



DEPARTMENT OF PHARMACEUTICAL SCIENCES & TECHNOLOGY  
MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY  
ਮਹਾਰਾਜਾ ਰਣਜੀਤ ਸਿੰਘ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ, ਬਾਦਲ ਰੋਡ, ਬਠਿੰਡਾ  
Dabwali Badal Road, Bathinda -151001  
(Established by Govt. of Punjab vide Punjab Act No. 5 of 2015)




Ref. No: MRSPTU PHARM

Date:

**Quotation for Purchase Process Refinement of iOS mobile application**

Dear Sir,

01. You are requested to quote the rates for the items shown in the Appendix 'A' separately attached to this letter. The rates must be quoted only on the attached paper as per our specifications.
02. Following shall be taken note of while quoting the rates:-
  - a) The rates will be F.O.R. (Deptt. of Pharmaceutical Sciences and Technology,) MRSPTU, Bathinda.
  - b) Delivery period of above work should be 3 months.
  - c) Warranty/Guarantee/All contractual obligations should be 3 years from day of operations.
  - d) Payment will be made after successful inspection of the item.
  - e) For research items, the relevant exemption certificate DSIR will be issued to the successful firm to charge GST @ 5% only, if applicable, otherwise GST will be charged at applicable rates.
  - f) Quotation received later than due date are liable to be ignored/rejected.
  - g) Quotation must be submitted on **LETTER HEAD** of the firm in the name of **REGISTRAR, MRSPTU, BATHINDA** with all particular duly signed with stamp in sealed envelope, any other format will not be acceptable.
  - h) The envelope must bear the word:-  
**"QUOTATION FOR" Purchase of Process Refinement of iOS mobile application**  
**Enquiry No. \_\_\_\_\_ As above dated \_\_\_\_\_**  
**Due on \_\_\_\_\_**  
**Address: As mentioned as point no. 04**  
**IMPORTANT:** -In the absence of information as required under 2(h) above, if an envelope is received & opened inadvertently, the university will not be responsible and the quotation may not be considered even if quoting lowest rates.
  - i) Please mention any other charges/conditions (if any).
  - j) Loose, tempered or incomplete quotation will not be considered.
  - k) Any other information as per requirement of indenter/department as Annexure I.
  - l) The quality of the items to be quoted should be best available in the market.
03. General Terms & Conditions are attached along with.
04. The quotations should reach the office of the Head of Deptt. of Pharmaceutical Sciences and Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda c/o Prof. Ashish Baldi by **25.10.2021 up to 5.00PM** by hand or post and same shall be opened at **10.00 AM** on 26.10.2021. Your representative may be present during the opening of the quotations.

  
\_\_\_\_\_  
Indenter/Lab Incharge

  
\_\_\_\_\_  
Head of Department

## **TERMS & CONDITIONS**

### **1. VICE CHANCELLOR RIGHTS:**

Vice Chancellor, MRSP TU, Bathinda reserves the rights of acceptance or rejection of any or all quotations. The discretion for increasing or decreasing of the quantities also rests with him. MRSP TU also not bind itself to accept the lowest price. In case of any dispute, the decision of Vice Chancellor, MRSP TU, Bathinda will be final & binding.

### **2. VALIDITY OF QUOTATIONS:-**

Quotations will be considered valid for 03 months from the date of quotation.

### **3. CORRESPONDANCE:**

No correspondence regarding acceptance/rejection of a quotation will be entertained.

### **4. SAMPLE/BRAND/MAKE/WEIGHT:-**

Sample where asked for, will invariably be made available and sent along with the quotations. However, Brand/Make/Weight etc. must be mentioned clearly in the quotations. Technical literature pamphlet should also be enclosed.

### **5. REJECTION:-**

Quotation not conforming to the set procedure as above will be rejected.

### **6. DISCOUNT/REBATES:-**

A Special discount rebate wherever admissible keeping in view that the supplies are being made for education purpose in respect of Public Institution of national importance may please be indicated.

### **7. DELIVERY PERIOD:-**

Minimum Period for delivery/job completion should be mentioned clearly.

### **8. GUARANTEE/WARRANTY:-**

Guarantee Warranty should be mentioned clearly.

