

# Photodegradation of Rhodamine B and Bisphenol A Over Visible-Light Driven $\text{Bi}_7\text{O}_9\text{I}_3$ -and $\text{Bi}_{12}\text{O}_{17}\text{Cl}_2$ -Photocatalysts Under White LED Irradiation

[Photodegradation of Rhodamine B and Bisphenol A Over Visible-Light Driven  \$\text{Bi}\_7\text{O}\_9\text{I}\_3\$ -and  \$\text{Bi}\_{12}\text{O}\_{17}\text{Cl}\_2\$ -Photocatalysts Under White LED Irradiation | SpringerLink](https://link.springer.com/article/10.1007/s11244-022-01689-0)

The screenshot shows a web browser displaying the SpringerLink article page. The browser's address bar shows the URL: <https://link.springer.com/article/10.1007/s11244-022-01689-0>. The page header includes the SpringerLink logo and a search bar. The article title is "Photodegradation of Rhodamine B and Bisphenol A Over Visible-Light Driven  $\text{Bi}_7\text{O}_9\text{I}_3$ -and  $\text{Bi}_{12}\text{O}_{17}\text{Cl}_2$ -Photocatalysts Under White LED Irradiation". Below the title, the authors are listed: Damian Tuba-Guaman, Michael Suarez-Chamba, Luis Quishpe-Quishpe, Carlos Reinoso, Cristian P. Santacruz, Miguel Herrera-Robledo, & Pablo A. Cisneros-Pérez. The article is published in *Topics in Catalysis*, volume 65, pages 1028–1044 (2022). The abstract states: "Two different bismuth oxyhalides photocatalysts  $\text{Bi}_7\text{O}_9\text{I}_3$  and  $\text{Bi}_{12}\text{O}_{17}\text{Cl}_2$  were obtained by oil bath and hydrothermal methods. The micro/nano-structures obtained were characterized by XRD, SEM, DRS and XPS. The XRD patterns are identical to those already reported. SEM revealed the formation of hierarchical micro/nano structures for  $\text{Bi}_7\text{O}_9\text{I}_3$  and nanobelts for  $\text{Bi}_{12}\text{O}_{17}\text{Cl}_2$ . Band gap values were determined for both catalysts from DRS and XPS data. The photocatalytic degradation of Rhodamine B and Bisphenol A were studied with both bismuth oxyhalides and compared with commercial titanium dioxide ( $\text{TiO}_2$ ). As light source was used a white Light-Emitting Diode lamp. As expected, a poor photocatalytic degradation was obtained in presence of  $\text{TiO}_2$ , but significant drops of concentrations in presence of the bismuth oxyhalides was observed. However, the mineralization of both pollutants was higher in presence of  $\text{Bi}_{12}\text{O}_{17}\text{Cl}_2$  than with  $\text{Bi}_7\text{O}_9\text{I}_3$ . In addition, a great part of Rhodamine B was removed by  $\text{Bi}_7\text{O}_9\text{I}_3$  in the dark, which is attributed to its morphological features. In contrast, Bisphenol A was degraded under visible light irradiation without significant adsorption." The right sidebar shows access options, including a "Buy article PDF" button for USD 39.95. The bottom of the page shows a Windows taskbar with the date and time: 12:28 p. m. 13/12/2022.