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Application Summary

Competition Details

Competition Title:	MSFT Applications for 2021-2022
Category:	Internal Funding
Award Cycle:	2021-2022
Submission Deadline:	03/16/2021 10:00 AM

Application Information

Submitted By:	Udayabagya Halim
Application ID:	835
Application Title:	Gas Cells for Infrared Spectrometer
Date Submitted:	03/11/2021 11:13 AM

Personal Details

Applicant First Name:	Udayabagya
Applicant Last Name:	Halim
Applicant Department:	Chemistry
Email Address:	udayabagya.halim@csuci.edu
Phone Number:	
Who is the Staff Support for Project/Activity?:	Scott Duffer
Staff Support email:	scott.duffer690@csuci.edu

Application Details

Proposal Title

Gas Cells for Infrared Spectrometer

Brief Project Description

Purpose:

The Chemistry department owns an instrument called FTIR (Fourier Transform Infrared) Spectrometer. Currently, the department owns kits to analyze solids and liquid samples but does not own kits to analyze gaseous samples.

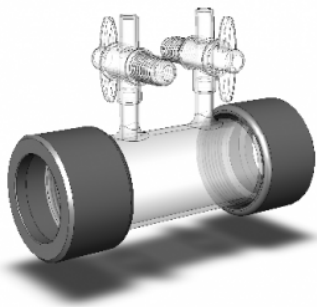


Figure 1. Typical FTIR gas cell

The purpose of this proposal is to purchase two FTIR Gas Cells with infrared-compatible optics. Two cells are ideal so that one can be used as a control, while the other served as a sample container.

Educational & Research uses:

The ability to measure gaseous samples expands significantly the instrument's capability.

For example, it can be used to analyze the presence of hydrogen, carbon, oxygen, nitrogen, and sulfur isotopes. The natural variations in the relative abundances of these isotopes can provide useful information in a wide variety of applications, such as forensics, food authenticity, environmental and paleoclimate research.

The instrument can also be used in various classes such as: General Chemistry, Physical Chemistry, Organic Chemistry, Quantitative Analysis, and various ESRM courses.

Figure 2. Detection of atmospheric $^{13}\text{CO}_2$ and $^{12}\text{CO}_2$ using FTIR in the Chem. Dept.

Amount of MSFT Funding Requested

4,000

Project/Activity Budget Detail

Priority	Item	Typical Cost
1	Two FTIR gas cells	\$900-1500 each*
2	Replacement optical windows	\$250-500 each

*Materials used in FTIR gas cells vary. ZnSe (Zinc Selenide) windows are optimal due to their chemical stability, physical durability, and wide transparency range. Less expensive materials are available, although they typically have drawbacks.

Will you receive funds from any other source(s)?

No

Other Funding Sources**Has this project or activity previously received MSFT funding?**

No

Acknowledgment

Fiscal Management

Project applicant/sponsor's unit or department may be responsible for incurred over and above what is funded through the MSFT. If support is requested for costs beyond initial award, or for use on activities or materials not included in approved proposals, the project sponsor must seek approval from the MSFT committee. The project applicant/sponsor will be responsible for managing purchases, transfers of funds, and all transactions related to approved projects

Please review MSFT webpage for information about the fund and its objectives before submitting your application.

**CSU Channel Islands
MSFT Proposed Budget
2020-2021**

Please layout in detail when various components of your plan will be complete in order to achieve key milestones. This information will be use to forecast the spending of MSFT within the fiscal year.
PS: all purchases/services need to be received and billed to CI before June 30th to account for the current fiscal year.

SAMPLE

Project or Activity Title

**Total Requested
\$\$**

Chemistry Laboratory Instrumataion Refresh

\$452,000

MSFT Planning Budget Calendar 2020-2021

Items or services requested to be funded	July 2020 -Period 1	August 2020-Period 2	September 2020 -Period 3	October 2020 -Period 4	November 2020 -Period 5	December 2020 -Period 6	January 2021 -Period 7	February 2021 -Period 8	March 2021 -Period 9	April 2021 -Period 10	May 2021 -Period 11	June 2021-Period 12	Grand Total
Purchase of UPS Power Conditioner				\$ 9,000.00									\$ 9,000.00
Purchase Glove Box			\$ 42,000.00										\$ 42,000.00
Purchase of Spectrohometer						\$ 156,000.00							\$ 156,000.00
Purchase of Fluorimeter							\$ 39,000.00						\$ 39,000.00
Purchase of Analytical Ultracentrifuge			\$ 198,000.00										\$ 198,000.00
Lab. Student assistant hours to set up equip.								\$ 2,000.00	###	\$ 2,000.00	###		\$ 8,000.00
Total	\$ -	\$ -	\$ 240,000.00	\$ 9,000.00	\$ -	\$ 156,000.00	\$ 39,000.00	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00	\$ -	\$ 452,000.00

CSU Channel Islands
MSFT Proposed Budget
2020-2021

Please layout in detail when various components of your plan will be complete in order to achieve key milestones. This information will be used to forecast the spending of MSFT within the fiscal year.
 PS: all purchases/services need to be received and billed to CI before June 30th to account for the current fiscal year.

Project or Activity Title

Total Requested
\$\$

Gas Cells for Infrared Spectrometer, Isotope Analysis

\$4,000

*formulas will calculate totals

MSFT Planning Budget Calendar 2020-2021

Items or services requested to be funded	July 2020 -Period 1	August 2020-Period 2	September 2020 -Period 3	October 2020 -Period 4	November 2020 -Period 5	December 2020 -Period 6	January 2021 -Period 7	February 2021 -Period 8	March 2021 -Period 9	April 2021 -Period 10	May 2021 -Period 11	June 2021-Period 12	Grand Total
Two FTIR Gas Cells											\$ 3,000.00		\$ 3,000.00
Spare IR Optical windows											\$ 1,000.00		\$ 1,000.00
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,000.00	\$ -	\$ 4,000.00