

**Africa Centre of Excellence**  
**Pan African Materials Institute**  
**(PAMI)**

**African University of Science and Technology**

**Implementation Plan**

**2014 – 2018**

**(Draft October 29, 2014)**

**ACE TEMPLATE**  
**Implementation Plan**

**ABBREVIATIONS AND ACRONYMS**

ADF:	Assets Disposal Form
ARIST:	African Renaissance Institute of Science and Technology
ASC:	African Scientific Committee
AUST:	African University of Science and Technology
BL:	Budget Letter
CL:	Center Leader
FM:	Financial Manual
FRG:	Focused Research Group
ICB:	International Collaboration Board
IRG:	International Research Group
ISAB:	International Scientific Advisory Board
MIAB:	Materials Industrial Advisory Board
NMI:	Nelson Mandela Institution
PEC:	PAMI Executive committee
VPFA:	Vice President – Finance and Administration
WISE:	Women in Science and Engineering

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## **1. BRIEF NARRATIVE SUMMARY**

Motivated by the need to explore ways of adding value to Africa's rich array of natural resources in ways that can impact the lives of African people, the Pan African Materials Institute (PAMI) was proposed to use a systems-based interdisciplinary approach to bring together a Pan African and international team of scientists, engineers, industrialists, policymakers, and development stakeholders to engage in training and research activities in solar energy, health, water purification and affordable housing/infrastructure. The institute will support the training of a minimum of 200 MSc and a minimum of 50 PhD graduates as well as at least 1200 people from industry, government and business (who will take courses at PAMI with a minimum of 40 contact hours) that can contribute to the development of the materials' potential in the Western and Central African regions.

The proposed research will also use a materials approach to develop effective solutions to African needs in: solar energy; disease detection and treatment; water purification and affordable housing/infrastructure. This will be achieved by engaging teams of mathematicians, physicists, chemists, biologists, materials scientists and engineers in interdisciplinary and trans-disciplinary research that will result in the development of:

- i. Solar cells and light emitting devices;
- ii. Biomedical devices for disease detection and treatment;
- iii. Ceramic water filters for water purification, and
- iv. Sustainable eco-materials for affordable buildings and infrastructure

The proposed activities will engage a regional West African and international team of partner institutions in materials education and research. They include seven regional partners, six local partners as well as seven international partners. AUST will be the lead institution in Africa. AUST will also host the institute secretariat that will coordinate the research and training activities. The proposed research and training activities will engage teams of experts from all of the partner institutions. They will be organized into focused research groups that will engage in: short courses for industry and academia; MSc and PhD programs (as specified in the Results Framework); research on solar cells and light emitting devices; research on biomedical systems for disease detection and treatment; research on materials for water purification, and research on eco-materials for affordable housing/infrastructure. Finally, in the case of Liberia and Gambia, a special effort will be made to train a new generation of faculty that can return to these countries to develop materials science and engineering programs that will train future Liberians and Gambians to add value to the natural resources available in their countries. The potential impact of the institute could, therefore, be very significant.

Institutional changes recommended by the international panel of experts have been largely adopted. These implementation issues include the following:-

1. Funding of regional and local partners would be by transaction-based-financing to be managed by the PAMI secretariat under the supervision of the PAMI Executive Committee (PEC), while funding to international partners would be linked to the

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agreements to be signed by the partners. These safeguards were introduced to exert control on implementation and mitigate against identified risks.

2. Increment in the minimum number of PhDs to be trained from 40 to 50; a corresponding increment in the minimum number of MScs to 200 and the industry outreach number to an average of 1200. This is according to the results framework signed-on by PAMI with the AAU.
3. Introduction of a marketing drive to give priority to improving both local and regional female participation in the programme. This priority was introduced to ameliorate a possible threat to meeting the female participation target set by the programme.

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### 2. OVERVIEW OF PLANNED OUTPUTS, ACTIVITIES AND COST FOR FIRST YEAR

**Table 1: Overview of first project year**

Code	Priority Rank	Result/Activity/Task	Budget Estimate (US\$)		
			ACE leader (Component total for ACE leader)	Partners (Component total for partners)	Total (Total of component)
<b>Action Plan1</b>	<b>(1 highest )</b>	<b>Effective project coordination and implementation</b>			
<i>(Program coordination and partners)</i>		<i>(Program coordination and partners)</i>			
	<b>1</b>	<i>Regional partner coordination</i>	0	172,500.00	172,500.00
	<b>1</b>	<i>National partners</i>	34,500.00	276,000.00	310,500.00
	<b>1</b>	<i>International partners</i>	0	207,000.00	207,000.00
<b>Action Plan2</b>	<b>(1 highest 5 lowest)</b>	<b>Plan to achieve learning excellence/increased human capacity</b>	<b>(Component total for ACE leader)</b>	<b>(Component total for partners)</b>	<b>(Total of component)</b>
<i>Short training programs</i>		<i>Biannual short courses/workshop for academia, policy makers and government agencies (2 per year at least one regional)</i>	100,000.00	100,000.00	200,000.00
		<b>Sub-total</b>			200,000.00
<b>TOTAL BUDGET</b>					200,000.00
<b>Action Plan3</b>	<b>(1 highest 5 lowest)</b>	<b>Increased publications in peer-reviewed journal papers and proceedings/increased industry research collaborations/improved skills</b>	<b>(Component total for ACE leader)</b>	<b>(Component total for partners)</b>	<b>(Total of component)</b>
<i>International Travel Fellowship</i>		<i>10 Student Fellowship per year (50% regional spread)</i>	50,000.00	50,000.00	100,000.00
		<i>10 Faculty Fellowship per year (50% regional spread)</i>	50,000.00	50,000.00	100,000.00
		<b>Sub-total</b>			200,000.00
<b>TOTAL BUDGET</b>					200,000.00
<b>Action Plan4</b>	<b>(1 highest 5 lowest)</b>	<b>Clear governance structure with well-defined policies and code of conduct.</b>	<b>(Component total for ACE leader)</b>	<b>(Component total for partners)</b>	<b>(Total of component)</b>
<i>Secretariat</i>		<i>Secretariat Expenses</i>			
		i. Legal & accounting costs	37,500.00	0	37,500.00
		ii. Executive Secretary	25,000.00	0	25,000.00
		iii. Administrative staff-industry & Educational outreach	12,500.00	0	12,500.00
		iv. Administrative staff- Administration	12,500.00	0	12,500.00
		v. Materials and supplies	25,500.00	0	25,500.00
		vi. Courier services	12,500.00	0	12,500.00
		vii. Media	25,000.00	0	25,000.00
		viii. Travel – local transportation	25,000.00	0	25,000.00
		<b>Sub-total</b>	175,000.00	0	175,000.00
<b>TOTAL BUDGET</b>					175,000.00
<b>Action Plan5</b>	<b>(1 highest</b>	<b>Improved research excellence and cooperation in research and learning</b>			



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Code	Priority Rank	Result/Activity/Task	Budget Estimate (US\$)		
			ACE leader	Partners	Total
	5 lowest)				
Outreach to Industry		Outreach to Industry (50% regional spread)	50,000	50,000	100,000
TOTAL BUDGET					100,000.00
Action Plan6	(1 highest 5 lowest)	Equity dimensions resulting in increased number of women participants and establishment of wider opportunities for female participation in PAMI	(Component total for ACE leader)	(Component total for partners)	(Total of component)
Outreach to Schools and girls		Outreach to Schools and Girls	25,000	25,000	50,000
TOTAL BUDGET					50,000.00

Action Plan7	(1 highest 5 lowest)	International cooperation in training and research/co-supervision of PhDs, No of joint publications, no of courses taught by regional /international partners, improved research outputs	(Component total for ACE leader)	(Component total for partners)	(Total of component)
Focused Research Groups					
		i. Research budget for 4-focused research groups/year	200,000.00	0	200,000.00
		ii. Travel to local conferences	50,000.00	0	50,000.00
		iii. Travel to international conferences	100,000.00	0	100,000.00
		iv. Publications	15,000.00	0	15,000.00
		v. Equipment use fees	15,000.00	0	15,000.00
		vi. Regional/National travel for research	20,000.00	0	20,000.00
TOTAL BUDGET					400,000.00

Action Plan8	(1 highest 5 lowest)	Research excellence and establishment of minimal support for active researchers/	(Component total for ACE leader)	(Component total for partners)	(Total of component)
Seed Grant		Seed Grants	50,000	50,000	100,000

TOTAL BUDGET					100,000.00
Action Plan9	(1 highest 5 lowest)	Skills and knowledge sharing/impact assessment/strategic planning	(Component total for ACE leader)	(Component total for partners)	(Total of component)
National Coordination					
		• National coordination meetings	25,000.00	0	25,000.00
		• National coordination workshops	25,000.00	0	25,000.00
		Sub-total National Coordination	50,000.00	0	50,000.00
TOTAL BUDGET					50,000.00
Action Plan10	(1 highest 5 lowest)	Skills and knowledge sharing/impact/penetration of outcomes	(Component total for ACE leader)	(Component total for partners)	(Total of component)
Regional Coordination		Regional Coordination			
		Regional coordination meetings	0	25,000.00	25,000.00
		Regional coordination workshops	0	25,000.00	25,000.00

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		<i>Sub-total Regional Coordination</i>	0	50,000.00	50,000.00
<b>TOTAL BUDGET</b>					50,000.00

Action Plan11	(1 highest 5 lowest)	Critical infrastructure provision for research and learning excellence.	(Component total for ACE leader)	(Component total for partners)	(Total of component)
Equipment and IT Infrastructure/ Broadband		Equipment and IT Infrastructure/Broadband			
		i. Laptops	25,000.00	0	25,000.00
		ii. Video conferencing equipment 5 per institution	20,000.00	80,000.00	100,000.00
		iii. Broadband access	84,000.00	0	84,000.00
		iv. Solar cell fabrication lab upgrade	100,000.00	0	100,000.00
		v. Biomaterials lab upgrade	75,000.00	0	75,000.00
		vi. Multifunctional lab upgrade	75,000.00	0	75,000.00
		<i>Sup-total</i>	379,000.00	80,000.00	459,000.00
<b>TOTAL BUDGET</b>					459,000.00

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**Table 2: Overview distribution among partners** (*this table is a breakdown of the partner budget in Table 1, so the last column here in Table 2 matches the second to the last column in Table 1*)

Code	Result/Programme coordination and partners								
		(University of Ghana, Legon)	Kwame Nkrumah University of Science and Technology (KNUST)	University of Gambia, Gambia	University of Buea, Cameroon	Cheik Anta Diop University, Senegal			Total Partner Budget
Action Plan1	Effective programme coordination and implementation	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)			(Partners total of component)
1a	Regional Partners								
		34,500.00	34,500.00	34,500.00	34,500.00	34,500.00			172,500.00