MRSP TU shall not be held responsible for any postal delay in sending or late receipt of quotation. Quotation should be free from corrections & erasures.



## **Name of work: Process refinement of iOS mobile application for DST-SERB project related work**

### **PART I** **GENERAL TERMS AND CONDITION**

- a) Principal Investigator reserves the right to add/delete/modify the specifications in order to achieve the desired objectives of the research project as funded by DST-SERB as per the technical need with mutual consent of the firm
- b) The firm will provide all source code/programs/language statements / commands to the PI upon satisfactory completion of this work.
- c) All intellectual property rights/technical rights/ ownerships of the above said work will be solely remain with PI as Indentor.
- d) The firm will sign a confidentiality agreement with reference to outcomes of this work and will strictly abide by the same. In case of any breach suitable legal action may be initiated against the firm.
- e) **Eligibility of the firm:**  
**Firm should provide supporting documents to establish eligibility as per following criteria:**
  - i. The firm applying have at least completed/doing, in the last three financial years (i.e. current year and three previous financial years) one single work i.e. development of mobile application and maintenance.
  - ii. The firm should be registered.
- f) **Details of Work**  
On behalf of DST SERB project currently running under the Prof. Ashish Baldi as PI, MRSPTU invites the quotation for the work "**Process refinement of iOS mobile application**".
- g) **Specification of the developed Mobile Application**  
The detailed specification of the mobile application is in Part II.
- h) **Warranty and Maintenance of Mobile Application.**  
The mobile application will be under warranty period/Maintenance of 3 years after launching of the application.
- i) **Security Deposit**  
Security Deposit @10% of final cost which will be reimbursed on completion of maintenance/warranty period.





j) **Period of Completion**

Time period to complete the above said work is 3-months form date of award, in case of delay in input from the research team and or due to any technical reasons, the time can be extended mutually by PI and the firm.

k) **Progress Monitoring**

The firm applying will be required to give the PI, progress report of the work done. The program will be subject to alteration or modification at the direction of the PI, who may discuss such modifications or alterations as considered necessary.

l) **Training**

For smooth operation of mobile application proper training of its staff shall have to be provided at PI office. The rates will be F.O.R. MRSPTU, Bathinda

m) **Payment/Taxes**

- a. Rate of ST/VAT/GST if extra must be mentioned clearly. University will provide GST exemption certificate, as per approval of DSIR, Govt. of India, to levy GST @ 5% only.
- b. TDS, if any will be deducted as per Govt. Rules.
- c. In case you fail to deliver the task with-in the prescribed for such delivery, stipulated in the supply order, the delayed consignment will subject to will subject to 2% penalty per specification not completed per month or the part of month recoverable on the value of the task completed.

n) **Termination/Disputes**

- a. The registrar reserves the right to cancel the order without assigning any reasons. In case of any dispute decision of the vice chancellor shall be the final and binding on the both parties.
- b. All the disputes will be settled within the jurisdiction of the Head quarter of MRSPTU, Bathinda.



## PART II

### Specifications of Process refinement of iOS Mobile Application

#### **1. Development of reference image database on cloud server of reputed cloud providing firm.**

The reference database is capable to store the high- and low-resolution images of approx. 30 (as fixed by PI) different species of spices/herbs (Main biological source and their biological adulterant). Images for the same (Approx. 500 images of each spice) will be provided by the research team.

#### **2. Unique features Identification and Pattern Recognition**

##### **Unique feature**

Framework should be refined as per iOS that should be able to identify the unique features of different species of spices/herbs. Unique feature will be provided by the research team on timely basis.

##### **Pattern Recognition:**

Developed framework should BE validated for pattern recognition accuracy from the different unique feature of the spices. Pattern recognition involves the application of various machine learning/ deep learning algorithm for image analysis containing the unique features of the spices/herbs.

#### **3. Setup for Image processing, recognition, retrieval of the images.**

This setup should consist of following features

##### **a) Pre-Processing of Images**

As the database has variable resolution images, the network requires a constant input dimensionality. So down sampling of the images to a fixed resolution as per iOS requirement will also be performed in this stage. In order to train the network, subtraction of images with the mean values of each RGB channel and cropping of the images will be performed, if required. The decreasing of the number of training samples, which help us to improve the generalization of the network model under various testing conditions, will be executed in this stage.

