Contract

CAN - sSNOM for University of Manchester

National Physical Laboratory

F03: Contract award notice
Notice identifier: 2022/S 000-036071
Procurement identifier (OCID): ocds-h6vhtk-037636
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Section I: Contracting authority

I.1) Name and addresses

National Physical Laboratory

Hampton Road

Teddington

TW11 0LW

Contact

Nina Heath

Email

nina.heath@npl.co.uk

Country

United Kingdom

Region code

UK - United Kingdom

Internet address(es)

Main address

www.npl.co.uk

Buyer's address

www.npl.co.uk

I.4) Type of the contracting authority

Body governed by public law

I.5) Main activity

Other activity

Scientific Research

Section II: Object

II.1) Scope of the procurement

II.1.1) Title

CAN - sSNOM for University of Manchester

II.1.2) Main CPV code

- 38000000 - Laboratory, optical and precision equipments (excl. glasses)

II.1.3) Type of contract

Supplies

II.1.4) Short description

NPL has a requirement for a scattering-type near-field optical microscope (VIS-neaSCOPE) that enables simultaneous background-free imaging and spectroscopy on nanometre length scales in the visible range.

II.1.6) Information about lots

This contract is divided into lots: No

II.1.7) Total value of the procurement (excluding VAT)

Value excluding VAT: £395,278.96

II.2) Description

II.2.3) Place of performance

NUTS codes

- UK - United Kingdom

Main site or place of performance

Manchester, UK

II.2.4) Description of the procurement

A scattering-type near-field optical microscope (VIS-neaSCOPE) that enables simultaneous background-free imaging and spectroscopy on nanometre length scales in the visible range.

- Patented parabolic mirror design for focusing and collection of light

- Patented dual-port design to allow two beams of light to be focused on the atomic force microscope (AFM) tip for nanoscale imaging and spectroscopy

- Patented signal processing for optical background suppression

- Patented pseudo-heterodyne detection (PsHEt) technology for background suppression

- Patented interferometric design (nano-FTIR) for background-free optical detection technology and simultaneous detection of optical amplitude and phase and hyperspectral imaging

- Patented high speed holography (HSH) for multispectral imaging

- Patened phase shifting (PhS) detection to extract relative phase

- Optimised scanning probe microscope system that can be combined with mechanical and electrical measurements

- Built-in optical imaging and spectroscopy software modules, as well as data visualisation and analysis software

- Position sensors for motorised parabolic mirror axes to enable alignment-free focusing of a laser beam to the AFM tip

- Visible and NIR illumination units, which can be integrated and coupled into both the room-temperature and cryogenic temperature s-SNOM system.

II.2.5) Award criteria

Quality criterion - Name: Technical / Weighting: 80%

Price - Weighting: 20%

II.2.11) Information about options

Options: No

II.2.13) Information about European Union Funds

The procurement is related to a project and/or programme financed by European Union funds: No

Section IV. Procedure

IV.1) Description

IV.1.1) Type of procedure

Award of a contract without prior publication of a call for competition in the cases listed below

- The services can be provided only by a particular economic operator for the following reason:
  - absence of competition for technical reasons

Explanation:

Absence of competition for technical reasons. VEAT ref: 2022/S 000-029139

Attocube is the only company worldwide, who manufactures a scattering-type near-field optical microscope (VIS-neaSCOPE) that enables simultaneous background-free imaging and spectroscopy on nanometre length scales in the visible range. Their exclusive design works with the following patents:

- Patented parabolic mirror design for focusing and collection of light

- Patented dual-port design to allow two beams of light to be focused on the atomic force microscope (AFM) tip for nanoscale imaging and spectroscopy

- Patented signal processing for optical background suppression

- Patented pseudo-heterodyne detection (PsHEt) technology for background suppression

- Patented interferometric design (nano-FTIR) for background-free optical detection technology and simultaneous detection of optical amplitude and phase and hyperspectral imaging

- Patented high speed holography (HSH) for multispectral imaging

- Patend phase shifting (PhS) detection to extract relative phase

These patents and the exclusive design have enabled the VIS-neascope system to conduct amplitude and phase-resolved vector field, reflection and absorption mapping with nanoscale spatial resolution. It is currently the only system on the market that enables dual-port operation combined with a high NA parabolic mirror, which is essential

for low SNR pump-probe measurements in the visible range. The VIS-neascope system is also the only system offering pseudoheterodyne background-free detection of the amplitude and phase of the near-field signal up to the 5th harmonic order, which is another essential requirement for s-SNOM in the visible range.

In addition, the vis-neaSCOPE offers the following unique technical specifications:

- Optimised scanning probe microscope system that can be combined with mechanical and electrical measurements

- Built-in optical imaging and spectroscopy software modules, as well as data visualisation and analysis software

- Position sensors for motorised parabolic mirror axes to enable alignment-free focusing of a laser beam to the AFM tip

- Visible and NIR illumination units, which can be integrated and coupled into both the room-temperature and cryogenic temperature s-SNOM system.

The system is also flexible and can be upgraded to operate in other wavelength ranges (out to THz range), perform electrical measurements, nano-PL, nano-Raman and photothermal expansion mapping in the future.

In particular, neaspec is the only company who can upgrade the existing cryogenic s-SNOM system (cryo-neaSCOPE) based at University of Manchester and integrate a visible illumination unit to perform nanoscale imaging and spectroscopy at low temperature.

IV.1.8) Information about the Government Procurement Agreement (GPA)

The procurement is covered by the Government Procurement Agreement: Yes

IV.2) Administrative information

IV.2.1) Previous publication concerning this procedure

Notice number: 2022/S 000-029139

Section V. Award of contract

Title

sSnom for UoM

A contract/lot is awarded: Yes

V.2) Award of contract

V.2.1) Date of conclusion of the contract

29 November 2022

V.2.2) Information about tenders

Number of tenders received: 1

Number of tenders received from SMEs: 1

Number of tenders received by electronic means: 1

The contract has been awarded to a group of economic operators: No

V.2.3) Name and address of the contractor

attocube systems AG

Eglifinger Weg 2, Haar, Bayern, 85540, Germany

Haar

85540

Country

Germany

NUTS code

- DE - Germany

The contractor is an SME

No

V.2.4) Information on value of contract/lot (excluding VAT)

Total value of the contract/lot: £395,278.96

Section VI. Complementary information

VI.4) Procedures for review

VI.4.1) Review body

National Physical Laboratory

Hampton Road

Teddington

TW11 0LW

Telephone

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United Kingdom