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Award

## **OrbiSIMS – simultaneous high-mass resolving power and high-spatial resolution mass spectrometry imaging for biological and advanced materials characterisation**

National Physical Laboratory

F15: Voluntary ex ante transparency notice

Notice identifier: 2023/S 000-002057

Procurement identifier (OCID): ocids-h6vhtk-0399e3

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### **Section I: Contracting authority/entity**

#### **I.1) Name and addresses**

National Physical Laboratory

Hampton Road

Teddington

TW11 0LW

#### **Contact**

Mandy Morgan

#### **Email**

[mandy.morgan@npl.co.uk](mailto:mandy.morgan@npl.co.uk)

#### **Telephone**

+44 2089436731

**Country**

United Kingdom

**Region code**

UK - United Kingdom

**Internet address(es)**

Main address

[www.npl.co.uk](http://www.npl.co.uk)

**I.4) Type of the contracting authority**

Body governed by public law

**I.5) Main activity**

Other activity

Research

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**Section II: Object****II.1) Scope of the procurement****II.1.1) Title**

OrbiSIMS – simultaneous high-mass resolving power and high-spatial resolution mass spectrometry imaging for biological and advanced materials characterisation

**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 pioneered the next generation OrbiSIMS technology introduced in detail in Nature

Methods (2017, PMID: 29131162). The instrument is equipped with a time-of-flight mass spectrometer (ToF) for high-speed imaging of large areas or in 3D. It is also equipped with a high-field Orbitrap mass spectrometer with a mass resolving power of >240,000 at  $m/z$  200 and a mass accuracy of approximately 1 ppm. Both ToF and Orbitrap analysers can be used simultaneously or separately. The OrbiSIMS shall be able to carry out cryogenic analysis under ultra-high vacuum with sample holder temperatures below  $-150$  °C.

#### **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: 2,254,326.75 EUR

### **II.2) Description**

#### **II.2.3) Place of performance**

NUTS codes

- UK - United Kingdom

#### **II.2.4) Description of the procurement**

The OrbiSIMS instrument shall be equipped with a time-of-flight mass spectrometer (ToF) for high-speed imaging of large areas or in 3D. It shall also be equipped with a high-field Orbitrap mass spectrometer with a mass resolving power of >240,000 at  $m/z$  200 and a mass accuracy of  $\sim 1$  ppm. The instrument shall be equipped with 3 primary ion beams which are optimal for different materials systems. (1) A 20 kV gas cluster ion source with a spatial resolution 50 nA at 500 eV with a spatial resolution 25 nA. The OrbiSIMS shall be equipped for cryogenic analysis (sample holder temperature

#### **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

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## **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 procurement falls outside the scope of application of the regulations

Explanation:

The OrbiSIMS concept was created at NPL and the first prototype instrument was built in a collaborative project with IONTOF and ThermoFisher Scientific. The instrument was subsequently commercialised by IONTOF and sold as the Hybrid SIMS. IONTOF are the only manufacturer of this type of instrument. A number of features of the OrbiSIMS instrument are protected by international patents. Unique features of the OrbiSIMS instrument include:

1. Imaging of biomolecules from tissue using a gas cluster ion beam with a spatial resolution of 240,000 at m/z 200.
2. Depth resolution of 240,000 at m/z 200.
3. Depth resolution of 240,000 at m/z 200.
4. Cryogenic imaging (see requirement 1) with a sample holder temperature of

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

The procurement is covered by the Government Procurement Agreement: No

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## Section V. Award of contract/concession

A contract/lot is awarded: Yes

### V.2) Award of contract/concession

#### V.2.1) Date of conclusion of the contract

23 January 2023

#### V.2.2) Information about tenders

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

**V.2.3) Name and address of the contractor/concessionaire**

IONTOF GmbH

Heisenbergstr 15

Munster

48149

Country

Germany

NUTS code

- DE - Germany

The contractor/concessionaire is an SME

No

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

Lowest offer: 2,254,326.75 EUR / Highest offer: 2,254,326.75 EUR taken into consideration

**V.2.5) Information about subcontracting**

The contract/lot/concession is likely to be subcontracted

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## **Section VI. Complementary information**

### **VI.4) Procedures for review**

#### **VI.4.1) Review body**

NPL Management Ltd

Hampton Road

Teddington

TW11 0LW

Country

United Kingdom