

MEMORANDUM OF UNDERSTANDING

among

NATIONAL RENEWABLE ENERGY LABORATORY,

THE REGENTS OF THE UNIVERSITY OF COLORADO,

BRAZILIAN CENTER FOR RESEARCH IN ENERGY AND MATERIALS,

NATIONAL COUNCIL FOR SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT OF BRAZIL,

and

NATIONAL COUNCIL FOR THE STATE FUNDING AGENCIES

**CONCERNING COORDINATION TO DEVELOP NANOTECHNOLOGY AND
RENEWABLE ENERGY MATERIALS**

The National Renewable Energy Laboratory, the Regents of the University of Colorado, the Brazilian Center for Research in Energy and Materials, the National Counsel for Scientific and Technological Development of Brazil, and the National Council for the State Funding Agencies, each a "Participant" and collectively the "Participants":

NOTING their mutual interest in promoting collaboration among the United States and Brazilian Participants to develop nanotechnology and renewable energy materials,

Have reached the following understanding:

1. Participants

- a. The National Renewable Energy Laboratory ("NREL") is a national laboratory owned by the United States Department of Energy (DOE) and managed and operated by the Alliance for Sustainable Energy, LLC under DOE Contract No. DE-AC36-08GO28308. NREL has a primary location at 15013 Denver West Parkway, Golden, Colorado, 80401.
- b. The Regents of the University of Colorado Boulder ("CU-B") is an accredited, public research university of the state of Colorado offering bachelor's, master's and doctoral degrees in over 150 fields of study in Boulder, CO.
- c. The Brazilian Center for Research in Energy and Materials ("CNPEM") is a legal private entity, nonprofit, registered with the National Register of Legal Entities/Ministry of Finance (Cadastro Nacional da Pessoa Jurídica/Ministério da Fazenda) CNPJ / MF under N°. 01.567.817/0001-75, located at Giuseppe Máximo Scolfaro, nº 10.000, Guará, Campinas, State of São Paulo, qualified as a Social Organization by the Ministry of Science, Technology and Innovation, and responsible for managing the Brazilian Synchrotron Light Laboratory, the Brazilian Bioscience National Laboratory, the Brazilian Bioethanol Science and Technology Laboratory, and the Brazilian Nanotechnology National Laboratory.
- d. The National Council for Scientific and Technological Development of Brazil (Conselho Nacional de Desenvolvimento Científico e Tecnológico) ("CNPq") is an agency of the Ministry of Science and Technology in Brasília, Brazil that promotes scientific and technological research and trains and qualifies researchers in Brazil and abroad.
- e. The National Council for the State Funding Agencies (Conselho Nacional das Fundações Estaduais de Amparo à Pesquisa) ("CONFAP") is a non-profit organization with the objective to support the interests of Brazilian state agencies that promote science, technology and innovation.

2. Purpose

- a. Desiring synergy between their independently programmed activities, the Participants intend coordination under this Memorandum of Understanding ("MOU") to advance their mutual interests in nanotechnology and renewable energy materials.

- b. The purpose of this MOU is to support the development of a consortium of public and private entities independently pursuing fundamental and pre-competitive research in the area of renewable energy materials and nanotechnologies, and coordination to support education and training programs that enhance these efforts.
- c. Coordination of activities pursuant to this MOU is intended to be pursued on the basis of mutual benefit and equitable and fair treatment.

3. Scope of Planned Coordination

The Participants plan to focus on the following forms of coordination:

- a. Initiatives to reduce the cost of renewable energy technologies in Brazil and the United States in the areas of nanomaterials and nanotechnology;
- b. Available education, workforce development, and independently programmed training provided by the Brazil "Ciência sem Fronteiras" program in nanotechnology and nanoscience in renewable energy science to provide independent funding for Brazil and United States graduate research students (primarily for independently programmed collaborative activities through visits), and exchange of postdoctoral students and senior researchers;
- c. Efforts to train Brazilians (from the public through the government levels) on the potential and benefit of renewable energy-generated electricity and the development of independently programmed collaborative activities of United States and Brazilian national laboratories to cultivate policies for innovation in these areas;
- d. Opportunities for women in nanoscience and nanotechnology by recruiting and advancing participation by women and girls in exchange programs, and by coordinating and strengthening networks of women scientists to enhance independently programmed technical collaborative activities and mentorship opportunities; and
- e. Independently programmed policy analysis and assessment and the assessment of new nanotechnology and renewable energy materials technologies for the Brazil markets.

4. Funding

Unless otherwise determined by writing, each Participant is to be responsible for the costs it incurs in participating in the coordination contemplated by this MOU, including all administrative costs, overhead expenses, labor costs, insurance costs, travel expenses and similar costs.

5. Visits and Assignment of Personnel

- a. Each Participant is to be responsible for its own personnel in relation to visits and assignments to facilities of the other Participants.
- b. Each Participant's personnel are expected to adhere to the standard regulations, policies, and procedures of the host institution in carrying out coordination of independently programmed collaborative activities under this MOU, including conditions of cooperation and decorum, conditions of security and safety, and all other terms under which personnel are authorized to participate in activities at the host institution.
- c. Each Participant is to be solely responsible for defraying the expenses of its personnel while visiting or on assignment to another Participant's facility.
- d. Each Participant, consistent with its applicable policy, is expected to provide adequate health and medical insurance for its personnel while visiting or on assignment to another Participant's facility.
- e. Each visit or assignment of a Participant's personnel is to be the subject of an appropriate written agreement or arrangement between the sending and host institutions. To the extent possible, CU-B should assist the Brazilian Participants' personnel to request visas for entry into the United States.

