

## REQUEST FOR PROPOSAL (RFP)

### 1. INVITATION

The National Center for Research in Energy and Materials – **CNPEM** invites your company to participate in this Request for Proposal for one (1) optical research microscope for the inspection, analysis, and documentation of samples used in the field of Materials Science and Engineering, including metallic, ceramic, polymeric, and composite materials, thin films, coatings, and microfabricated devices.

### 2. CONTEXT

The National Center for Research in Energy and Materials (**CNPEM**) is a private non-profit organization supervised by the Ministry of Science, Technology, and Innovation (**MCTI**). Located in Campinas, SP, CNPEM houses four world-class laboratories open to the scientific and business community:

- **National Synchrotron Light Laboratory (LNLS)**, operating the only synchrotron light source in Latin America – the new Brazilian fourth-generation accelerator, Sirius – used for analysis of various organic and inorganic materials;
- **National Biosciences Laboratory (LNBio)**, conducting cutting-edge research in the life sciences, focusing on biotechnology and pharmaceuticals;
- **National Biorenewables Laboratory (LNBR)**, dedicated to biotechnological solutions for the sustainable development of advanced biofuels, biochemicals, and biomaterials using Brazilian biomass and biodiversity;
- **National Nanotechnology Laboratory (LNNano)**, performing research on advanced materials with high economic potential for the country.
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CNPEM promotes a research and innovation environment in the areas of Health, Energy and Renewable Materials, Agricultural and Environmental Sciences, and Quantum Technologies. Since 2022, with the support of the Ministry of Education (**MEC**), CNPEM also offers an interdisciplinary higher education program through the **ILUM School of Sciences**, focusing on Science, Technology, and Innovation. This program provides full-time, free education fully immersed in CNPEM's research environment.

For more information, visit: [www.cnpem.br](http://www.cnpem.br)

### 3. GENERAL INFORMATION

Proposals and relevant documentation should be sent via e-mail to the purchasing contact:

Name: Danilo Carlos de Sousa

E-mail: [danilo.sousa@cnpem.br](mailto:danilo.sousa@cnpem.br)

Technical evaluation contact:

Name: Angelo Luiz Gobbi

E-mail: [angelo.gobbi@lnnano.cnpem.br](mailto:angelo.gobbi@lnnano.cnpem.br)

#### 4. SCHEDULE

| Date                  | Event                               |
|-----------------------|-------------------------------------|
| 06/08/2026            | RFP Issuance                        |
| 03/09/2026            | Proposal submission deadline        |
| 04/09/2026-10/09/2026 | Proposal evaluation period          |
| 15/09/2026            | Expected issuance of purchase order |

#### 5. RELATED DOCUMENTS

The following attachments are integral parts of this RFP (previously sent to participants):

- List of items
- CNPEM website publication

#### 6. PROCEDURES

##### PRICE PROPOSAL REQUIREMENTS

- Commercial Proposals must be submitted separately;
- Full identification and address of the participant;
- Price table with unit and total values, expressed numerically and in words, excluding financial charges or adjustments;
- Minimum payment term: 30 days after issuance of the invoice or Credit Card;
- Delivery timeline for the items;
- Delivery terms (Incoterms);
- Proposal validity: 30 days from the submission date.

##### EVALUATION CRITERIA

- Document review;
- Commercial evaluation – price, payment terms, delivery time, warranty.

##### INVOICING AND PAYMENT

- Items invoices: issued according to Purchase Order milestones; payment as agreed.

#### 7. ADDITIONAL INFORMATION

Failure to comply with the requirements of this document exempts CNPEM from any penalties and may lead to the rejection of materials or services in cases of discrepancies or non-compliance. Invoices must contain banking information and be sent to **comex@cnpem.br** at least 28 days prior to the due date.

#### 8. BILLING AND DELIVERY INFORMATION

##### CENTRO NACIONAL DE PESQUISA EM ENERGIA E MATERIAIS – CNPEM

Rua Giuseppe Máximo Scolfaro, 10.000 – Polo II de Alta Tecnologia

CEP: 13083-100 – Campinas/SP, Brazil

CNPJ: 01.576.817/0001-75

- Include the Purchase Order or Contract number on the invoice;
- E-mail for invoice submission: **comex@cnpem.br**
- Materials receiving hours:
  - 08:30 AM to 11:30 AM
  - 01:00 PM to 04:30 PM

# Campinas, August 5, 2026

## TECHNICAL SPECIFICATION

### Research Optical Microscope for Materials Inspection and Characterization

#### 1. Scope

Supply of one (1) new research-grade optical microscope intended for the inspection, analysis, and documentation of samples used in Materials Science and Engineering, including metallic materials, ceramics, polymers, composites, thin films, coatings, and microfabricated devices.

