The coordinators (and e-mail IDs) for the thematic area on 'Materials Science and Renewable Energy'

For the **ACEs**:

- On behalf of AUST, Nigeria: Prof. Peter A. Onwualu aonwualu@aust.edu.ng and Prof. Shola Odusanya <shola2@hotmail.com>
- On behalf of Moi Univ., Kenya: Prof. Ambrose Kiprop <ambkiprop@gmail.com>
- On behalf of Makerere University, Uganda: Prof. John Baptist Kirabira <jbkirabira@cedat.mak.ac.ug>
- On behalf of University of Rwanda, Rwanda: Prof. Etienne Ntagwirumugara <etienne.ntagwirumugara@gmail.com> and Prof. Hakizimana J. de Dieu <hakizimanajd@gmail.com>

From the **Indian** side:

- On behalf of IIT Bombay: Prof. Amartya Mukhopadhyay <amartya.28nov@gmail.com>
- On behalf of JNCASR: Prof. Umesh V Waghmare <waghmare@jncasr.ac.in>
- On behalf of ARCI, Hyderabad: Dr. P.K. Jain <pkjain@arci.res.in>
- Till direct contact is established between the respective collaborators on both the sides, contact may be established via communication with the respective Institute co-ordinators. Of course, for e-mails involving finalization of plans (but not for all discussion), all the other Institute co-ordinators may better be also kept in the loop (as 'cc'

Salient features of the deliberations for the thematic area on 'Materials Science and Renewable Energy'

- The areas where the ACEs intend to initiate collaboration were discussed; narrowing down to some of the more specific areas, along with identification of the Indian counterpart(s) having relevant expertise. Such areas include *Energy storage* (*batteries*; including fabrication), *Perovskite for solar cells* (including roll-to-roll production of flexible cells), *CFD*, *biofuels* and *Mineral Processing*.
- Accordingly, the number of potential visits by personals from each of the ACEs to the Indian counterparts were noted; which will need further deliberation on both sides, directly between the concerned faculty members, prior to the initiation of visits. This has been summarized in the following slide.
- Of course, other areas of possible mutual interests, such as *corrosion*, making-shaping-treating of *carbon steels* (especially, *welding* and *forging*), *fracture mechanics* of metallic materials (all AUST Nigeria) and *biomaterials* (including nanomaterials for drug delivery), tissue engineering (primarily AUST Nigeria).
- Since the number of allowed visits from the Indian counterparts is just limited to 4 faculty members, it was felt that the final planning of that would be based on the visits by ACE personals, leading to the most beneficial return visits.

Proposed numbers of visits to India from the ACEs

Area of interest	ACE	No. of Faculties	No. of PhD students	No. of MSc students	To Indian Institute(s)
Energy storage (battery)	AUST Nigeria	1	1	1	IIT Bombay, ARCI Hyderabad, JNCASR, IITR
	Moi Univ., Kenya	1	1	1	
	Univ. of Rwanda	1	2	1	
Perovskite (for solar cells)	AUST Nigeria	-	2	-	IIT Bombay, JNCASR, IITR
	Moi Univ., Kenya	1	1		
	Univ. of Rwanda	1	1	1	
	Mak. Univ., Uganda	1	1	1	
CFD	Moi Univ., Kenya	1	1	-	JNCASR
Biofuels	AUST Nigeria	1	1	1	IITB, IITR
	Moi Univ., Kenya	2	-	-	IIT Roorkee
	Univ. of Rwanda	1	2	2	IITB, IITR
	Mak. Univ., Uganda	2	1	2	IITB, IITR
Mineral Processing	AUST Nigeria	1	1		IIT Roorkee
	Mak. Univ., Uganda	1	1		

Opportunities at JNCASR, Bangalore

I. AUST, Nigeria (Peter Onwalu & Shola Odusanya)
- Organic Electronics and Solar Cells, Perovskites: K S Narayan
- Drug Delivery and Bio-nano Materials: M Eswarmoorthy

II. MoI University, Kenya (A Kiprop)
- Solar Photovoltaics: K S Narayan
- Thermoelectreics: K Biswas
- CFD: Santosh Ansumali, S Ganesh

III. Makerere University, Uganda (J B M Kirabira)
- *Characterization: Ranjan Datta, A Sundaresan, Chandrabhas N
- Synthesis of nano-materials: Sebastian Peter, S Sridharm T K Maji
- Perovskite Solar Cells: K S Narayan

IV. University of Rwanda, Rwanda (Ntagwirumugara, H J de Dieu)
- Energy Storage: Premakumar Senguttuwan
- Solar Photovoltaics, perovskite, organic electronics: K S Narayan

- Synthesis of nano-materials: Sebastian Peter, T K Maji

V. Open to All
    - Theory and Simulations of Materials (UVW, SN, SKP)

JNCASR: Other Areas of Potential Interest

- 2-Dimensional Materials for Solar Water Splitting (CNR Rao)
- Self-assembled Soft Materials (Subi George)
- Supramolecular Materials and Polymers (Subi George)
- Quantum Dots (Ranjani Viswanatha)
- Materials for Fuel Cells (Sebastian Peter)
- III-V Semiconductors (Bivas Saha)
- Catalyst Materials for Green Environment (S Peter)
- Multi-functional Materials (A Sundaresan)
- Metal-organic Frameworks (T K Maji)
- Synthesis of Polymers (S Sridhar)
- Brillouin and Raman Spectroscopy (C Narayana)
- Biomaterials (Sarit Agasti and T Govindaraju)