6. Principal Points of Contact

- a. The principal points of contact for coordination under this MOU are identified below.

National Renewable Energy Laboratory (NREL)

Name	William Tumas
Title	Associate Lab Director, Materials and Chemical Science and Technology
Address	15301 Denver West Parkway, Golden, CO 80401 USA
email	Bill.Tumas@nrel.gov
Phone	303-384-7955

Regents of the University of Colorado Boulder (CU-B)

Name	William Lewis
Title	Director of the Renewable and Sustainable Energy Institute, A Joint Institute between CU-Boulder and NREL
Address	027 UCB, Suite 208, Fleming Building Boulder, CO 80309-0027 USA
email	william.lewis@colorado.edu
Phone	303-492-6378

Brazilian Center for Research in Energy and Materials (CNPem)

Name	Kleber Gomes Franchini
Title	Director General <i>Pro Tempore</i>
Address	Rua Giuseppe Maximo Scolfaro, 10.000 – Polo II de Alta Tecnologia, Caixa Postal 6192 – CEP 13083-970 Campinas/SP, BRAZIL
email	kleber.franchini@lnbio.cnpem.br
Phone	+55 19.3512.1011

National Council for Scientific and Technological Development of Brazil
Conselho Nacional de Desenvolvimento Científico e Tecnológico
(CNPq)

Name	Guilherme Melo
Title	Director of Engineering, Sciences, Humanities and Social Sciences
Address	SHIS QI 1 Set B - Block C, 2nd Floor; Building Santos Dumont, Lago Sul, Brasilia – DF, CEP: 71605-170 BRAZIL
email	gmelo@cnpq.br
Phone	+61 3211-9850 / 9851

National Council for the State Funding Agencies
Conselho Nacional das Fundações Estaduais de Amparo à Pesquisa
(CONFAP)

Name	Sergio Luiz Gargioni
Title	Presidente do Conselho Nacional das Fundações Estaduais de Amparo à Pesquisa (CONFAP)
Address	Setor Hoteleiro Sul, Quadra 6Ed. Brasil 21, Conj A, Bloco E, Sala 1115Asa Sul, CEP 70322-915 - Brasília/DF
Email	presidente@confap.org.br
Phone	+55 61 3039 9449

- b. No Participant is to use the name of any other Participant or its employees in promotional activities with reference to the coordination arising from this MOU without prior written approval of the Participant whose name is sought to be used.

7. Disclosure of Information

Each Participant intends to coordinate independently programmed collaborative activities in a manner which facilitates exchanges of non-proprietary information.

8. Intellectual Property

Activities which may involve sharing of proprietary information and transfer of rights and interest in intellectual property are excluded from the purview of this MOU. In the event it becomes necessary to share proprietary

information or mutually decided to engage in activities that may give rise to the creation of intellectual property, the Participants intend to conclude an appropriate written agreement(s) for the protection and allocation of intellectual property and the protection of business proprietary information.

9. Resolution of Differences

Any difference between or among the Participants which may arise during the pursuit of this MOU should be resolved by discussion or exchange of correspondence between the Participants concerned.

10. Future Joint Collaborations

- a. This MOU does not create legal rights or binding obligations between or among the Participants. It serves only to memorialize the Participants' intention to coordinate the stated independently programmed activities on a collaborative basis.
- b. If the Participants decide to undertake joint research and development projects, they intend to develop an appropriate written contract for each collaboration project, setting out each Participant's contribution, deliverables, responsibilities, and intellectual property rights and obligations.

11. Commencement, Modification, Discontinuation

- a. Coordination under this MOU is to commence upon signature and continue for a period of 3 years, at which time it may be renewed for additional periods of time.
- b. This MOU may be modified at any time in writing by the Participants' mutual consent.
- c. The Participants may discontinue coordination under this MOU at any time in writing by their mutual consent. Alternatively, a Participant that wishes to discontinue its participation in this MOU should endeavor to provide the other Participants with 60 days' written notice to the other Participants.
- d. The withdrawal of either (i) NREL or (ii) all of the Brazilian Participants operates to discontinue this MOU.

Signed in five originals in the English and Portuguese languages.

Signature Dem Lwiz

Director, NREL
President, Alliance for Sustainable Energy,
LLC

**BRAZILIAN CENTER FOR RESEARCH IN
ENERGY AND MATERIALS:**

Kleber-Frauchini
Signature


Kleber Gomes Franchini
Director General *Pro Tempore*

THE REGENTS OF THE UNIVERSITY OF COLORADO,
a body corporate, on behalf of
THE UNIVERSITY OF COLORADO BOULDER:

Signature Frank Moore

**Provost and Executive Vice Chancellor
for Academic Affairs**

**NATIONAL COUNCIL FOR SCIENTIFIC AND
TECHNOLOGICAL DEVELOPMENT OF BRAZIL:**


Glaucius Oliva
President

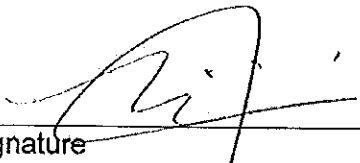
Date: _____
Place: Brasilia

Approved as to Legal Sufficiency
Office of University Counsel

By E. U. Strehle-Henson
Elvira Strehle-Henson
Special Assistant Attorney General

Date: 13 Oct. 1964

**NATIONAL COUNCIL FOR THE STATE FUNDING
AGENCIES:**


Signature

Sergio Luiz Gargioni

President

Date: OCT 03/ 2014
Place: Brasilia