The equipment shall be brand new, of current production, unused, and part of the manufacturer's current product portfolio for laboratory research applications.

#### 2. Eligible Manufacturers

The microscope shall be manufactured by a company internationally recognized to produce scientific research microscopes, such as Zeiss, Leica Microsystems, or other manufacturers offering equivalent technological standards and performance.

The manufacturer shall have:

- An official commercial representative in Brazil;
- An authorized technical service center located in Brazil;
- Guaranteed availability of spare parts for a minimum period of ten (10) years.

Compliance shall be demonstrated through official documentation issued by the manufacturer or its authorized representative.

#### 3. Minimum Technical Requirements

The microscope shall meet or exceed the following minimum specifications.

##### 3.1 Optical System

- Infinity-corrected optical system.
- Upright microscope capable of both reflected-light and transmitted-light observation.
- Plan Apochromatic (Plan Apo), Apochromatic, or equivalent high-performance optical system.
- Ergonomic trinocular observation head.
- Adjustable interpupillary distance.

- Diopter adjustment on at least one eyepiece.

### 3.2 Eyepieces

- Two (2) 10× eyepieces.
- Minimum field number (FN) of 22 mm.

### 3.3 Objectives

The microscope shall be supplied with high-resolution plan objectives including, at minimum:

- 5×
- 10×
- 20×
- 50×
- 100×

The supplied objectives shall provide a total magnification of up to **1000×** when used with the supplied eyepieces.

### 3.4 Objective Eyepiece

- Precision manual or motorized revolving nosepiece.
- Capacity for at least five (5) objectives.

### 3.5 Mechanical Stage

- Precision mechanical stage.
- X-Y movement.
- Minimum travel of 75 mm × 50 mm.
- Fine positioning controls for accurate sample manipulation.

### 3.6 Focusing System

- Coaxial coarse and fine focus adjustment.
- Fine focus suitable for high-magnification observation.
- Focus stop mechanism to protect objectives and samples.

### 3.7 Illumination

- High-stability LED illumination or equivalent.

- Continuous intensity adjustment.
- Köhler illumination for transmitted light.
- Reflected-light illumination for brightfield observation.

### 3.8 Observation Techniques

The microscope shall support, at minimum:

- Reflected-light Brightfield;
- Transmitted-light Brightfield;
- Polarized Light;
- Darkfield.

Future upgrade capability (desirable but not mandatory) for:

- Differential Interference Contrast (DIC);
- Fluorescence.

### 3.9 Condenser

- Abbe condenser or superior.
- Numerical aperture compatible with 100× objective operation.

### 3.10 Digital Imaging System

The microscope shall be supplied with an integrated or external color digital camera including:

- Minimum resolution of 12 megapixels;
- USB 3.0 or higher interface;
- Image acquisition software with free software updates;
- Dimensional measurement tools;
- Calibration capability;
- Still image acquisition;
- Video recording capability;
- Export of images in TIFF, PNG, and JPEG formats.

The software shall be fully compatible with Microsoft Windows 11 or later.

### 3.11 Performance



The optical system shall provide high-resolution images with excellent contrast and accurate color reproduction suitable for scientific documentation and surface inspection of engineering materials.

#### **4. Electrical Requirements**

- Input voltage: 100–240 VAC;
- Frequency: 60 Hz;
- Automatic voltage selection (autoranging) or universal power supply.

#### **5. Standard Accessories**

The following items shall be included:

- Protective dust cover;
- Power cable;
- Operation manual;
- Basic maintenance tools;
- Original manufacturer software;
- Permanent software license, when applicable.

#### **6. Warranty**

The equipment shall be covered by a minimum warranty period of twelve (12) months against manufacturing defects.

#### **7. Technical Support**

The supplier shall provide evidence of:

- Authorized technical service available in Brazil;
- Availability of spare parts;
- Qualified technical support.

#### **8. Training**

The supplier shall provide operational training, either on-site or remotely, covering installation, routine operation, image acquisition, and preventive maintenance.

#### **9. Evaluation Criteria**

The contract shall be awarded to the **lowest priced technically compliant proposal**.



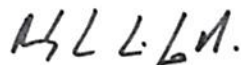
Offers from different manufacturers shall be accepted, provided that the proposed equipment fully complies with all technical requirements described herein and demonstrates optical performance, imaging quality, reliability, and functionality equivalent to internationally recognized research-grade microscopes.

#### 10. Procurement Process

This equipment will be acquired through an **international direct import process**.

The supplier shall provide all technical documentation required to demonstrate compliance with the specifications described in this document.

Technical brochures, catalogs, datasheets, user manuals, and other supporting documentation may be requested during the technical evaluation of the proposals.



Angelo Luiz Gobbi



Rodrigo Barbosa Capaz  
Diretor  
Laboratório Nacional de Nanotecnologia - LNNano



