

## ***International Collaboration Data Gathering***

The Women University of Azad Jammu and Kashmir (WUAJ&K) Bagh is in international collaboration with several organizations including universities and research organizations.

The letter of collaboration from different organizations are provided on next pages.

- 1. Mexican Materials Research Corporation (COMIMSA), Mexico***
- 2. Federal University of Piau  (UFPI), Brazil***
- 3. Federal University of Rio Grande do Norte (UFRN), Brazil***



## Corporación Mexicana de Investigación en Materiales S.A. de C.V.

2019 "Año del Caudillo del Sur, Emiliano Zapata"

Saltillo, Coahuila, December 20 2019  
Subject: Availability of laboratory equipment

**To whom it may concern:**

It is a pleasure for me to comment that during the last years your server **Dr. Díaz-Guillén** and the **Surface Engineering Group** of COMIMSA, have been working in scientific investigations in very close collaboration with **Dr. Muhammad Naeem**, who currently working as Assistant Professor of Physics in the Women University of Azad Jammu And Kashmir, Bagh, AJ&K. As a result of this collaborative work, several scientific papers has been generated and published in scientific prestigious international journals.

I also want to express that due to personal collaborative work and good institutional relationships, here in COMIMSA, a governmental materials research center, Dr. Naeem has access to several materials characterization equipment, among which stand out:

- Scanning Electron Microcopy equipped with EDS, EBSD and WDS techniques.
- X-ray diffraction technique in normal, grazing incidence and high temperature modes.
- Pin on Disk Tribometer with capacity for register friction coefficient and carry wet tests at different normal loads and test velocities.
- Nano indentation technique with capacity to carry cyclic tests at variables frequency, and to determinate mechanical moduli.
- Vickers, Rockwell and Brinell scales hardness.
- Equipment for metallic samples preparation and metallographic analysis.

As a request of Dr. Naeem, the present is extended in Saltillo Coahuila, México in December 2019. Please contact me for any additional information.

Sincerely,

Dr. Juan Carlos Díaz-Guillén  
Surface Engineering Group Researcher  
COMIMSA-CONACYT Catedratic  
jcarlos@comimsa.com  
Ph. +52 (844) 4113200 Ext 1320



Corporación Mexicana  
de Investigación en Materiales  
ESTUDIOS DE POSGRADO



**FEDERAL UNIVERSITY OF PIAUÍ**  
**MATERIALS SCIENCE AND ENGINEERING**  
**GRADUATE PROGRAM**  
**Campus “Ministro Petrônio Portella” – Bairro Ininga**  
**64.049-550 – Teresina – Piauí – Brazil**



Date: December 19th, 2019

To whom it may concern,

I, Rômulo Ribeiro Magalhães de Sousa, certificate that we have X-Ray Diffractometer, Scanning Electron Microscope, Raman Spectrometer, Friction and Wear Measurement Equipment, Hardness Testing Equipment and other techniques for characterization of surfaces. All techniques are available, and we can collaborate with Dr. Muhammad Naeem, Assistant Professor of Physics, Women University of Azad Jammu and Kashmir University, Bagh, Pakistan in any project to be proposed.

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Prof. Dr. Rômulo Ribeiro Magalhães de Sousa

Prof. Dr. Rômulo Ribeiro M. de Sousa  
Universidade Federal do Piauí  
Curso de Engenharia Mecânica  
Matr.: SIAPE: 6276167



**FEDERAL UNIVERSITY OF RIO GRANDE DO NORTE  
MECHANICAL ENGINEERING GRADUATE PROGRAM  
MECHANICAL ENGINEERING DEPARTMENT**

**DECLARAÇÃO**

Date: January 14th, 2020

To whom it may concern,

I, Thércio Henrique de Carvalho Costa, certificate that we have X-Ray Diffractometer, Scanning Electron Microscope, Raman Spectrometer, Friction and Wear Measurement Equipment, Hardness Testing Equipment, FTIR Spectroscopy, UV Spectrometer, Contact angle and surface tension, Atomic Force Microscopy, Thermal analysis and Calorimetry (TGA, DSC) and other techniques for characterization of surfaces. All techniques are available, and you can collaborate with Dr. Muhammad Naeem in any project to be proposed.

Prof. Dr. Thércio Henrique de Carvalho Costa  
Head of Plasma processing materials Laboratory