Certificados

Os certificados de participação e apresentação de trabalho na 47ª RASBQ estão disponíveis **neste link**.

Vídeo - Conferência de Abertura - 47ª RASBQ

"A química surpreendente dos nanomateriais: quando um prefixo faz toda a diferença"
Aldo José G. Zarbin (UFPR)

Chair
Shirley Nakagaki Bastos (UFPR - Presidente da SBQ)

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47ª REUNIÃO ANUAL DA SBQ - EDITORIAL

Caros(as) colegas,

No período **de 22 a 25 de maio de 2024** nos encontraremos na **47ª Reunião Anual da Sociedade Brasileira de Química**, que ocorrerá mais uma vez no **centro de convenções do hotel Monte**

Real em Águas de Lindóia/SP.

Nesta edição o tema será **"A centralidade da Química na educação do cidadão e na inovação científica e tecnológica**". Desta vez, teremos a oportunidade de conhecermos e discutirmos os desafios da Química para um mundo cada vez mais tecnológico. E com certeza a comunidade Química Brasileira terá muito o que apresentar nesses novos tempos.

A Comissão Organizadora mais uma vez entregará uma programação rica com os mais diversos temas da área da Química na busca de melhoria na qualidade de vida de nossa sociedade bem como na preservação de nossos recursos naturais. Mais uma vez teremos uma programação com workshops, minicursos, plenária de abertura, sessão de homenagens e premiações, conferências, simpósios, sessões temáticas, sessões coordenadas, sessões de painéis, SBQ na escola e um ambiente propício e aconchegante para as mais diversas discussões importantes para o nosso dia-a-dia. Desta forma, a 47ª Reunião Anual da SBQ será o palco ideal para toda a comunidade Química brasileira discutir as contribuições que podemos apresentar para um mundo mais igualitário e sustentável. Assim, conclamamos a todos(as) a participar deste que é o principal evento de Química na América Latina.

Luiz Gonzaga de França Lopes
Secretário Geral da SBQ
Presidente da Comissão Organizadora da 47ª RASBQ

Apoio

CAPES CNPq FAPESP MINISTÉRIO DA EDUCAÇÃO GOVERNO FEDERAL BRASIL UNIÃO E RECONSTRUÇÃO

Área: MAT

In-situ synthesis of lanthanide-MOF on tellurite glasses and optical fibers for sensing of volatile organic compounds

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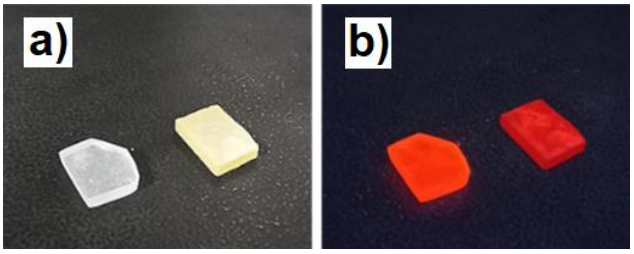
Keywords: *metal-organic frameworks; photoluminescence; optical fibers; tellurite glasses; VOCs sensing*

Highlights

The novel Ln-MOF@glass composite combines the chemical sensing potential of the luminescent MOF with a chemically stable substrate and optical light guiding capabilities inherent in optical fibers. These intrinsic characteristics make this material highly promising for applications in volatile organic compound (VOC) sensing.

Resumo/Abstract

Metal-organic frameworks (MOFs) is a class of inorganic polymer with a 3D network self-assembled with metallic ions and organic ligands. MOFs are currently the subject of intensive research due to their high potentiality to be applied for several purposes due to their large surface area and high intrinsic porosity [1,2]. In the case of Ln-MOFs, the luminescent properties are explored for sensing, however, it is also required an adequate supporting material to allow the transmission of excitation and emission light after interaction with an analyte. In this sense, oxide glass with large transparency in the UV and visible ranges appears as suitable host substrate for Ln-MOFs since it presents good thermal and chemical stabilities, and the desired transparency [3]. Additionally, optical fibers fabricated from those glasses also represent a potential host material for Ln-MOFs for applications in remote chemical sensing [4]. This work aims to investigate the in-situ growth formation of Ln-MOFs on tellurite glass surfaces. More precisely, we report the synthesis of different glass@Ln-MOFs composites containing luminescent coordination polymers based on Eu^{3+} linked to carboxylate ligands and using a simple and fast process. We also investigated a similar process to obtain optical fibers coated with the luminescent material. Tellurite and fluorotellurite glasses were prepared by conventional melt-quenching process and the Ln-MOFs coatings were firstly made by a microwave assisted hydrothermal synthesis using a Teflon cylinder reactor. After the addition of the Ln-MOFs precursors ($EuCl_3$ and carboxylate ligands) in the reactor chamber, glass pieces were immersed in the reactive medium. A similar process was applied to the optical fiber's coatings, but in this case the synthesis was performed using a hotplate and immersing the end of the fiber (around 2-5 cm) in the solution. The different glass@Ln-MOFs composites had its structural and photoluminescent properties investigated by different techniques, such as XRD, SEM and photoluminescence spectroscopy. Fig. 1(a) shows the glass samples coated with $[Eu(BTC)]_n$ and $[Eu(B4C)]_n$ which present an uniform coating layer on the entire glass surfaces. Also, the Fig. 1(b) shows the intense luminescent when the samples are illuminated under UV light at 254 nm. Finally, the composite TZN@[Eu(BTC)] was exposed to different organic analytes carried by nitrogen gas in a flow and photoluminescence measurements were acquired in real-time. Especially in the presence of acetone and dimethylformamide, a luminescence enhancement was verified for the Eu^{3+} $^5D_0 \rightarrow {}^7F_2$ transitions. Thus, the new Ln-MOF@glass composite described, combines the chemical sensing potential of a luminescent MOF with a stable and optical guide vitreous substrate. These intrinsic characteristics, as well as the easy synthesis procedure and the suitable optical properties, give this material a considerable perspective for their use in future sensing applications.



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