Official Mississippi State University Logo


# INVITATION FOR BIDS OFFICE OF PROCUREMENT & CONTRACTS

## INSTRUCTIONS FOR BIDDERS

* 1. Sealed bids will be received in the Office of Procurement & Contracts, Mississippi State University, for the purchase of the items listed herein.
  2. All bids must be received in the Office of Procurement & Contracts on or before the bid opening time and date listed herein. Delivery of bids must be during normal working hours, 8:00 a.m. to 5:00 p.m. CST, except on weekends and holidays when no delivery is possible.
  3. Bidders shall submit their bids either electronically or in a sealed envelope.
     1. Sealed bids should include the bid number on the face of the envelope as well as the bidders’ name and address. Bids should be mailed to: 245 Barr Avenue, 610 McArthur Hall, Mississippi State, MS 39762.
     2. At this time we only accept non-ITS bids electronically. For electronic submission of bids, go to: <https://www.ms.gov/dfa/contract_bid_search>  
        and use the RFX number on the next page as your reference number.
  4. All questions regarding this bid should be directed to the Office of Procurement & Contracts at 662-325-2550.

## TERMS AND CONDITIONS

* 1. All bids should be bid “FOB Destination”
  2. Bidders must comply with all rules, regulations, and statutes relating to purchasing in the State of Mississippi, in addition to the requirements on this form. General Bid Terms and Conditions can be found here: <https://www.procurement.msstate.edu/procurement/bids/Bid_General_Terms_May_2019_V2.pdf>
  3. Any contract resulting from this Invitation for Bid shall be in substantial compliance with Mississippi State University’s Standard Contract Addendum: <https://www.procurement.msstate.edu/contracts/standardaddendum.pdf>

### Bid Number/RFX Number: ****20-68/RFX#3160003710**** Opening Date: ****July 8, 2020 @2:00 p.m.**** Description: ****Physical Vapor Deposition System****

#### Vendor Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Vendor Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Telephone Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Days the Offer is Firm: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Authorized Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

| **Item** | **Quantity** | **Description** | **Unit Price** | **Total Price** |
| --- | --- | --- | --- | --- |
| 1 | 1 | Physical Vapor Deposition System |  |  |

The setup must consist of following specifications

* Two 4 arm glove boxes built in a powder coated frame, and the two boxes must be connected through a T-type transfer chamber.
* One of the boxes must contain a customized spin-coater well equipped with a spin coater and a robust glass/transparent lid. The equipment must be programmable with multiple steps of spinning and must be capable of a wide range of rotational speeds (0 to 5000 rpm) and acceleration/deceleration times (0.1 s to 20 s increments). The spincoater must be able to allow the modifications in future such as appending an automated robotic dispensing system if required.
* The other box must be integrated with/integrateable to directly mount the deposition system (see specifications below).
* The gas management and drying system must be compatible with N2, Ar gases and with a capability of maintaining low levels of moisture (< 0.5 ppm) and O2 (<0.01 ppm) with measurement limits that exceed this need.
* The pressure in these boxes must be automated and controlled by an automatic purge valves and a dry vacuum pump (TriScroll Teflon diaphragm ~9cfm pump, with a pumping speed of at least 200 L/min, and ultimate vacuum of 10 millitorr). The pump must be able sustain all solvents including DMSO, DMF and halogenated solvents such as CHCL3, DCM and chlorobenzene

The deposition system

* must be attached to the glove box (described above) and allow the access from inside and outside the glove box to the interior of the system.
* The system must contain 6 thermal deposition sources and 4 sensors. Both sensors and source must be shielded to avoid cross contamination between the materials. The system must support the deposition of very thin ~1 nm to thick ~500 nm with highest precision.
* A wide range of materials from organics to metals will be explored for the deposition, therefore, the system must be capable to handle metals and organics etc.
* To pump down the chamber, it must have a high-speed Turbo Vacuum with speed at least 300 I/S and ultimate base pressure to ~10-7 Torr.
* The system must allow co-deposition process and be controlled by a user-friendly software controlled by a PC. The requirement of this deposition software is that all aspects of machine control, deposition control, and optical control must be highly automated and controlled by a unified recipe.
* All the PVD controllers must be manageable by a dedicated and included PC.

**Safety Requirements:**

Automated interlock system managed by a user-friendly software. The PVD setup must contain an emergency turn on and turn off options. The equipment must contain a chiller drum to cooldown the sensor heads. (add more specifics about rates of cooling etc.