Code	Result/Programme coordination and partners, establishment of IRCs, FRGs, seed grant admin etc.								
Action Plan1 1b	National	Kwara State University (KWASU), Malete.	Nnamdi Azikiwe University, Awka	University of Lagos, Akoka, Lagos.	Ahmadu Bello University, Zaria.	Obafemi Awolowo University, Ile-Ife	National Agency for Science and Engineering Infrastructure (NASENI)	Sheda Science and Technology Complex (SHESTCO)	Total Partner Budget
	Effective programme coordination and implementation	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Partners total of component)
	National Partners	34,500.00	34,500.00	34,500.00	34,500.00	34,500.00	34,500.00	34,500.00	241,500.00
Code	Result/Programme coordination and partners								
		Princeton University, Princeton, USA.	Blaise Pascal University, France	Arizona State University, USA	Rutgers University, USA	Worcester Polytechnic Institute.	The Ohio State University (OSU)		Total Partner Budget

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Code	Result/Program me coordination and partners								
		(University of Ghana, Legon)	Kwame Nkrumah University of Science and Technology (KNUST)	University of Gambia, Gambia	University of Buea, Cameroon	Cheik Anta Diop University , Senegal			Total Partner Budget
Action Plan1	Effective programme coordination and implementation	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)			(Partners total of component)
1a	Regional Partners								

Action Plan1	Effective programme coordination and implementation	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)		(Partners total of component)
1c	International Partners							
		34,500.00	34,500.00	34,500.00	34,500.00	34,500.00	34,500.00	207,000.00

Code	Result/Short training programs								
Action Plan2	Short courses /workshops for academia, policy makers and government agencies (2/year). One in Nigeria and one in one of the participating universities within the region	University of Ghana, Legon. (2014).							Total Partner Budget
	Learning excellence/incr eased human capacity	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Partner total of short courses 2014)
		100,000.00	-	-	-	-	-	-	100,000.00

Code	Result/Interdisciplinary MSc & PhD programs.								
Action Plan3	Competitive. Shared in a ratio of 1:1 between AUST and partner	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	Total Partner Budget

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Code	Result/Program me coordination and partners								
		(University of Ghana, Legon)	Kwame Nkrumah University of Science and Technology (KNUST)	University of Gambia, Gambia	University of Buea, Cameroon	Cheik Anta Diop University, Senegal			Total Partner Budget
Action Plan1	Effective programme coordination and implementation	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)			(Partners total of component)
1a	Regional Partners								

	institutions			)					
	10 faculty fellowships & 10 student fellowships/year	-	-	-	-	-	-	-	100,000.00

Code	Result/International Travel Fellowships.								
Action Plan4	Competitive. Shared in a ratio of 1:1 between AUST and partner institutions	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	Total Partner Budget
	10 faculty fellowships & 10 student fellowships/year	-	-	-	-	-	-	-	100,000.00
Code	Result/Secretariat								
Action Plan5	Establishment of PAMI secretariat, engagement of secretariat staff, Coordination of IRC, FRGs etc, PAMI HQ	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	Total Partner Budget
		-	-	-	-	-	-	-	0
Code	Result/Outreach to industry								
Action Plan6	Subject to availability and need, this funding is not tied to specific partner, but is provided for regional industry outreach. PEC	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	Total Partner Budget

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	<i>input would decide which industry in what country would be the beneficiary</i>								
		-	-	-	-	-	-	-	50,000.00
<b>Code</b>	<b>Result/Outreach to schools and girls</b>								
<b>Action Plan7</b>	<i>Competitive. Shared in a ratio of 1:1 between AUST and partner institutions</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<b>Total Partner Budget</b>
	A budget line is provided on a 1:1 ratio between AUST and the Regional partners to increase women participation by engaging in outreach to girls across the region.	-	-	-	-	-	-	-	25,000.00
<b>Code</b>	<b>Result/Focused Research groups</b>								
<b>Action Plan8</b>	<i>Administered Centrally: This forms part of the milestones to be achieved by PAMI – Establishment of Focused Research Groups as a regional center for all PAMI partners.</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<b>Total Partner Budget</b>
	<i>4 FRGs would be funded/annum based on proposals reviewed by the PEC and its appropriate subcommittees</i>	-	-	-	-	-	-	-	-
<b>Action Plan9</b>	<i>Seed Grants: Administered centrally, and merit based, allowing both National and Regional access to funding. Managed by PEC</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<b>Total Partner Budget</b>
	<i>Seed grants to young investigators, mid-career investigators and</i>	-	-	-	-	-	-	-	-

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	<i>PAMI graduating PhDs</i>								
<b>Action Plan10</b>	<i>National Coordination of PAMI</i>	<i>(Compo nent total for partner)</i>	<i>(Compo nent total for partner)</i>	<i>(Compo nent total for partner)</i>	<i>(Compon ent total for partner)</i>	<i>(Compon ent total for partner)</i>	<i>(Compo nent total for partner)</i>	<i>(Componen t total for partner)</i>	<b>Total Partner Budget</b>
	<i>Annual National coordination meetings and workshops to entrench best practices and improve implementation strategies</i>	-	-	-	-	-	-	-	0
<b>Action Plan11</b>	<i>Annual National coordination meetings and workshops to entrench best practices and improve implementation strategies</i>	<i>(Compo nent total for partner)</i>	<i>(Compo nent total for partner)</i>	<i>(Compo nent total for partner)</i>	<i>(Compon ent total for partner)</i>	<i>(Compon ent total for partner)</i>	<i>(Compo nent total for partner)</i>	<i>(Componen t total for partner)</i>	<b>Total Partner Budget</b>
	<i>Staggered among partner institutions/annu m, this is a programme review meeting as well as a workshop hosted by partners on a rotatory basis as determined by PAMI</i>	-	-	-	-	-	-	-	50,000.00
<b>Action Plan12</b>	<i>Critical Infrastructure provision for research and learning excellence</i>	<i>Universi ty of Ghana, Legon</i>	<i>Kwame Nkruma h Universi ty of Science and Technol ogy (KNUST )</i>	<i>Universi ty of Gambia, Gambia</i>	<i>University of Buea, Cameroo n</i>	<i>Cheik Anta Diop University , Senegal</i>	-	-	<b>Total Partner Budget</b>
	<i>Transaction- based financing approach would be employed to ensure deployment of Video conferencing at the above identified partner institutions. Other funding available under this under this budget is however available as a PAMI resource to be used by all partners. Where video</i>	-	20,000.00	20,000.00	20,000.00	20,000.00	-	-	80,000.00

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	<i>conferencing facilities exist, the funding would be available for e learning tools especially library access and books/journals</i>								
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\*Add rows and adjust columns as applicable.



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### 3. TIMING OF PLANNED ACTIVITIES FOR ENTIRE PROJECT PERIOD (Gantt chart)

Table 3: Work plan for the project SEE APPENDIX for revised Gantt charts can be made in excel, hand drawn or by using freeware (e.g. <http://www.ganttproject.biz/>) as applicable

#### Tasks

Name	Begin date	End date
Program Coordination	2/1/14	1/28/15
<i>Appoint PAMI Executive Committee and sub-committees</i>		
Appoint PAMI execs	2/1/14	5/3/14
Organize Planning Meetings of Committees	5/3/14	8/2/14
PAMI Executive and subcommittee meetings	8/2/14	11/1/14
PAMI Executive and subcommittee meeting	11/1/14	1/28/15
Short Training Program	5/6/14	9/27/15
<i>Program Design and Outreach</i>		
Program Design and Outreach	5/6/14	12/15/14
Pan African School of Materials	12/15/14	3/16/15
School of Materials (PASMAT)	3/17/15	6/16/15
Pan African School of Materials	6/17/15	9/27/15
International Travel Fellowships	12/15/14	12/14/15
<i>Call for applications for travel fellowships</i>		
Call for applications for travel fellowships	12/15/14	3/16/15
<i>Call for applications for travel fellowships</i>		
Selection and award of travel fellowships	3/17/15	6/16/15
<i>Selection and award of travel fellowships</i>		
International travel for research and learning	6/17/15	9/16/15
<i>International travel to engage in research and learning</i>		
Completion of travel and reporting	9/17/15	12/14/15
<i>Completion of travel and reporting</i>		
Start Interdisciplinary MSc&PhD Certificate Programs	2/1/14	12/14/15
<i>Start Interdisciplinary MSc&amp;PhD Certificate Programs</i>		
Curriculum design and selection of visiting faculty and PhD students	2/1/14	5/6/14
<i>Curriculum design and selection of visiting faculty and PhD students</i>		
Lab Equipment Procurement	12/15/14	3/16/15
<i>Lab Equipment Procurement</i>		

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### Tasks

Name	Begin date	End date
Initiation of Master's program and certificate programs <i>Initiation of Master's program and certificate programs</i>	2/1/14	12/14/15
Lab installation and continuation of academic programs <i>Lab installation and continuation of academic programs</i>	3/17/15	6/13/15
Development of Secretariat for Program Implementations <i>Recruitment of PAMI secretariat staff and initiation of secretariat</i>	2/1/14	1/31/15
Recruitment of PAMI secretariat staff and initiation of secretariat <i>Recruitment of PAMI secretariat staff and initiation of secretariat</i>	2/1/14	5/3/14
Approvals of academic programs and student recruitment <i>Approvals of academic programs and student recruitment</i>	2/1/14	1/31/15
Coordination of PAMI activities and student enrollment/assessment <i>Coordination of PAMI activities and student enrollment/assessment</i>	2/1/14	12/15/14
Program execution and planning approvals for next year <i>Program execution and planning approvals for next year</i>	12/15/14	1/31/15
Outreach to Industry <i>Design of industry outreach and Materials Industry Advisory board</i>	2/1/14	12/31/14
Design of industry outreach and materials industry advisory board <i>Design of industry outreach and materials industry advisory board</i>	2/1/14	5/3/14
Outreach to industry and members of industry advisory board <i>Outreach to industry and members of industry advisory board</i>	6/1/14	8/31/14
Organization of industry day, industry advisory board meeting and industrial training program <i>Organization of industry day, industry advisory board meeting and industrial training program</i>	9/1/14	12/1/14
Industry excursions and student placement in industry <i>Industry excursions and student placement in industry</i>	2/1/14	12/31/14
Outreach to Schools and Girls <i>Outreach to Schools and Girls</i>	2/1/14	12/14/15
Design of middle and high school outreach + programs for Women in Science and Engineering (WISE) <i>Design of middle and high school outreach + programs for Women in Science and Engineering (WISE)</i>	2/1/14	7/30/15