Down/Enhance --- Noise removal --- Conditioning --- Cropping

##### **b) Recognition of Images**

In this stage, use of machine learning / Deep Learning methods as appropriate for samples / standard recognition is explored.

A type of machine learning / Deep Learning methods as appropriate should be refined for the image recognition. Selected methods as machine learning / Deep Learning as appropriate should consists of different stages such as Inclusion, training and testing/output stages.

Layer Analysis --- Weight Decay --- Momentum --- Learning Rates



c) Retrieval of Images

In this stage, training of iOS supportive platform for retrieval network / algorithm will be performed along with retrieval loss. This stage will help us to retrieve the similarity between similar and dissimilar images and search for the appearance between similar images under the condition that images belong to the same category.

Fine tuning----Accuracy---- Precision---Validation

**4. Development of framework that can perform include all the activities mentioned in the point 2 of the specification.**

The performance of the existing framework will be evaluated on the basis of the accuracy and precision of the image recognition by the proposed framework.

Pattern Recognition---Respective Unique features Identification--- Features Comparison with standard-- Decision

**5. Process refinement of iOS supportive application to be integrated with existing framework**

Mobile application development should be consisting of following features:

- a) Mobile application should be compatible on iOS (latest level). Developed application should be compatible or should be available on the Apple Store.
- b) Restructuring wire frame for each screens of the application on the advise of the research team, if needed.
- c) Graphic design modifications for attractive lookout for the developed application.
- d) Easy user Flow for easy handling of developed application
- e) Revising Information architecture of entire application development.
- f) Providing the guidelines for development of coding for development of application.
- g) Integration of task described in Point 1-4 in the mobile application
- h) Coding of application should be done in compatible language.
- i) Programming interactions with the research team and pre-launching testing and debug of the developed application.

**6. Stage wise improvements or revisions in developed on time-to-time basis on the recommendation of the research team.**

**7. Maintenance and development support for 3 years from completion of above said work.**

	<b>Name of item</b>	<b>Process refinement of iOS Mobile Application</b>
	<b>Name of Firm</b>	
<b>Sr. No.</b>	<b>Description</b>	<b>Details &amp; Page No. of related proofs attached</b>
1.	Full Address	
	1. Head Office	
	2. Branch Office (if any)	
2.	Name of Contact person	
	1. Mobile No.	
	2. E Mail ID	
3.	Telephone Number(s)	
4.	Firm GST No.	Attached (Y/N).....Pg no.....
5.	PAN NO.: - TAN NO.: -	Attached (Y/N).....Pg no.....
6.	Bank Name and address	
7.	Bank A/c No. and IFS Code	Attached (Y/N).....Pg no.....
8.	Proof of bidder having successfully delivered/ doing of similar works in the last three years.	Attached (Y/N).....Pg no.....
9.	Warranty/Maintenance Period (Mention Clearly)	3 Years
10.	Cost quotation as per given format in sealed envelope	Attached (Y/N).....Pg no.....
11.	Any other document(s) i. .... ii. ....	

**Note:**

1. In case of any clarification, firm shall provide required documents/reply within given time.
2. If any need arises to verify the scan copies from original, then the same will be produced by the firm before the opening of quotation which his quotation will be rejected.
3. Page Number /Serial Number may be given to each and every page of Quote and other documents attached. Mention Page Number, Wherever the copy(ies) of the document (s) are attached.
4. In case of non-fulfillment of any of the above information / document (s) Quote may be summarily rejected without giving any notice.

*Am*



"To be submitted in along with application form and other necessary documents"

APPENDIX- B

**QUOTATION**

To,  
The Registrar,  
MRSPTU, Bathinda

Name of Item:							
Sr. No.	Description / Specifications of item	Unit	Qty.	Basic Rate (in Rs.)	Discount, (if any)	GST (in %age)	Total Amount Including GST)

**Declaration**

I, \_\_\_\_\_, On the behalf of \_\_\_\_\_ certify that our firm is agreed on the terms and conditions given in this call for quotations.

Name of Bidder \_\_\_\_\_

Signature with stamp \_\_\_\_\_

20/11