE® Security Products, Inc. Cincinnati, OH

Transcript Guide

083748-102814

CREDITS

Credits are reported in semester hours and are based on the number of times a course meets per week during the regular semester.

GRADING SYSTEM

4.0 (A=4; B=3; C=2; D=1; F=0)

YEAR CLASSIFICATION CODE

1	Freshman
2	Sophomore
3	Junior
4	Senior
5	Senior-5 year curriculum
6	Master's Program
7	Doctoral Program

GRADES

A	Satisfactory
B	Satisfactory
C	Satisfactory
D	Passing But Unsatisfactory
F	Failure
P	Passing
I	Incomplete
IP	In Progress
S	Satisfactory (Thesis and Dissertation Research Courses)
U	Unsatisfactory (Thesis and Dissertation Research Courses)
AU	Audit
*WA	Withdrawal Passing
*WB	Withdrawal Passing
*WC	Withdrawal Passing
*WF	Withdrawal Failing
W	Withdrawal
NC	No Credit

*Beginning 1983 fall semester these grades no longer assigned.

COURSE NUMBERING SYSTEM

Course Level

Undergraduate- Remedial
Undergraduate- Freshman
Undergraduate- Sophomore
Undergraduate- Junior
Undergraduate or Graduate- Senior or Graduate
Graduate- Primarily post- baccalaureate professional courses
Graduate- Exclusively for teachers at the elementary, secondary and junior college levels
Graduate- Graduate credit only
Graduate- Research courses exclusively for graduate students, primarily for students working toward the Master's Degree
Graduate- Research courses exclusively for advanced graduate students, primarily for students working toward the doctoral degree

Effective Sept. 1974

0001-0999
1000-1999
2000-2999
3000-3999
4000-4999
5000-5999
6000-6999

Prior to Sept. 1974

1--49
50-99
100-199*
100-199*
100-199*

7000-7999
8000-8999

200-299
300-399

9000-9999

400- Above

*Graduate credit for selected courses only

SUPPLEMENTARY INFORMATION

- Separate totals are maintained on students in nondegree programs. These include EXT (Extension); PASS (Program for Adult Special Students); PIP (Professional Improvement Program); PLUS (LSU 25+ Program); and, effective Fall 1987 (15/1988), NMATL, NMATR, NMATX (Graduate nonmatriculating).
- Effective with the Fall 1986 (15/1987) semester, the School of Social Work falls under the jurisdiction of the Graduate School; all credit earned in social work is included in the graduate totals.
- Transfer credit course numbers with one digit and three asterisks reflect transfer equivalency based on course level only.
- Effective with the fall 2013 (15/2014) semester, students became eligible for the Grade Exclusion Policy. The policy allows students to retake certain courses and to have the grades from the previous attempts removed from the calculation of the cumulative and LSU GPAs beginning in the semester courses were taken. Previous semesters' GPAs are not recalculated.
- Unless specified, student is entitled to honorable dismissal.

RECIPIENTS SHOULD LOOK FOR THE FOLLOWING TO VERIFY THAT THE TRANSCRIPT IS OFFICIAL

- If the student attended LSU in 1983 or thereafter, the transcript is printed on purple security paper.
- The document was mailed directly from the Office of the University Registrar in a sealed institutional envelope.
- The document has a recent date of issue.
- The format of the transcript is consistent with others received from Louisiana State University.
- The records submitted are consistent with the person's academic/employment background and with your knowledge of the candidate.
- The candidate is reluctant to have an official transcript sent.

UNIVERSITY OF IBADAN, IBADAN, NIGERIA

POSTGRADUATE SCHOOL

DEAN: Prof. A.O. Olorunnisola
Ph.D (Ibadan) NNSE R. Engr. (COREN)
Professor of Wood Products Engineering
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SUB-DEAN (Sciences):
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Senior Lecturer in Physical Chemistry
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DEPUTY REGISTRAR/SECRETARY
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SUB-DEAN (Arts & Humanities):
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Reader in Sociology
Mobile: 08023249632
Email: aderinto@yahoo.com

Ref:

Mr. Mutairu Bolaji OLATINWO,
(SI. 116595),
Department of Chemistry,
University of Ibadan.

Date **19th November, 2010**

Dear **MR. OLATINWO,**

NOTIFICATION OF HIGHER DEGREE RESULT

I have pleasure in informing you that on the recommendation of the
FACULTY OF SCIENCE Postgraduate Committee and the Board of
the Postgraduate School, Senate has approved the recommendation of the examiners that
the degree of Master in **Science (M.Sc) in Chemistry (Organic Chemistry)**
of this University be conferred on you. The effective date of the award is **21st September, 2010**

You are also eligible to proceed to **Ph.D**

On behalf of the Vice-Chancellor, I congratulate you on your success in the
Examination.

Yours sincerely

M. Abioye (Mrs.)

Examinations Officer

for: Deputy Registrar/Secretary

SECRETARY
POSTGRADUATE SCHOOL
UNIVERSITY OF IBADAN

University of Ibadan



Mutairu Bolaji Olatinwo

having fulfilled all the requirements of the University
and passed the prescribed examinations has this
day been admitted to the degree of

Bachelor of Science
in
Industrial Chemistry
with First Class Honours

Matric.No.116595

VICE-CHANCELLOR

March 23, 2007

REGISTRAR

Form 200 - Application for an NSERC Scholarship or Fellowship

Reference Number: 386145724

Applicant: Mutairu Bolaji Olatinwo

Program: Visiting Fellowships in Canadian Government Laboratories

Application Title: New generation flame retardant, alloy, renewable energy and materials studies using X-ray imaging method coupled with UL 94 test, FTIR, XANES, GCMS, ICPMS, EGA, SEM-EDS and spectrophotometry.

Paper Attachment(s)

Diploma

MSc and BSc Certificates and LSU Transcript

Reference Letters

Prof. Leslie G. Butler

Prof. D. Spivak or Prof. K. Dooley or Dr B. Edagwa