### Tasks

Name	Begin date	End date
Develop partnerships with local, national, and regional schools <i>Develop partnerships with local, national, and regional schools</i>	4/12/14	10/23/15
Organization of training programs for middle/high school students and teachers <i>Organization of training programs for middle/high school students and teachers</i>	2/1/15	5/3/15
Organization of training programs for middle/high school girls and their teachers <i>Organization of training programs for middle/high school girls and their teachers</i>	9/16/15	12/14/15
MOUs and legal framework <i>MOUs and legal framework</i>	2/1/14	4/30/15
Establish PAMI legal team <i>Establish PAMI legal team</i>	2/1/14	7/31/14
Negotiate MOUs and contracts with partners <i>Negotiate MOUs and contracts with partners</i>	2/1/14	10/31/14
Initiate contracts with partners <i>Initiate contracts with partners</i>	2/1/14	1/31/15
Monitor contracts with partners <i>Monitor contracts with partners</i>	2/1/14	4/30/15
Focused research group <i>Recruitment of PAMI secretariat staff and initiation of secretariat</i>	2/1/14	4/30/15
Research plans for focused research groups <i>Research plans for focused research groups</i>	2/1/14	7/31/14
Approval and funding for research plans <i>Approval and funding for research plans</i>	2/1/14	8/31/14
Initiation of research programs <i>Initiation of research programs</i>	2/1/14	1/31/15
Annual presentation of research plans and results <i>Annual presentation of research plans and results</i>	12/1/14	4/30/15
Seed grants <i>Seed grants</i>	1/1/15	12/31/15

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### Tasks

Name	Begin date	End date
Call for proposals and submission of seed grant proposals <i>Call for proposals and submission of seed grant proposals</i>	1/1/15	4/2/15
Review and approval of seed grant proposals <i>Review and approval of seed grant proposals</i>	4/3/15	12/31/15
Initiation of seed grants <i>Initiation of seed grants</i>	5/1/15	12/31/15
Annual presentation of research plans and results <i>Annual presentation of research plans and results</i>	12/1/15	12/31/15
National coordinatio <i>National coordinatio</i>	12/15/14	12/14/15
Organize meeting of Nigerian partners to plan programs for first year <i>Organize meeting of Nigerian partners to plan programs for first year</i>	12/15/14	3/16/15
Review and approval of plans by national partners <i>Review and approval of plans by national partners</i>	3/17/15	6/16/15
Initiation of coordinated programs by national partners <i>Initiation of research programs</i>	6/17/15	9/16/15
Annual presentation by partners <i>Annual presentation by partners</i>	9/17/15	12/14/15
Regional coordinatio <i>Regional coordinatio</i>	12/15/14	4/1/16
Organize meetings of regional partners <i>Organize meetings of regional partners</i>	12/15/14	3/16/15
Review and approval of plans by regional partners <i>Review and approval of plans by regional partners</i>	3/17/15	6/16/15
Initiation of coordinated regional programs <i>Initiation of coordinated regional programs</i>	1/1/16	4/1/16
Annual presentation of regional plans and results <i>Annual presentation of regional plans and results</i>	9/17/15	12/14/15
Accounts and Budgets <i>Accounts and Budgets</i>	2/1/14	4/30/15

### Tasks

Name	Begin date	End date
Develop budget projections and obtain internal approvals for program execution <i>Develop budget projections and obtain internal approvals for program execution</i>	2/1/14	1/31/15
Train partners in World Bank accounting and project management <i>Train partners in World Bank accounting and project management</i>	12/15/14	3/16/15
Appointment of auditors for review of accounts <i>Appointment of auditors for review of accounts</i>	2/1/14	1/31/15
Auditing of accounts and budget projections/approvals <i>Auditing of accounts and budget projections/approvals</i>	2/1/15	4/30/15
Monitoring and evaluation <i>Monitoring and evaluation</i>	2/1/14	6/30/15
Develop framework for monitoring and evaluation <i>Develop framework for monitoring and evaluation</i>	2/1/14	7/31/14
Train partners in monitoring and evaluation <i>Approval and funding for research plans</i>	12/15/14	3/16/15
Monitor and evaluate programs <i>Monitor and evaluate programs</i>	12/15/14	3/16/15
Report on program outcomes <i>Report on program outcomes</i>	2/1/15	6/30/15
Reporting <i>Reporting</i>	1/1/15	2/14/16
Quarterly Report <i>Research plans for focused research groups</i>	5/15/15	8/14/15
Quarterly Report <i>Quarterly Report</i>	8/15/15	11/14/15
Quarterly Report <i>Quarterly Report</i>	11/15/15	2/14/16
Annual Report <i>Annual Report</i>	1/1/15	1/31/15

#### 4. IMPLEMENTATION ARRANGEMENTS

##### A. Guidning rules and regulations

A PAMI orientation program will be organized each year to introduce all new PAMI faculty, staff, students and post-docs to the PAMI code of conduct. The PAMI code of conduct will essentially provide an **honor code** that requires every PAMI team member to ensure that their actions are free of political or special interest. The team members will also be exposed to modules on intellectual freedom and ethics in learning and research environments. Those that complete these modules will be required to sign the PAMI Honor Code. Similarly, PAMI lab safety modules and teaching modules will be organized at the Annual Meetings. The modules will present best practices in lab activities and teaching methods that could improve the overall quality of PAMI'S training activities. A PAMI governance document will be produced and circulated to all the team members. An Ombudsman will also be appointed to handle complaints through a PAMI Complaints sub-committee that will report to the Director of PAMI. This Ombudsman would work cooperatively with the **AUST anticorruption committee** to establish processes and implement safeguards against fraud while ensuring transparency and efficiency.

There exists an Audit committee of the Governing Board of AUST, headed by Professor Karl Voltaire. This audit committee will oversee the timely and efficient responses to audit enquiries and queries and report its findings to the Board in accordance with its mandate. Such information concerning PAMI audits shall be made available on the PAMI website as required by the World Bank.

The Internal Audit Department of AUST would conduct audit functions and respond to external audit issues under the supervision of the AUST Board appointed Audit Committee.





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subcommittees include: “the student selection subcommittee”, Student Travel Fellowship selection subcommittee; Scholarship committee; Faculty Fellowship committee etc.

The day-to-day implementations of the programs will be managed by the PAMI secretariat under the supervision of the PAMI Deputy Center Leader/PI. The activities will include: program planning and coordination, scheduling and communications, marketing, monitoring and evaluation, budget forecasting and accounting, audit, logistics and protocols, international collaborations, industrial collaborations, study visits/internships and faculty/student exchange programs, procurement, education and outreach programs. In each of these areas, staff at the PAMI secretariat will work with PAMI faculty, post-docs and students and industrial collaborators to implement the approved activities. They will also use a range of multimedia (websites, Twitter, Facebook, and G+ accounts) and a PAMI Newsletter to advertise the activities and successes of PAMI. Finally, the secretariat will develop and administer questionnaires that will be used to measure and enhance the effectiveness of the proposed PAMI activities in teaching, research and outreach.

#### C. Incentive structures

The incentive system planned for PAMI is a non-monetary financial support to active and productive faculty, researchers and students who contribute significantly to the achievement of the milestones set for the project. Such qualifying activities would include publications in high-impact-factor peer-reviewed journal and proceedings, patents and inventions; publication and editing of books, reviews etc. The financial support would come by way of awards to support attendance of scientific conferences, symposia and seminars, support for travel fellowships to participating laboratories and additional research support.

For non-scientific staff, the same incentive system is in place to motivate and support distinguishing activities that would promote the financial and administrative excellence desired of PAMI. These distinguishing activities would include application of contemporary fiduciary management techniques that fosters rapid and efficient disbursement of funds, prompt responses to AAU, NUC, World Bank, Partners, Industry and affiliates etc. Support for training programme attendance for such highly productive secretariat and fiduciary management staff would be implemented as part of the staff incentive scheme. Partners and stakeholders including private sector participants would also benefit from such incentive schemes to encourage their commitment to the success of PAMI.

The incentive system above will be communicated frequently in order to manage the expectations of the PAMI associates, staff, researchers, faculty and students along with the various partners.

#### D. Roles and responsibilities

The activities of PAMI will be controlled by the PAMI Executive Committee (PEC), which will be coordinated by the Director of PAMI. The PEC will include representatives from each of AUST’s five (5) core departments as well as representatives from regional and national partners. The PAMI secretariat will have an **Executive Secretary** whose role shall include:

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program planning and coordination; scheduling and communications; marketing; monitoring and evaluation; budget forecasting and accounting; logistics and protocols; international collaborations; industrial collaborations; study visits/internships and faculty/student exchange programs, procurement, education and outreach programs. The executive secretary shall deploy the secretariat staff to maintain and manage a newsletter detailing the activities of PAMI, develop and administer questionnaires that will be used to measure and enhance the effectiveness of the proposed PAMI activities in teaching, research and outreach. The Executive secretary shall also ensure the maintenance of a web portal to share information on the PAMI programme.

**Two PAMI secretariat staff** shall be hired to complement and implement projects initiated by the PEC as directed by the Executive secretary. Their role shall be complementary to that of the executive secretary. They would be responsible for the day-to-day administration of the secretariat. They shall be responsible for effective communications, logistics and protocols, recording of minutes of meetings and scheduling, administration of questionnaires, prompting the various committee heads to launch their programs according to schedules etc as well as other duties that may be assigned to them from time to time by the executive secretary or as directed by the PEC and managers of PAMI.

Justification for hiring these three individuals is related to the complex nature of the interactions expected to yield success for PAMI. The roles to be played by the PAMI secretariat cannot be played by current university staff due to the fact that PAMI involves 21 institutions and a large array of potential industrial partners. It is envisaged that these organizations would need to be nudged and constantly interacted with in order to create a firm and effective communication system between and among partners. Such communication would need full time attention without competing assignments that may gain priority over PAMI activities. Furthermore, compliance levels among teaching and research staff towards filling of questionnaires, forms and keeping records of meetings is rather low. A secretariat that is appropriately manned is suitable for covering such lapses.

Since a new tool would be used to evaluate project performance (DLI), a lot of learning is required. This tool has not been used by AUST in its project evaluation processes. This poses the risk of its abrogation or the starvation of the secretariat administratively and financially to the extent that it may be forced to comply with methods that may be contrary to those which the project is mandated to achieve to meet its DLIs. Thus, the need for dedicated staff that are not under any primary authority to jumpstart the processes and document them in a manner that would make them available for institutional memory and adoption.

The PAMI calendar is based on projects that would elicit results. The achievement of these results is monitored by indicators of performance. The PAMI secretariat would help focus on results exclusively by monitoring progress on the achievement of the indicators agreed. This job requires dedicated attention and a strong liaison among partners who have to learn a new PAMI organizational culture with efficiencies designed to be improvements on existing structures within most partner institutions. Employing project financed staff would mitigate against the institutional factors that may limit project implementation success.

