
[Skip to Main Content](#) if(true) { document.getElementById("skipNavigationLink").onclick =function skipElement () { var element = document.getElementById('article__content'); if(element == null || element == undefined) { element = document.getElementsByClassName('article__content').item(0); } element.setAttribute('tabindex','0'); element.focus(); } }



[Access byCAS - National Science Library](#)

[Access byCAS - National Science Library](#)

- [This Journal](#)
- [Anywhere](#)

-
-

[Login / Register](#)

The full text of this article hosted at iucr.org is unavailable due to technical difficulties.

googletag.cmd.push (function () { googletag.display ('advert-leaderboard'); }); _

[Bulletin of the Korean Chemical Society](#)

[Volume 36, Issue 2](#)

Acetone Gas Sensing Properties of Multiple-networked Pd-decorated Bi_2O_3 Nanorod Sensors

[Sunghoon Park](#)

Department of Materials Science and Engineering, Inha University, Incheon, Republic of Korea

[Search for more papers by this author](#)

[Soohyun Kim](#)

Department of Materials Science and Engineering, Inha University, Incheon, Republic of Korea

[Search for more papers by this author](#)

[Sangmin Lee](#)

Department of Electronic Engineering, Inha University, Incheon, Republic of Korea

[Search for more papers by this author](#)

[Chongmu Lee](#)

Corresponding Author

E-mail address: cmlee@inha.ac.kr

Department of Materials Science and Engineering, Inha University, Incheon, Republic of Korea

[Search for more papers by this author](#)

[Sunghoon Park](#)

Department of Materials Science and Engineering, Inha University, Incheon, Republic of Korea

[Search for more papers by this author](#)

[Soohyun Kim](#)

Department of Materials Science and Engineering, Inha University, Incheon, Republic of Korea

[Search for more papers by this author](#)

[Sangmin Lee](#)

Department of Electronic Engineering, Inha University, Incheon, Republic of Korea

[Search for more papers by this author](#)

[Chongmu Lee](#)

Corresponding Author

E-mail address: cmlee@inha.ac.kr

Department of Materials Science and Engineering, Inha University, Incheon, Republic of Korea

[Search for more papers by this author](#)

First published: 19 January 2015

<https://doi.org/10.1002/bkcs.10076>

[Read the full text](#)

[About](#)

[PDF](#)

[PDF](#)

[Tools](#)

- [Request permission](#)
- [Export citation](#)
- [Add to favorites](#)
- [Track citation](#)

[Share](#)

Give access

[Share full text access](#)

Share full text access

Share a link

- [Email to a friend](#)
- [Facebook](#)
- [Twitter](#)
- [Linkedin](#)
- [Google+](#)
- [Reddit](#)
- [CiteULike](#)

Abstract

This study examined the sensing properties of Bi_2O_3 nanorods decorated with Pd nanoparticles. Pd-decorated Bi_2O_3 nanorods were prepared by immersing the Bi_2O_3 nanorods in ethanol/(50 mM) PdCl_2 solution followed by UV irradiation and annealing. The Bi_2O_3 nanorods decorated with Pd nanoparticles showed faster and stronger response to acetone gas than the pristine Bi_2O_3 nanorods. Interestingly, the difference in response time between the Pd-decorated Bi_2O_3 nanorod sensor and pristine Bi_2O_3 nanorod sensor increased with increasing the acetone gas concentration. In contrast, the difference in recovery time between the two nanorod sensors decreased with increasing the acetone gas concentration. This difference can be explained using the chemical mechanism. The underlying mechanism for the enhanced response of the Bi_2O_3 nanorods decorated with Pd nanoparticles to acetone gas is also discussed.

[Citing Literature](#)

Number of times cited: 1

- Seung-Jin Ryu, Eric Arifin, Shin-Woo Ha and Jin-Kyu Lee, On-site Colorimetric Forensic Sensor (I): Quantitative Detection of Toxic HS and NH₃ Gases Using Metal-Ion-modified Silica Powders, *Bulletin of the Korean Chemical Society*, **36**, 10, (2434-2439), (2015).
[Wiley Online Library](#)

[Volume36, Issue2](#)

February 2015

Pages 468-472

googletag.cmd.push (function () { googletag.display ('advert-rail-1'); }); _

- [Related](#)
- [Information](#)

-

-

googletag.cmd.push (function () { googletag.display ('advert-rail-2'); }); _

-

```
var articleRef = document.querySelector('.article__body:not(.show-references) .article__references');  
if (articleRef) { articleRef.style.display = "none"; }
```

[Caption](#)

Additional links

About Wiley Online Library

- [Privacy Policy](#)
- [Terms of Use](#)
- [Cookies](#)
- [Accessibility](#)

Help & Support

- [Contact Us](#)
-

Opportunities

- [Subscription Agents](#)
- [Advertisers & Corporate Partners](#)

Connect with Wiley

- [The Wiley Network](#)
- [Wiley Press Room](#)

Log in to Wiley Online Library

[NEW USER >](#) [INSTITUTIONAL LOGIN >](#)

Change Password

Congrats!

Your password has been changed

Create a new account

[Returning user](#)

Forgot your password?

Enter your email address below. If your address has been previously registered, you will receive an email with instructions on how to reset your password. If you don't receive an email, you should register as a new user

Please check your email for your password reset instructions.

Request Username

Can't sign in? Forgot your username?

Enter your email address below and we will send you your username

If the address matches an existing account you will receive an email with instructions to retrieve your username

```
if(window.__satellite) { __satellite.pageBottom(); }
```

```
var __prum=[[['id','59e8fecb3847311aab7b23c6'],['mark','firstbyte',(new Date()).getTime()]];function(){var s=document.getElementsByTagName('script')[0],p=document.createElement('script');p.async='async';p.src='//rum-static.pingdom.net/prum.min.js';s.parentNode.insertBefore(p,s);})();
```