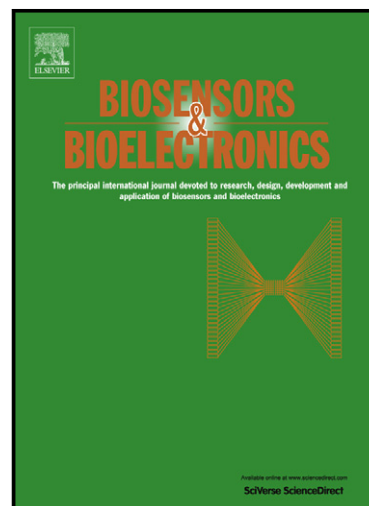


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A new room temperature gas sensor based on pigment-sensitized TiO₂ thin film for amines determination

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1 **A new room temperature gas sensor based on pigment-sensitized TiO₂ thin**
2 **film for amines determination**

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14 **Abstract :**

15 A new room temperature gas sensor was fabricated with pigment-sensitized TiO₂
16 thin film as the sensing layer. Four natural pigments were extracted from spinach
17 (*Spinacia oleracea*), red radish (*Raphanus sativus L.*), winter jiasmine (*Jasminum*
18 *nudiflorum*), and black rice (*Oryza sativa L. indica*) by ethanol. Natural
19 pigment-sensitized TiO₂ sensor was prepared by immersing porous TiO₂ films in an
20 ethanol solution containing a natural pigment for 24 h. The hybrid organic-inorganic
21 formed films here were firstly exposed to atmospheres containing methylamine
22 vapours with concentrations over the range 2–10 ppm at room temperature. The films
23 sensitized by the pigments from black-rice showed an excellent gas-sensitivity to

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