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**E. Environment safeguards**

Mr. E. Osoba (PAMI M&E Officer): eosoba@aust.edu.ng

Mrs. Odette Anye (PAMI Administrative officer) : nfayen4@gmail.com

**5. PERFORMANCE MONITORING**

Disbursement Linked Indicator	Action to be Completed	Amount (USD) of the Financing Allocated Per DLI	Amount (USD) Allocated per DLR for the Disbursement Calculation (amount calculated)
<b>DLI #1: Regional specialization endorsed and institutional readiness</b>	<b>DLR 1.1</b> * Creation of PAMI account * Signing of partnership contracts * Approval of Financial management and Procurement plans	800,000.00	800,000.00
Excellence in educational and research capacity and development impact	<b>DLR #2.1</b> New short-term students in ACE courses (600 = 4 small workshops +600 = 1 workshop yearly) Non-nationals=100 Females +380 males= 480 Nationals = 140 Females + 580 males = 720	400,000.00	400,000.00 (762,000)
	<b>DLR #2.2</b> New Master students: (170) Non-nationals= 13 Females + 55 males Nationals = 18 Females + 84 males	400,000.00	400,000.00 (498,000)
	<b>DLR #2.3</b> New PhD students: (50 students) Non-nationals= 5 Females + 15 males Nationals = 8 Females + 22 males	400,000.00	400,000.00 (745,000)
	<b>DLR#2.4:</b> N# of outreach 'periods' for faculty, master, and PhD students Within Nigeria: 115 Outside Nigeria but within the region:115	800,000.00	800,000.00 (690,000)
	<b>DLR#2.5:</b> International evaluation and accreditation of quality of education programs: <ul style="list-style-type: none"> <li>⤴ International Accreditation 600,000.00</li> <li>⤴ National or regional accreditation 100,000.00</li> <li>⤴ Gap assessment certified or undertaken by an international quality assurance agency 100,000.00</li> <li>⤴ Self-evaluation 100,000.00</li> <li>⤴ Program description meeting international standard 100,000.00</li> </ul>		



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Disbursement Linked Indicator	Action to be Completed	Amount (USD) of the Financing Allocated Per DLI	Amount (USD) Allocated per DLR for the Disbursement Calculation (amount calculated)
	<p><b>DLR#2.6: Published articles in internationally recognized and peer reviewed journals (40 total)</b>  <b>Articles: 24</b>  <b>Articles with regional collaborator: 16</b></p> <p><b>DLR#2.7: Externally Generated Revenue</b></p> <p><b>DLR#2.8: Meeting milestones for improved learning and research environment specified in the Performance and Funding contracts (4 milestones)</b></p>	<p>800,000.00</p> <p>800,000.00</p> <p>1,200,000.00</p> <p>1,600,000.00</p>	<p>800,000.00</p> <p>800,000.00 (840,000)</p> <p>1,200,000.00 (2,000,000)</p> <p>1,600,000.00</p>
<b>DLI#3: Strengthened Timely, transparent, and institutionally reviewed Financial Management</b>	<p><b>DLR#3.1 Timely withdrawal application supported by financial reporting for the ACE account for the period: 25,000 per year</b></p> <p><b>DLR#3.2: Functioning Audit Committee under the university council: 25,000 per year</b></p> <p><b>DLR#3.3 Functioning internal audit unit for the university: 25,000 per year</b></p> <p><b>DLR#3.4 Web Transparency on Financial management (web-access to audit reports, interim financial reports, budgets, and annual work plan): 25,000 per year</b></p>	400,000.00	400,000.00
<b>DLI#4: Timely and audited Procurement</b>	<p><b>DLR#4.1 Timely procurement audit</b>  <b>Each year: 50,000</b></p> <p><b>DLR#4.2: Timely and Satisfactory Procurement Progress</b>  <b>Each year: 50,000</b></p>	400,000.00	400,000.00

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**6. ACTIONS PLANNED TO MEET THE DLIS IN A TIMELY FASHION.**

**A. Plan to enrol new students PhD**

There is currently a pool of 35 PhD students who have passed their qualifying examinations and are about to proceed to candidacy. For this pool, research fellowships and travel fellowships will be advertised and positions offered to successful applicants. To be successful, a Non-Materials Science and Engineering major would need to conduct materials related research and contribute to PAMI DLIs. This approach would engage the first generation of PAMI scholars who would make the project meet its PhD students target as well as its research publications target. The student fellowship awards committee would oversee this process. The second stream of roughly 25 PhD applicants who have successfully undergone PhD Interview and offered admission without scholarship support, would be considered for PAMI PhD scholarships which would among others things, provide student tuition support. Specifically, PAMI will interact with the AUST departments as follows:

**B. Plan to engage the Petroleum Engineering Department**

Among the current PhD students who are about to proceed to full candidacy, PAMI fellowship awards will be offered to applicants who submit a synopsis of a research work that is suitable for support by PAMI. These could include research work in areas such as Corrosion of Pipelines, Refinery Materials, Enhanced Oil Recovery, Waxes, Biofuels, materials for borehole stability and oil field chemicals. Others are computational modelling, Non-Destructive testing, Reservoir Engineering and modelling of by-pass oil and gas etc. The plan would integrate these students into computational modelling and teaching of other students (as Teaching Assistants (TAs)) using platforms such as the High Performance Computing (HPC) facility. MSc candidates would also be qualified to apply for research fellowships and travel fellowships.

Travel fellowship awards may be made to PhD and MSc students to visit PAMI partner laboratories working on:-

Corrosion – Ohio State University

Pipeline Integrity – Princeton University (modelling of fluids etc); Oklahoma State University and Pennsylvania State University.

**C. Plan to Engage the Physics Department**

Two distinct groups of eligible candidates exist in Physics Department. They include students engaged in modelling and simulations applicable to all the 3 thrust areas of Materials Science and Engineering and the second group is students engaged in Energy related research such as Solar Energy and Organic Light Emitting Devices and related activities. PAMI research fellowships would support these research activities for MSc and Doctoral candidates as well as for travel to advanced Laboratories for knowledge acquisition as well as to regional

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and local partner laboratories for knowledge diffusion. The awards in all cases shall be competitive and sanctioned by the appropriate PAMI PEC subcommittee.

Computational Physics travel fellowships may be to: ICTP or the University of Delaware

Energy Research fellowships may be to: Princeton University, Ohio State University etc

#### **D. Plan to Engage Mathematics Doctoral and MSc students.**

Travel support and research fellowships would be provided by PAMI to Doctoral candidates and MSc students who engage in research to provide analytical solutions to Materials related problems and help to train people in Mathematical methods applied to Materials Problems. Students engaged in Materials related mathematics can be supported to go to Princeton University or ICTP.

#### **E. Plan to Engage Computer Science Doctoral candidates and MSc students.**

We will include candidates who help to develop e-learning tools for PAMI and engage in computational methods that would provide solutions to research activities of PAMI such as the development of BioMEMS devices, Solar Energy and OLED applications. This would include students involved in software engineering and computational methods that are related to Materials Science and Engineering training and research. Candidates engaged in Biomedical Imaging, computer-aided design and manufacturing research are qualified for support from PAMI. The candidates are expected to apply for the fellowship awards by writing as in the case with all the AUST departments, a short synopsis of their research problem, detailing how it would meet DLIs related to publications, improved teaching and research for PAMI. Travel fellowship support, Research fellowship support as well as content development for PAMI outreach activities would be funded.

#### **F. Plan to Engage Materials Science And Engineering Doctoral and MSc Students.**

There are three Focused Research Groups (FRGs) to be supported in PAMI. These three FRGs are the main thrusts of PAMI Educational and Research Excellence activities. **The FRG on Biomaterials** is engaged in Nanomedicine for localized treatment and imaging of cancer and arteriosclerosis, BioMEMS device fabrication for localized drug delivery using implantable and degradable and non-degradable device structures, integration of BioMEMS devices with battery and communications platform technologies for improved performance, Hyperthermia and integration of inductive heating methods to BioMEMS matrices and studies of synergy, Biodegradation of Petroleum and its by-products for environmental health. This would include activities related to bioremediation as well as Microbe Enhanced Oil Recovery (MEOR), Bio-corrosion of oil and gas installations, Biodegradation of plastics and the generation of biodegradable plastic alternatives;

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Biomedical imaging and computational techniques in pathology and forensic sciences, computer learning, Microfluidic modelling of adhesion between cells and Extracellular Matrix,

#### **G. The Focused Research Group on Materials for Energy:**

is engaged in development of Organic Solar Cell and Organic Light Emitting Devices on flexible stretchable substrates, integration of energy storage devices and batteries with light trapping systems to new generation roofing materials and novel energy generation systems. Both experimental and computational modelling methods will be used.

#### **H. The Focused Research Group on Multifunctional Materials:**

is engaged in development materials for sustainable buildings and oil and gas structures; Corrosion of Pipelines, Refinery materials, Waxes, Biofuels, materials for borehole stability and oil field chemicals. Others research areas are computational modelling, Non-Destructive testing, Reservoir Engineering and modelling of by-pass oil and gas; Research on wear resistance on metals and ceramic structures. Safe mining practices and efficient processing of mineral resources including urban mining technologies would be developed and knowledge diffusion into community knowledge structures would be pursued.

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## 7. DETAILED BUDGET

**Table 5:** Budget, 2014 – 2018 with split between partners

Expenditure Category	Estimated Costs in (US\$)						
	YR 1 2014	YR 2 2015	YR3 2016	YR 4 2017	YR5 2018	Total	%of total
<b>A: Budget by Activity Plan</b>							
Action Plan 1: Program coordination and partners	690,000.00	690,000.00	690,000.00			2,070,000.00	25.89
Action Plan 2: Short training programmes	200,000.00	200,000.00	200,000.00			600,000.00	7.50
Action Plan 3: Interdisciplinary MSc/PhD programs	375,000.00	375,000.00	375,000.00			1,125,000.00	14.07
Action Plan 4: International travel fellowships	200,000.00	200,000.00	200,000.00			600,000.00	7.50
Action Plan 5: Secretariat	175,000.00	175,000.00	175,000.00			525,000.00	6.57
Action Plan 6: Outreach to Industry	100,000.00	100,000.00	100,000.00			300,000.00	3.75
Action Plan 7: Outreach to schools and Girls	50,000.00	50,000.00	50,000.00			150,000.00	1.88
Action Plan 8: Focused research groups	400,000.00	400,000.00	400,000.00			1,200,000.00	15.01
Action Plan 9: Seed grants	100,000.00	100,000.00	100,000.00			300,000.00	3.75
Action Plan 10: National coordination	50,000.00	50,000.00	50,000.00			150,000.00	1.88
Action Plan 11: Regional coordination	100,000.00	100,000.00	100,000.00			300,000.00	3.75
Action Plan 12: Equipment and IT infrastructure/Broadband, Journals	459,000.00	109,000.00	109,000.00			677,000.00	8.47
Programme Management							
Contingency							
<b>TOTAL</b>	<b>2,899,000.00</b>	<b>2,549,000.00</b>	<b>2,549,000.00</b>			<b>7,997,000.00</b>	
<b>%</b>							
<b>B: Budget by partners</b>							
African University of Science and Technology							
The University of Ghana, Ghana	34,500.00	34,500.00	34,500.00			103,500.00	
Cheikh Anta Diop University in Dakar, Senegal	34,500.00	34,500.00	34,500.00			103,500.00	
Princeton University, Princeton, United States	34,500.00	34,500.00	34,500.00			103,500.00	
The Sheda Science and Technology Complex (SHESTCO), Abuja, Nigeria	34,500.00	34,500.00	34,500.00			103,500.00	
Arizona State University, Tempe, United States	34,500.00	34,500.00	34,500.00			103,500.00	
Kwara State University, Malete, (KWASU), Nigeria	34,500.00	34,500.00	34,500.00			103,500.00	
University of Buea, Cameroon	34,500.00	34,500.00	34,500.00			103,500.00	
The Ohio State University, Columbus, United States	34,500.00	34,500.00	34,500.00			103,500.00	
Kwame Nkrumah University of Science and Technology (KNUST)	34,500.00	34,500.00	34,500.00			103,500.00	
University of Sao Paulo, Brazil	34,500.00	34,500.00	34,500.00			103,500.00	
Rutgers University, Piscataway, NJ, United States	34,500.00	34,500.00	34,500.00			103,500.00	
NnamdiAzikiwe University, Akwa, Nigeria	34,500.00	34,500.00	34,500.00			103,500.00	
Stanford University, United States	34,500.00	34,500.00	34,500.00			103,500.00	
Worcester Polytechnic Institute, Worcester, MA, USA	34,500.00	34,500.00	34,500.00			103,500.00	

