

XXI B-MRS Meeting

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B-MRS
Meeting
October 1st to 5th



BRAZILIAN MATERIA
RESEARCH SOCIET

Maceió-AL, Bra

October 1st to 5th, 2023

Booklet

Presentation
Schedule

Mobile
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until April 17 th May 1 st Submission of Abstracts	June 06 th June 25 th Abstract status notification	until June 19 th June 29 nd Submission of Revised Abstract	June 26 th July 07 th Final Abstract Notificatio n	until July 26 th Submission for Student Awards
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Before the conference: the file (in pdf format) should be sent by email until September, 28th to - sinalizacaoconexao@gmail.com

Amount R\$ 70.00 - payment via PIX. The poster will be available at the Poster Help Desk at the Conference on Monday morning, October 2nd - 9am.

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Researchers from the State of São Paulo (BR) might be eligible for financial support from FAPESP. More information in the link below.

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Welcome

The **Brazilian Materials Research Society (B-MRS)** and the **Committee of the XXI B-MRS Meeting** invite the worldwide community of materials research to attend the 2023 Meeting to be held at the Ruth Cardoso Cultural and Exhibition Center in **Maceió-Alagoas, Brazil, October 1st to 5th, 2023.**

This traditional forum is dedicated to recent advances and perspectives in materials science and related technologies. It will be an excellent opportunity to bring together scientists, engineers and students from academy and industry to discuss the state of the art of Materials Science discoveries and perspectives.

Maceió is one of the main Brazilian capitals that has received many tourists mainly due to the receptivity of its inhabitants, the beaches with warm waters and extraordinary gastronomy. We very well welcome to Maceió. Do not miss this opportunity.

Organizing Committee



Carlos Jacinto da Silva
Chair

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Universidade Federal de Alagoas



Mário Roberto Meneghetti
Chair

Institute of Chemistry and
Biotechnology, Universidade
Federal de Alagoas

New materials for an efficient method for determination of 5-fluorouracil by voltammetric method glassy carbon electrode modified with gold nanostars, graphene oxide, and nanocellulose film.

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This work developed a disposable electrochemical sensor to detect the antitumor drug 5-fluorouracil (5-FU) using a glassy carbon electrode modified with gold nanostars, graphene oxide, and nanocellulose film (GNS/GO/NC)^{1,2}. For this, voltammetric measurements were performed using 0.2 mol L⁻¹ phosphate buffer solution at pH 6.5 as a supporting electrolyte. The electrochemical characterization and quantification of 5-FU were performed by cyclic voltammetry and differential pulse voltammetry, respectively. The results showed a linear concentration range of 0.25 to 25 µmol L⁻¹, excellent sensibility, and reproducibility. The proposed sensor exhibited exceptional sensing abilities towards 5-FU and was used for detecting this anticancer drug in the presence of epinephrine, acetaminophen, and norfloxacin without significant interference. Finally, the spiking method applied the NS/GO/NC sensor in urine synthetic, serum, and river samples. The proposed GNS/GO/NC is expected to hold great promise for anticancer drug monitoring and should be extended for application in other fields.

Keywords: electroanalysis, sensor, chemotherapy, gold nanostars, graphene oxide

REFERENCES

(1) Wang, J.; Qu, X.; Zhao, L.; Yan, B. Fabricating Nanosheets and Ratiometric Detection of 5 - Fluorouracil by Covalent Organic Framework Hybrid Material. *Anal. Chem.* 2021, 93, 4308-4316. <https://doi.org/10.1021/acs.analchem.0c05309>.

(2) Shiga, T.; Hiraide, M. Cardiotoxicities of 5-Fluorouracil and Other Fluoropyrimidines. *Curr. Treat. Options in Oncol.* 2020, 21 (27), 1-21. <https://doi.org/10.1007/s11864-020-0719-1>.