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**SOLICITATION AMENDMENT  
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise  
indicated, all other terms and conditions of the Solicitation  
remain the same.

Ce document est par la présente révisé; sauf indication contraire,  
les modalités de l'invitation demeurent les mêmes.

**Comments - Commentaires**

**Vendor/Firm Name and Address**

Raison sociale et adresse du  
fournisseur/de l'entrepreneur

**Issuing Office - Bureau de distribution**

Public Works and Government Services / Travaux  
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Kingston Procurement  
Des Acquisitions Kingston  
86 Clarence Street, 2nd floor  
Kingston  
Ontario  
K7L 1X3

<b>Title - Sujet</b> ATOMIC FORCE MICROSCOPE	
<b>Solicitation No. - N° de l'invitation</b> W0114-175347/A	<b>Amendment No. - N° modif.</b> 001
<b>Client Reference No. - N° de référence du client</b> W0114-175347	<b>Date</b> 2016-11-03
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$KIN-508-7032	
<b>File No. - N° de dossier</b> KIN-6-46133 (508)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2016-12-06</b>	
<b>Time Zone</b> Fuseau horaire Eastern Standard Time EST	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Weaver, Tammy	<b>Buyer Id - Id de l'acheteur</b> kin508
<b>Telephone No. - N° de téléphone</b> (613) 484-1809 ( )	<b>FAX No. - N° de FAX</b> (613) 545-8067
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

Instructions: See Herein

Instructions: Voir aux présentes

<b>Delivery Required - Livraison exigée</b>	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

Solicitation No. - N° de l'invitation  
W0114-175347/A  
Client Ref. No. - N° de réf. du client  
W0114-17-5347

Amd. No. - N° de la modif.  
File No. - N° du dossier  
KIN-6-46133

Buyer ID - Id de l'acheteur  
KIN508  
CCC No./N° CCC - FMS No./N° VME

## Amendment #001

The following questions have been submitted for Atomic Force Microscope.

### 1. What is the application for this AFM?

Answer:

This microscope will be used to take 3-dimensional images of material surfaces on the nano-scale in order to characterize the shape, depth and other features of optical nanostructures that are inscribed using lasers in our laboratory. These nanostructures are used for enhancing the efficiency of solar cells, biosensors, light emitting diodes, as well as other light communication and photonic technologies. Obtaining such detailed information on the sample surfaces would allow us to improve our laser nanofabrication techniques as well as expand our knowledge on the physics of the material surfaces.

### 2. What types of measurements are going to be performed?

Answer:

We anticipate taking full advantage of current technologies to obtain as much information as possible from the surface features and physical characteristics of a variety of materials studied in our lab.

### 3. Could you provide more information on sample features?

Answer:

The sample features consist of surface striations on the nano-scale. These consist of either linear sinusoidal gratings, or non-linear and spherical nanostructures.

### 4. What is the budget for this purchase?

Answer:

As this is a competitive requirement, it is not normal practice for PWGSC to release the budget for the requirement.

**5. Tip-scanning configuration” Why the system should be tip scanning?**

**A tip scanning system typically has a higher mass of scanner, which slows the Z feedback loop servo. Do you accept decoupled XY and Z scanner, which minimizes the mass of Z scanner to provide faster Z feedback response?**

Answer:

A tip-scanning configuration allows more flexibility in our measurements. Any other configuration is not acceptable.

**6. “Single axis vertical engage mechanism” Could you explain more?**

Answer:

Multiple axes vertical engage mechanisms will not be accepted. Single-axis mechanism improves the engage location accuracy providing superior navigation capabilities over the sample.

**7. What is the maximum sample size?**

Answer:

Sample size - minimum 150 mm diameter and minimum 15 mm thick.

**8. What is the environment for installation of this system?**

Answer:

The AFM is going to be installed in a university optics research laboratory.

**9. Is it going to be installed in a cleanroom or fab?**

Answer:

The AFM is not going to be installed in a cleanroom. It will be installed in a room where other optical instruments are present. There is not going to be any excessive dust.

**10. "Capable of rotating about its centroid". Should sample rotation around its centroid be done inside the AFM chamber? Or can it be done using a wafer handler?**

Answer:

The AFM sample stage must be able to rotate inside the AFM chamber.

**11. "Direct control over tip-sample imaging force." We offer a non-contact mode imaging mechanism instead?**

Answer:

Non-contact mode provides low resolution and can also be hampered by a contaminant layer. Therefore, it is not acceptable. A tapping mode is absolutely needed.

**12. Tip-sample imaging force (controlled or not) will damage the tip and lead to inconsistent data. Would you waive this requirement?**

Answer:

The requirement for direct control over tip-sample imaging force is not going to be waived.

**13. "Phase adjustment" Could you explain why this is required?**

Answer:

The phase adjustment is required for maximum sensitivity as well as optimal operation of the system.

**14. "Cantilever holder for each imaging mode". Can we offer a system with one cantilever holder that can support all of the required imaging modes in this RFP?**

Answer:

Yes, a cantilever holder that supports all required modes is acceptable.

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**15. "Pneumatic vibration isolation table". Why is this a requirement?**

**We offer active vibration isolation table, which do much better than pneumatic ones and does require almost no maintenance. Can this requirement be waived?**

Answer:

Yes, the requirement for a pneumatic isolation table can be substituted with an active vibration isolation table.