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Tufts University, Medford, MA, USA	34,500.00	34,500.00	34,500.00			<b>103,500.00</b>	
Blaise Pascal University, Clermont-Ferrand, France	34,500.00	34,500.00	34,500.00			<b>103,500.00</b>	
University of Gambia, Gambia	34,500.00	34,500.00	34,500.00			<b>103,500.00</b>	
National Agency for Science and Engineering Infrastructure (NASENI), Abuja, Nigeria	34,500.00	34,500.00	34,500.00			<b>103,500.00</b>	
Obafemi Awolowo University, Ile-Ife, Nigeria	34,500.00	34,500.00	34,500.00			<b>103,500.00</b>	
University of Lagos, Lagos, Nigeria	34,500.00	34,500.00	34,500.00			<b>103,500.00</b>	
Ahmadu Bello University, Zaria, Nigeria	34,500.00	34,500.00	34,500.00			<b>103,500.00</b>	
<b>TOTAL</b>	<b>690,000.00</b>	<b>690,000.00</b>	<b>690,000.00</b>			<b>2,070,000.00</b>	

\*Add rows as applicable.

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#### 8. DETAILED ACTIVITY SHEETS

##### A. Action Plan: Action Plan for Management and Governance

**Timeframe:** 1:02:2014 to 31:01:2015

**Activity:** Program coordination and partners

RESULT	Clear governance structure and hierarchy with well-defined policies for PAMI								
ACTIVITY	Program coordination								
OUTPUT	Engage high quality international partners in the development of enhanced quality of research and training activities by students and faculty.								
OUTPUT INDICATORS Clear governance structure, Procedures manuals, Regular evaluations, Transparent selections processes communications strategies-including use of ICT, Code of conduct						SOURCE OF VERIFICATION PAMI secretariat, National and Regional ICBs			
IMPLEMENTATION MILESTONES		Establishment of committees - PEC etc, PAMI secretariat, International Collaboration Boards (ICBs), appointment of focal persons within institutions							
PROCUREMENT		Not Applicable							
RESPONSIBILITY FOR IMPLEMENTATION		PAMI Center Leader and Team							
DURATION: 12 months			Commencement: 1 <sup>st</sup> /Feb/2014			Completion: 31 <sup>st</sup> /Jan/2015			
PRIMARY CONSTITUENTS: AUST, partner institutions, industrial partners, outreach locations and girl schools				PARTICIPANTS: National and regional post graduate students, faculty, industry practitioners and high school girls					
ASSUMPTIONS		PAMI would receive high-level support from all partner institutions							
FINANCIAL IMPLICATIONS			PAMI Main costs						
Budget Line Analysis			1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Regional partners								172,500.00
2	National partners								316,500.00
3	International partners								207,000.00
4									
5									
TOTALS									690,000.00

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#### B. Action Plan: Action Plan to achieve Learning Excellence

**Timeframe:** 6/May/2014 – 27/Sept/2015

**Activity:** Short Training Programmes

RESULT	Increased human capacity								
ACTIVITY	Short Training Programmes/workshops: 2/year.								
OUTPUT	Increased capacity to process minerals and raw materials within the region								
OUTPUT INDICATOR Number of new short courses, Number of participants in short courses, Number of national and regional students						SOURCE OF VERIFICATION PAMI Secretariat			
IMPLEMENTATION MILESTONES		MOUs all signed with partners; short course curriculum developed; location of national /regional short course venue agreed and approved by PEC; participant enrolment/faculty acceptance to teach.							
PROCUREMENT		Some faculty/lecturers to supplement AUST'S faculty for short-term courses							
RESPONSIBILITY FOR IMPLEMENTATION		PAMI team, PAMI secretariat							
DURATION: Biannual April and September. 50% held regionally at partner destinations			Commencement: 6/May/2014			Completion: 27/Sept/2015			
PRIMARY CONSTITUENTS: ACE partners				PARTICIPANTS: ACE students, industry participants, Government employees, Policymakers, artisans and professors of practice.					
ASSUMPTIONS		Courses would be fully subscribed and partner institutions would agree to host.							
FINANCIAL IMPLICATIONS			PAMI budget						
Budget Line Analysis			1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Short course/workshop (ACE/National partners hosting)			100,000					100,000.00
2	Short course/workshop (Regional partner hosting)					100,000			100,000.00
3									
4									
5									
TOTALS									200,000.00



## ACE TEMPLATE

### Implementation Plan

#### C. Action Plan: Action Plan to achieve Learning Excellence

**Timeframe:** 1<sup>st</sup>/Feb/2014 to 14<sup>th</sup>/Dec/2015

**Activity:** Interdisciplinary MSc/PhD programs

RESULT	Establishment of New MSc/PhD programs in Materials Science and Engineering							
ACTIVITY	Interdisciplinary MSc/PhD programs							
OUTPUT	Expanded research and learning opportunities across national and regional partner institutions using interdisciplinary and transdisciplinary approaches							
OUTPUT INDICATOR Number of joint MSc/PhD projects; Number of new MSc/PhD programs regional/national cooperation; Number of joint MSc/PhD course; Number of joint short courses; Effectiveness of committees in fostering cooperation						SOURCE OF VERIFICATION AAU, NUC, PAMI secretariat		
IMPLEMENTATION MILESTONES	Appointment of student selection committees; Student enrolment; Scholarship awards adoption of PAMI curriculum in KWASU and regionally in UG, KNUST and others.							
PROCUREMENT	Not applicable. Students will be admitted on merit and the normal AUST procedure for admission of students and award of scholarship							
RESPONSIBILITY FOR IMPLEMENTATION	PAMI team guided by PEC, PIAB							
DURATION: Annual			Commencement: 1 <sup>st</sup> /Feb/2014			Completion:14 <sup>th</sup> /Dec/2015		
PRIMARY CONSTITUENTS: ACE and Partner institutions and outreach centers/industry				PARTICIPANTS: ACE students, industry participants, Government employees, Policymakers, artisans and professors of practice.				
ASSUMPTIONS	MSc/PhD curriculum approval process will be rapid in partner institutions and enrolment of students would be high regionally and especially among women. Industry buy-in would be high.							
FINANCIAL IMPLICATIONS		PAMI budget						
Budget Line Analysis		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Interdisciplinary MSc/PhD programs	93,750	93,750	93,750	93,750			375,000.00
2								
3								
4								
5								
TOTALS								375,000.00

## ACE TEMPLATE

### Implementation Plan

#### D. Action Plan: Action plan for Teaching and Research Excellence

**Timeframe:** 15<sup>th</sup>/Dec/2014 to 14<sup>th</sup>/Dec/2015

**Activity:** *International Travel Fellowships*

RESULT	Research excellence: Strengthen capacity to engage in world class research							
ACTIVITY	International Travel Fellowships							
OUTPUT	Increased publication of peer-reviewed international journal papers and proceedings; Increased industrial research and collaborations							
OUTPUT INDICATOR Diversity of people engaged in programs e.g . Number of women; Representation across West and Central Africa; Representation of industry and government; 10 student fellowships/year; 10 faculty fellowships/year.						SOURCE OF VERIFICATION PAMI Secretariat		
IMPLEMENTATION MILESTONES	Appointment of selection committees; call for fellowship applications; Acceptance of fellows at partner destinations; successful completion of fellowships							
PROCUREMENT	No procurement: Normal AUST process of award of fellowships to students will be followed							
RESPONSIBILITY FOR IMPLEMENTATION	PAMI Executive Committee, PAMI team							
DURATION: Annual Fellowship awards			Commencement: 15 <sup>th</sup> /Dec/2014			Completion: 14 <sup>th</sup> /Dec/2015		
PRIMARY CONSTITUENTS: Partner institutions; Industrial partners, Regional Universities and Government research institutions.				PARTICIPANTS: PAMI students and Faculty				
ASSUMPTIONS	PAMI fellowships would be fully subscribed							
FINANCIAL IMPLICATIONS		PAMI budget						
Budget Line Analysis		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	10 student fellowships/year	50,000			50,000			100,000.00
2	10 Faculty fellowships/year	50,000			50,000			100,000.00
3								
4								
5								
TOTALS								200,000.00

## ACE TEMPLATE

### Implementation Plan

#### E. Action Plan: Action Plan for Management and Governance

**Timeframe:** 1<sup>st</sup>/Feb/2014 to 31<sup>st</sup>/Jan/2015

**Activity:** Secretariat

RESULT	Clear governance structure and hierarchy with well-defined policies								
ACTIVITY	Establishment of PAMI secretariat								
OUTPUT	Clear PAMI governance structure; Procedures manuals; Regular evaluations; Transparent selections processes; communications strategies-including use of ICT; Code of conduct								
OUTPUT INDICATOR: Establishment of PAMI secretariat and International Collaboration Board (ICB) in partner institutions						SOURCE OF VERIFICATION PAMI Team (Executive Secretary)			
IMPLEMENTATION MILESTONES	Appointment of Executive Secretary, 2 Administrative staff; Administration of MOUs and MOAs								
PROCUREMENT	Staff will be recruited through selection of individual methods of procurement, while office consumables will be procured through shopping								
RESPONSIBILITY FOR IMPLEMENTATION	PAMI Center Leader and Deputy Center Leader/PI								
DURATION: 3 years			Commencement: 1 <sup>st</sup> /Feb/2014			Completion: 31 <sup>st</sup> /Jan/2015			
PRIMARY CONSTITUENTS: All participating institutions				PARTICIPANTS: Students, Faculty, Industry partners, outreach partners					
ASSUMPTIONS		PAMI secretariat would receive support from all participating institutions							
FINANCIAL IMPLICATIONS			PAMI Budget						
Budget Line Analysis PAMI Secretariat cost			1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Legal/accounting costs		37,500						37,500
2	Executive Secretary		25,000						25,000
3	Administrative staff (IEO)		12,500						12,500
4	Administrative staff(Admin)		12,500						12,500
5	Materials and Supplies		25,000						25,000
6	Courier Services		6,500		6,000				12,500
7	Media		15,000		10,000				25,000
8	Travel/Local transportation		25,000						25,000
TOTALS									175,000

## ACE TEMPLATE

### Implementation Plan

#### F. Action Plan: Action Plan for Research Excellence

**Timeframe:** 1<sup>st</sup>/Feb/2014 to 31<sup>st</sup>/Jan/2015

**Activity:** Outreach to industry

RESULT	Strengthened capacity to engage in world class research relevant to industry							
ACTIVITY	Outreach to industry							
OUTPUT	Increased industrial research and collaborations, Industry Professors of Practice participating in PASMAT and other PAMI programmes.							
OUTPUT INDICATOR Number of projects/ Intellectual property outputs/ Number of agreements with companies						SOURCE OF VERIFICATION PAMI Admin staff (IEO)		
IMPLEMENTATION MILESTONES	Formation of PIAB, Establishment of Industry/academic research groups							
PROCUREMENT	Not applicable - The University under its normal course of operation will undertake outreach to industry							
RESPONSIBILITY FOR IMPLEMENTATION	Center Leader/Deputy Center leader							
DURATION: Annual			Commencement: 1 <sup>st</sup> /Feb/2014			Completion: 31 <sup>st</sup> /Jan/2015		
PRIMARY CONSTITUENTS: Local and Regional Industrial partners				PARTICIPANTS: PAMI Faculty, Students and industry partners				
ASSUMPTIONS		PIAB would be successful and the industrial membership scheme would be functional						
FINANCIAL IMPLICATIONS		PAMI Budget						
Budget Line Analysis		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Outreach to industry	100,000						100,000.00
2								
3								
4								
5								
TOTALS								100,000.00

## ACE TEMPLATE

### Implementation Plan

#### G. Action Plan: Action Plan Regarding Equity Dimensions

**Timeframe: Annual: 1<sup>st</sup>/Feb/2014 to 14<sup>th</sup>/Dec/2015**

**Activity: Outreach to Schools and Girls**

RESULT	Increased female participation in PAMI programmes at all levels							
ACTIVITY	Outreach to Schools and Girls							
OUTPUT	Diverse participation of women/girls and other stakeholders across West and Central Africa in short courses and research programs organized by PAMI. Stimulate the interest of girls in science at an early age, exposing them to contemporary outcomes.							
OUTPUT INDICATOR: Number of outreach events – WISE projects, Outreach periods in schools and girl-cantered projects.						SOURCE OF VERIFICATION: PAMI Secretariat		
IMPLEMENTATION MILESTONES	Launch of WISE annual plan under PAMI; Approval of PAMI outreach to schools annual plan.							
PROCUREMENT	Through shopping methods, consumables will be purchased for the outreach							
RESPONSIBILITY FOR IMPLEMENTATION	PAMI team							
DURATION: Annual			Commencement: 1 <sup>st</sup> /Feb/2014			Completion: 14 <sup>th</sup> /Dec/2015		
PRIMARY CONSTITUENTS: National and Regional Post-Basic educational institutions and especially for girls. Female faculty and PAMI female students and graduates.				PARTICIPANTS: Students in Post-Basic educational institutions. Women in Science.				
ASSUMPTIONS	Both formal and informal institutional support would be achieved to encourage girls/women participation in PAMI activities.							
FINANCIAL IMPLICATIONS		PAMI Budget						
Budget Line Analysis		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Outreach to schools and Girls	50,000						50,000.00
2								
3								
4								
5								
TOTALS								50,000.00

## ACE TEMPLATE

### Implementation Plan

#### H. Action Plan: Action Plan for Research Excellence

**Timeframe:** 1<sup>st</sup>/Feb/2014 to 30<sup>th</sup>/April/2015

**Activity:** Focused Research Groups

RESULT	Increased publication of peer-reviewed international journal papers and proceedings/ Increased industrial research and collaborations								
ACTIVITY	Focused Research Groups								
OUTPUT	Increased Number of peer-reviewed journal publications. Increased Number of peer-reviewed conference publications Increased Number of projects. Increment in Intellectual property outputs.								
OUTPUT INDICATOR: Number of peer-reviewed journal publications. Number of peer-reviewed conference publications.						SOURCE OF VERIFICATION PAMI Secretariat			
IMPLEMENTATION MILESTONES	Selection of 2 Faculty from participating institutions to join the FRGs; Establishment of thematic FRGs with regional and international participation and annual programmes. Establishment of 4 FRGs /year.								
PROCUREMENT	The equipment and consumables needed in research will all be procured through shopping. The members of the Focused Research Groups have already being identified by AUST								
RESPONSIBILITY FOR IMPLEMENTATION	PAMI team								
DURATION: Annual			Commencement: 1 <sup>st</sup> /Feb/2014			Completion: 30 <sup>th</sup> /April/2015			
PRIMARY CONSTITUENTS: All Participating Institutions				PARTICIPANTS: FRGs, Partners/Partner industries local, regional and international.					
ASSUMPTIONS		All stakeholders would embrace the proposed FRG thematic areas and populate the FRGs							
FINANCIAL IMPLICATIONS			PAMI Budget						
Budget Line Analysis			1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Research Budget for 4FRGs/annum		200,000						200,000.00
2	Travel to Local Conferences		50,000						50,000.00
3	Travel to International Conf		50,000			50,000			100,000.00
4	Publications and Journals		15,000						15,000.00
5	Equipment Use fees		15,000						15,000.00
6	Regional/National travel for Research		20,000						20,000.00
TOTALS									400,000.00

## ACE TEMPLATE

### Implementation Plan

#### I. Action Plan: Action Plan for Research Excellence

**Timeframe:** 1<sup>st</sup>/Jan/2015 To 31<sup>st</sup>/Dec/2015

**Activity:** Seed Grants

RESULT	Increased publication of peer-reviewed international journal papers and proceedings/ Increased industrial research and collaborations								
ACTIVITY	Seed Grants								
OUTPUT	Increased Number of peer-reviewed journal publications. Increased Number of peer-reviewed conference publications Increased Number of projects. Increment in Intellectual property outputs.								
OUTPUT INDICATOR Number of peer-reviewed journal publications. Number of peer-reviewed conference publications.						SOURCE OF VERIFICATION PAMI secretariat			
IMPLEMENTATION MILESTONES		Invention disclosures/filing of patents by young scientists. Award of PhD to young PAMI participants.							
PROCUREMENT		Not Applicable - Selection will be based on normal AUST competitive process							
RESPONSIBILITY FOR IMPLEMENTATION		PAMI team							
DURATION: Annual			Commencement: 1 <sup>st</sup> /Jan/2015			Completion: 31 <sup>st</sup> /Dec/2015			
PRIMARY CONSTITUENTS: PAMI partner institutions				PARTICIPANTS: Young promising researchers; fresh PAMI graduates					
ASSUMPTIONS		PAMI graduates and young investigators would benefit from the funding provided to kick-start their research activities upon graduation							
FINANCIAL IMPLICATIONS			PAMI budget						
Budget Line Analysis			1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Seed grants for young Inventors				100,000				100,000.00
2									
3									
4									
5									
TOTALS									100,000.00

## ACE TEMPLATE

### Implementation Plan

#### J. Action Plan: Action Plan for Regional and National Sector Partners

**Timeframe:** 15<sup>th</sup>/Dec/2014 – 14<sup>th</sup>/Dec/2015

**Activity:** National coordination

RESULT	National cooperation with sector partners								
ACTIVITY	National coordination of partner institutions								
OUTPUT	Engagement of participants from government agencies and research labs in research, learning and outreach activities as well as private sector.								
OUTPUT INDICATOR Number of sector partners - Increased National participation in PAMI programs -Increased National Participation in short courses -Increased National Participation in MSc/PhD programs as students and instructors - Increased National Participation in research activities						SOURCE OF VERIFICATION PAMI secretariat/M&E			
IMPLEMENTATION MILESTONES		Approval of PEC to engage in National workshop Scheduling of workshops and National coordination meetings							
PROCUREMENT		This will be carried out by AUST through transaction based financing							
RESPONSIBILITY FOR IMPLEMENTATION		PAMI PI/Deputy Center Leader							
DURATION: Annual			Commencement: 15 <sup>th</sup> /Dec/2014			Completion: 14 <sup>th</sup> /Dec/2015			
PRIMARY CONSTITUENTS: National sector partners				PARTICIPANTS: All National partner institutions					
ASSUMPTIONS		Strong National research and training teams with participation in all PAMI programs							
FINANCIAL IMPLICATIONS		PAMI budget							
Budget Line Analysis			1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	National Coordination Meetings		25,000						25,000.00
2	National Coordination workshops				25,000				25,000.00
3									
4									
5									
TOTALS									50,000.00



## ACE TEMPLATE

### Implementation Plan

#### K. Action Plan: Action Plan for Collaboration with International Partners

**Timeframe:** 15<sup>th</sup>/Dec/2014 to 14<sup>th</sup>/Dec/2015

**Activity:** International Coordination with Partners

RESULT		International cooperation in research and training							
ACTIVITY		International Coordination with Partners							
OUTPUT		International collaboration with partners							
OUTPUT INDICATOR -supervision of PhD students. -Number of world class institutional partners. -Number of faculty and student exchange visits. -Number of joint publications -Number of courses taught by international collaboration.						SOURCE OF VERIFICATION  PAMI Secretariat			
IMPLEMENTATION MILESTONES		Recruitment of students and faculty for visitation. Acceptance of PAMI students and faculty for international visit to partner laboratories.							
PROCUREMENT		Not Applicable.							
RESPONSIBILITY FOR IMPLEMENTATION		PAMI team							
DURATION: Annual			Commencement: 15 <sup>th</sup> /Dec/2014			Completion: 14 <sup>th</sup> /Dec/2015			
PRIMARY CONSTITUENTS: PAMI international collaborators				PARTICIPANTS: PAMI students and faculty					
ASSUMPTIONS		Visa issuance would not hinder visits and collaborators would be open to host.							
FINANCIAL IMPLICATIONS			PAMI budget						
Budget Line Analysis			1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Regional Coordination Meetings		50,000						50,000.00
2	Regional Coordination workshops				50,000				50,000.00
3									
4									
5									
TOTALS									100,000.00

## ACE TEMPLATE

### Implementation Plan

#### **L. Action Plan:** Action Plan for Learning and Research Excellence

**Timeframe:** 1<sup>st</sup>/Feb/2014 – 31<sup>st</sup>/Jan/2015

**Activity:** Equipment and IT Infrastructure/Broadband

RESULT		Research excellence: Strengthened capacity to engage in world class research						
ACTIVITY		Equipment and IT Infrastructure/Broadband						
OUTPUT		10Mbps Broadband and ICT Equipment						
OUTPUT INDICATOR: Building Effective Teams for Research Excellence Scaling of PhD Programs Achieving Research Excellence Incentives and the Leveraging of Research Resources Using Information Technologies Industrial Training and Outreach Measurement of Research Outcomes and Quality						SOURCE OF VERIFICATION PAMI secretariat		
IMPLEMENTATION MILESTONES		Scheduling of procurement events according to procurement plan						
PROCUREMENT		NCB/shopping						
RESPONSIBILITY FOR IMPLEMENTATION		PAMI team						
DURATION: Annual			Commencement: 1 <sup>st</sup> /Feb/2014			Completion: 31 <sup>st</sup> /Jan/2015		
PRIMARY CONSTITUENTS: ACE component centers				PARTICIPANTS: PAMI participants				
ASSUMPTIONS		Vendors would deliver quality products according to schedules.						
FINANCIAL IMPLICATIONS		PAMI Budget						
Budget Line Analysis		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Laptops	25,000						25,000.00
2	Videoconferencing equipment (5 x \$20,000/institution	100,000						100,000.00
3	Broadband Access	84,000						84,000.00
4	Solar Cell fabrication lab upgrade	100,000						100,000.00
5	Biomaterials Lab upgrade	75,000						75,000.00
6	Multifunctional lab upgrade	75,000						75,000.00
TOTALS								459,000.00

## **9. TORs FOR KEY PROJECT STAFF.**

### **A. Internal Auditor**

**Nelson Mandela Institutes: African University of Science and Technology (AUST),  
Abuja, Nigeria.**

#### ***Objectives***

The Internal Auditor will, in accordance with the two institutions' financial regulations, provide, independent, objective assurance and advisory services designed to add value and improve the operations of both institutions. The Internal Auditor will provide all levels of management with periodic, independent and objective appraisals and audits of financial, accounting, operational, administrative and other activities, including identifying possible means of improving accountability, efficiency of operations and economy in the use of resources, internally and externally.

#### ***Duties and Responsibilities***

1. Developing and managing a flexible annual audit plan using appropriate risk-based methodology, including any risks or control concerns identified by management, and submitting that plan to the audit committee for review and approval.
2. Implementing the annual audit plan, as approved, including, as appropriate, any special tasks or projects requested by management and the audit committee; and, reporting periodically on the status and results of the annual audit plan as well as the adequacy of the division's resources.
3. Conducting or contributing to comprehensive audits/reviews that evaluate and report on the soundness and adequacy of policies, procedures and financial, operational programs.
4. Determining whether AUST and NMI's risk management, control, and governance processes, as designed and represented by management, is adequate and functioning. Assessing the adequacy and effectiveness of such processes for controlling their activities and managing their risks.
5. Assigning and supervising financial, operational, administrative and information technology audits.
6. Assigning and supervising the reviewing of systems of internal controls maintained by the institutions to safeguard their financial and physical assets and making recommendations to correct any weaknesses;
7. Providing advisory services, beyond internal auditing assurance services, to assist management in meeting its objectives; and, maintaining a quality assurance program which assures the operation of internal auditing activities.
8. Evaluating and assessing significant new or changing services, processes, operations, and controls relating to their development and implementation.

## ACE TEMPLATE

### Implementation Plan

9. Liaising with the external auditors as appropriate, for the purpose of providing optimal audit coverage to the institutions. Reporting to management on significant issues related to the processes for controlling the activities, including potential improvements to those processes.
10. Undertaking such other activities deemed to be in conformity with the Institute of Internal Auditors standards for the professional practice of internal auditing.
11. Perform other duties as required.

#### ***Qualifications/Experience/Selection Criteria (including skills, knowledge):***

- Masters degree or equivalent in Finance, Business and/or Internationally recognized Professional Accounting Qualifications (CA, CPA, ACA)
- At least 5-6 years of relevant experience in the profession.
- Substantial experience in auditing and risk assessment work in internal auditing of a well established company/institution or in external audit environments in an international institution or firm. International exposure would be a plus.
- Ability to clearly communicate, write, present and defend audit findings and recommendations.
- Established reputation for integrity, good judgment, fairness and discretion in dealing with top management, staff and external parties
- Capacity to influence and endear confidence upon Auditors.
- Ability to work in a team.

**Duty Station:** Abuja, Nigeria

***Duration of Contract: Three years. The first will be a probation year at the successful completion of which the contract would be renewed and extended for at least two more years.***

**Salary:** Competitive and Negotiable.

**ACE TEMPLATE**  
**Implementation Plan**

**B. Executive Secretary**

**World Bank African Centers of Excellence Program: ACE 32. Pan African Materials Institute (PAMI).**

**HOST INSTITUTION: African University of Science and Technology (AUST).**

**Job title:** Executive Secretary, PAMI ACE

Appointment Type: Term

Language Preference: English (essential)/French desirable

Location: Abuja, Nigeria

***Background/General Description***

The activities of PAMI will be controlled by the PAMI Executive Committee (PEC), which will be coordinated by the Director of PAMI. The PEC will include representatives from each of AUST's five (5) core departments as well as representatives from regional and national partners. The PEC will meet on a quarterly basis using videoconferencing facilities that will be deployed at each of the partner institutions. Their goal will be to evaluate and vote on hiring and programmatic proposals on a quarterly basis. Within the PEC, sub-committees will be established to consider applications for travel fellowships, seed proposals, workshops, short courses and MSc/PhD degree programs. These sub-committees will meet on a more regular (weekly, biweekly or monthly) basis to consider/evaluate applications between the quarterly PEC meetings. They will then present their recommendations to the PEC for voting at the quarterly PEC meetings.

The day-to-day implementations of the programs will be managed by the PAMI secretariat under the supervision of the PAMI Deputy Center Leader/PI. The activities will include: program planning and coordination; scheduling and communications; marketing; monitoring and evaluation; budget forecasting and accounting; logistics and protocols; international collaborations; industrial collaborations; study visits/internships and faculty/student exchange programs, procurement, education and outreach programs. In each of these areas, staff at the PAMI secretariat will work with PAMI faculty, post-docs and students and industrial collaborators to implement the approved activities. They will also use a range of multimedia (websites, Twitter, Facebook, and G+ accounts) and a PAMI Newsletter to advertise the activities and successes of PAMI. Finally, the secretariat will develop and administer questionnaires that will be used to measure and enhance the effectiveness of the proposed PAMI activities in teaching, research and outreach.

***The Executive Secretary of PAMI manages the Program Office.***

The main responsibilities of the Secretariat include: (1) providing support to the PAMI executive committee (PEC) and the Center Leadership in the conduct of PAMI business, including organizing Executive and committee meetings, drafting background notes and papers, managing relations with World Bank, NUC and AAU, and following-up the

implementation of plan decisions; (2) serving as the key liaison with the World Bank, The Regional Facilitation Unit (RFU), in this case, the Association of African Universities (AAU), the National, Regional and International partners, as well as the respective industrial partners; and (4) serving as the focal contact of the PAMI on a day to day basis and coordinating the communications of the World Bank and the project monitoring teams. (5) Maintaining and managing a web presence and also engaging social media platforms to educate and inform the public about PAMI activities.

### ***Duties and Accountabilities***

The Executive Secretary (ES) of PAMI reports to the Deputy Center Leader and PI who is responsible for the day to day management of the program. S/He serves as adviser to the PAMI leadership on the strategic directions of the PAMI especially as they relate to meeting the DLIs as well as meeting the project development objectives and represents the PAMI and the Center Leadership when delegated to do so. Specific duties and responsibilities include:

1. Lead the organization of PAMI meetings (face-to-face and virtual) in consultation with the Center Leadership; communicate the results of the PAMI (executive committee and implementation team) deliberations to the relevant parts of the PAMI system through the preparation of approved minutes and follow up on the status of issues raised by the appropriate PAMI committee and most especially, the PAMI Executive Committee (PEC).
2. Ensure that the PEC as well as the Center Leadership have the information it needs to make decisions on a timely basis. This includes: (a) ensuring that the project meets its timelines in accordance to the Project Implementation Plan (PIP); (b) Planning and Organizing the Annual National Planning meetings/workshops; Regional Planning meetings/workshops; (c) ensuring a smooth and timely flow of information to all the partner institutions, by ensuring the publication of newsletters, information bulletins, updating the websites, and sharing of reports.
3. Advise the Center Leadership on priorities set for meeting DLIs and the compliance in collaboration with the M & E officer and the FM; collating information on procurement processes and publishing same to meet the transparency requirements of World Bank.
4. Lead efficient and timely delivery of the PAMI secretariat response to NUC, Federal Ministry of Education, RFU and the World Bank management's demands etc especially related to reporting achievement of Project Development Objectives (PDOs).
5. Coordinate the PAMI and PIAB, ISAB member nominations and appointment processes including those of the secretariat staff in accordance with International best practices and in accordance with the World Bank ensuring transparency and documenting all processes leading to the appointments, nominations, scholarships, fellowships etc related to the execution of PAMI projects.

## ACE TEMPLATE

### Implementation Plan

6. Develop the agenda, prepare background documents and organize the Annual project coordination and appraisal meetings (National and Regional); ensure that all documentation for timely withdrawal application for funds prepared in accordance with the Project Appraisal Document (PAD) for ACEs.
7. Coordinate PAMI secretariat work programs with those of the partners institutions, Industrial partners and PAMI support groups to ensure that the required agreements supporting relationships with PAMI are in place, that the decisions of the PEC on resource allocations have been received and that the necessary financial reports are provided to the World Bank on a timely basis.
8. Provide oversight on communications and information management for the PAMI, and coordinate with the Center Leadership of of PAMI on communications and marketing of the educational and research activities of PAMI.
9. Ensure collaboration and communication among the key PAMI actors and promote cooperation. Serve as the focal point for PAMI, in counterpart to the Center Leadership, for the day to day operation of the Institute.
10. Develop PAMI's budget for approval by the PEC and be responsible for monitoring and tracking of the unit's deliverables; coordinate with individual task managers and the Financial Manager to ensure that the work is proceeding in a timely manner and on budget.
11. Ensure that PAMI performs effectively and efficiently in providing essential organizational, managerial and administrative support to PAMI and its partner institutions and affiliates as well as the World Bank and its monitoring agencies.
12. Manage the day to day activities of the PAMI Office, oversee the effective performance, evaluation, and career development of its staff, and mentor staff.

This is an annually renewable term position, open for the first 3 years.

#### ***Selection Criteria:***

- He/She is an AUST staff attached to the PAMI secretariat to help PAMI partners interface with AUST. As such, he/she must be have secretarial and administration experience and be familiar with AUST'S visiting and resident faculty, the PAMI-ACE project, and AUST staff and management
- Prior international work/training experience in achieving results.
- Demonstrated intellectual leadership and experience in an academic work environment especially with program coordination skills

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- Demonstrated political judgment and recognized ability to lead strategic partnerships, align goals, and promote collaborative action.
- Strong client orientation and skills in policy dialogue and/or change management on complex institutional, governance and finance issues. This includes a demonstrated ability to provide high quality leadership by taking principled and balanced positions on faculty and student selection processes and partnership contribution measurement, in order to overcome obstacles, improve the design of tasks and facilitate their implementation/diffusion.
- Excellent interpersonal skills; a proven team player, deeply committed to working unselfishly across all forms of boundaries, and experienced in working highly collaboratively in a broad range of cultural and social contexts, acting with integrity at all times to build trust and create an enabling work environment.
- Excellent managerial and communication skills for managing staff of the unit, coordinating multiple organizations.



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**C. Administrative Secretary (Industry and Outreach)**

**World Bank African Centers of Excellence Programme: ACE 32. Pan African Materials Institute (PAMI).**

**HOST INSTITUTION: African University of Science and Technology (AUST).**

**Job title:** Administrative Secretary (Industry & Outreach), PAMI ACE

Appointment Type: Term

Language Preference: English (essential)/French desirable

Location: Abuja, Nigeria

***Background/General Description***

The activities of PAMI will be controlled by the PAMI Executive Committee (PEC), which will be coordinated by the Director of PAMI. The PEC will include representatives from each of AUST's five (5) core departments as well as representatives from regional and national partners. The PEC will meet on a quarterly basis using videoconferencing facilities that will be deployed at each of the partner institutions. Their goal will be to evaluate and vote on hiring and programmatic proposals on a quarterly basis. Within the PEC, sub-committees will be established to consider applications for travel fellowships, seed proposals, workshops, short courses and MSc/PhD degree programs. These sub-committees will meet on a more regular (weekly, biweekly or monthly) basis to consider/evaluate applications between the quarterly PEC meetings. They will then present their recommendations to the PEC for voting at the quarterly PEC meetings.

The day-to-day implementations of the programs will be managed by the PAMI secretariat under the supervision of the PAMI Deputy Center Leader/PI. The activities will include: program planning and coordination; scheduling and communications; marketing; monitoring and evaluation; budget forecasting and accounting; logistics and protocols; international collaborations; industrial collaborations; study visits/internships and faculty/student exchange programs, procurement, education and outreach programs. In each of these areas, staff at the PAMI secretariat will work with PAMI faculty, post-docs and students and industrial collaborators to implement the approved activities. They will also use a range of multimedia (websites, Twitter, Facebook, and G+ accounts) and a PAMI Newsletter to advertise the activities and successes of PAMI. Finally, the secretariat will develop and administer questionnaires that will be used to measure and enhance the effectiveness of the proposed PAMI activities in teaching, research and outreach.

The Administrative Officer (Industry and Educational Outreach) works in concert, and reports to the Executive Secretary.

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***Duties and Accountabilities***

1. The Administrative Officer (Industry and Educational Outreach) of PAMI reports to the Executive Secretary who is responsible for the day to day management of the program. S/He serves as adviser to Executive Secretary on the Industrial and outreach activities of the PAMI especially as they relate to meeting the Industrial outreach DLIs as well as meeting the project development objectives and represents the PAMI and the Executive Secretary when delegated to do so. Specific duties and responsibilities include:
2. Participate in the organization of PAMI meetings (face-to-face and virtual) in consultation with the Executive Secretary; communicate the results of the PAMI (executive committee and implementation team) deliberations to the relevant parts of the PAMI system through the preparation of approved minutes and follow up on the status of issues raised by the appropriate PAMI committee and most especially, the PAMI Executive Committee (PEC).
3. Ensure that the PEC as well as the Center Leadership have the information they need to make decisions on a timely basis. This includes: (a) ensuring that the project meets its timelines in accordance to the Project Implementation Plan (PIP); (b) Planning and Organizing the Annual National Planning meetings/workshops; Regional Planning meetings/workshops; (c) ensuring a smooth and timely flow of information to all the industrial and outreach centers.
4. Keep records of priorities set for meeting Industrial and Outreach DLIs and the compliance in collaboration with the M & E officer and the FM; collating information on WISE programmes, PIAB, ISAB and other outreach activities and publishing same to meet the transparency requirements of World Bank.
5. Keep efficient records on communications with the World Bank management's demands, etc especially related to reporting achievement of Project Development Objectives (PDOs).
6. Be responsible to coordinate the PAMI and PIAB, ISAB member nominations and appointment processes including those of the secretariat staff in accordance with International best practices and in accordance with the World Bank ensuring transparency and documenting all processes leading to the appointments, nominations, scholarships, fellowships etc related to the execution of PAMI projects.
7. Coordinate PAMI secretariat work programs with those of the Industrial partners and outreach stations to ensure that the required agreements supporting relationships with PAMI are in place, that the decisions of the PEC on resource allocations have been

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received and that the necessary financial reports are provided to the World Bank on a timely basis.

8. Provide information on communications and information management for the PAMI, and coordinate with the Center Leadership of PAMI on communications and marketing of the educational and research activities of PAMI.
9. Ensure collaboration and communication among the key PAMI actors and promote cooperation. Serve as the focal point for PAMI, in counterpart to the Center Leadership, for the day to day operation of the Institute.
10. Ensure that PAMI performs effectively and efficiently in providing essential organizational, managerial and administrative support to PAMI and its partner institutions and affiliates as well as the World Bank and its monitoring agencies.

This is an annually renewable term position, open for the first 3 years.

#### ▪ *Selection Criteria:*

- A bachelor's degree and knowledge of the modus operandi of PAMI-ACE.
- Demonstrated intellectual leadership and experience in an academic research-oriented work environment especially with program coordination skills
- Demonstrated political judgment and recognized ability to lead strategic partnerships, align goals, and promote collaborative action.
- Strong client orientation and skills in policy dialogue and/or change management on complex institutional, governance and finance issues. This includes a demonstrated ability to provide high quality leadership by taking principled and balanced positions on faculty and student selection processes and partnership contribution measurement, in order to overcome obstacles, improve the design of tasks and facilitate their implementation/diffusion.
- Excellent interpersonal skills; a proven team player, deeply committed to working unselfishly across all forms of boundaries, and experienced in working highly collaboratively in a broad range of cultural and social contexts, acting with integrity at all times to build trust and create an enabling work environment.
- Excellent managerial and communication skills for managing staff of the unit, coordinating multiple organizations.

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**D. Administrative Secretary (Administration)**

**World Bank African Centers of Excellence Programme: ACE 32. Pan African Materials Institute (PAMI).**

**HOST INSTITUTION: African University of Science and Technology (AUST).**

**Job title:** Administrative Secretary (Industry & Outreach), PAMI ACE

Appointment Type: Term

Language Preference: English (essential)/French desirable

Location: Abuja, Nigeria

***Background/General Description***

The activities of PAMI will be controlled by the PAMI Executive Committee (PEC), which will be coordinated by the Director of PAMI. The PEC will include representatives from each of AUST's five (5) core departments as well as representatives from regional and national partners. The PEC will meet on a quarterly basis using videoconferencing facilities that will be deployed at each of the partner institutions. Their goal will be to evaluate and vote on hiring and programmatic proposals on a quarterly basis. Within the PEC, sub-committees will be established to consider applications for travel fellowships, seed proposals, workshops, short courses and MSc/PhD degree programs. These sub-committees will meet on a more regular (weekly, biweekly or monthly) basis to consider/evaluate applications between the quarterly PEC meetings. They will then present their recommendations to the PEC for voting at the quarterly PEC meetings.

The day-to-day implementations of the programs will be managed by the PAMI secretariat under the supervision of the PAMI Deputy Center Leader/PI. The activities will include: program planning and coordination; scheduling and communications; marketing; monitoring and evaluation; budget forecasting and accounting; logistics and protocols; international collaborations; industrial collaborations; study visits/internships and faculty/student exchange programs, procurement, education and outreach programs. In each of these areas, staff at the PAMI secretariat will work with PAMI faculty, post-docs and students and industrial collaborators to implement the approved activities. They will also use a range of multimedia (websites, Twitter, Facebook, and G+ accounts) and a PAMI Newsletter to advertise the activities and successes of PAMI. Finally, the secretariat will develop and administer questionnaires that will be used to measure and enhance the effectiveness of the proposed PAMI activities in teaching, research and outreach.

The Administrative Officer (Administration) works in concert, and reports to the Executive Secretary.

### *Duties and Accountabilities*

The Administrative Officer (Industry and Educational Outreach) of PAMI reports to the Executive Secretary who is responsible for the day to day management of the program. S/He serves as adviser to Executive Secretary on the Industrial and outreach activities of the PAMI especially as they relate to meeting the Industrial outreach DLIs as well as meeting the project development objectives and represents the PAMI and the Executive Secretary when delegated to do so. Specific duties and responsibilities include:

1. Participate in the organization of PAMI meetings (face-to-face and virtual) in consultation with the Executive Secretary; communicate the results of the PAMI (executive committee and implementation team) deliberations to the relevant parts of the PAMI system through the preparation of approved minutes and follow up on the status of issues raised by the appropriate PAMI committee and most especially, the PAMI Executive Committee (PEC).
2. Ensure that the PEC as well as the Center Leadership have the information they need to make decisions on a timely basis. This includes: (a) ensuring that the project meets its timelines in accordance to the Project Implementation Plan (PIP); (b) Planning and Organizing the Annual National Planning meetings/workshops; Regional Planning meetings/workshops; (c) ensuring a smooth and timely flow of information to all the industrial and outreach centers.
3. Keep records of priorities set for meeting Administrative DLIs and publishing same to meet the transparency requirements of World Bank
4. Work closely with the Procurement, Monitoring and Evaluation officer as well as the Finance officer in ensuring project reporting are done in the formats required by the WB and notifying the ES of the actions taken by the responsible officer
5. Keep efficient records on communications especially the questionnaire raw data and analysis for process audit purposes.
6. Be responsible to keep records of all Scholarship information, committee member nominations and appointment processes including those of the secretariat staff in accordance with International best practices and in accordance with the World Bank processes, ensuring transparency and documenting all processes leading to, nominations, scholarships, fellowships etc related to the execution of PAMI projects.
7. Coordinate PAMI secretariat work programs with those of the Industrial partners and outreach stations to ensure that the required agreements supporting relationships with PAMI are in place, that the decisions of the PEC on resource

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allocations have been received and that the necessary financial reports are provided to the World Bank on a timely basis.

8. Provide information on communications and information management for the PAMI, and coordinate with the Center Leadership of PAMI on communications and marketing of the educational and research activities of PAMI.
9. Ensure collaboration and communication among the key PAMI actors and promote cooperation. Serve as the focal point for PAMI, in counterpart to the Center Leadership, for the day to day operation of the Institute.
10. Ensure that PAMI performs effectively and efficiently in providing essential organizational, managerial and administrative support to PAMI and its partner institutions and affiliates as well as the World Bank and its monitoring agencies.

This is an annually renewable term position, open for the first 3 years.

- A degree (BA or its equivalent) in Project Management related discipline and/or social sciences with a heavy bias for secretarial and administration.
- Demonstrated political judgment and recognized ability to lead strategic partnerships, align goals, and promote collaborative action.
- Strong client orientation and skills in policy dialogue and/or change management on complex institutional, governance and finance issues. This includes a demonstrated ability to provide high quality leadership by taking principled and balanced positions on faculty and student selection processes and partnership contribution measurement, in order to overcome obstacles, improve the design of tasks and facilitate their implementation/diffusion.
- Excellent interpersonal skills; a proven team player, deeply committed to working unselfishly across all forms of boundaries, and experienced in working highly collaboratively in a broad range of cultural and social contexts, acting with integrity at all times to build trust and create an enabling work environment.
- Excellent managerial and communication skills for managing staff of the unit, coordinating multiple organizations.

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