

Accepted Manuscript

Title: Humidity sensing properties of poly-vanadium-titanium acid combined with polyaniline grown in situ by electrochemical polymerization

Authors: Yanan Guo, Li Li, Chao Zhao, Liyuan Song, Baohui Wang



PII: S0925-4005(18)30911-0
DOI: <https://doi.org/10.1016/j.snb.2018.05.010>
Reference: SNB 24666

To appear in: *Sensors and Actuators B*

Received date: 14-1-2018
Revised date: 8-4-2018
Accepted date: 3-5-2018

Please cite this article as: Yanan Guo, Li Li, Chao Zhao, Liyuan Song, Baohui Wang, Humidity sensing properties of poly-vanadium-titanium acid combined with polyaniline grown in situ by electrochemical polymerization, *Sensors and Actuators B: Chemical* <https://doi.org/10.1016/j.snb.2018.05.010>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Humidity sensing properties of poly-vanadium-titanium acid combined with polyaniline grown in situ by electrochemical polymerization

Yanan Guo¹, Li Li¹, *, Chao Zhao², Liyuan Song¹, Baohui Wang¹

¹Provincial Key Laboratory of Oil & Gas Chemical Technology, College of Chemistry & Chemical Engineering, Northeast Petroleum University, Daqing, 163318, P. R. China

²Oil & Gas field Engineering Department, Jereh Oil & Gas Engineering Corporation, Beijing, 100020, P. R. China

*Corresponding author, e-mail: lilytms@nepu.edu.cn Tel.: +8618345996516.

Graphical Abstract

In this work, multilayer-structured poly-vanadium-titanium acid/polyaniline (V-Ti/PANI) composite was successfully synthesized. Two-layer-structured V-Ti/PANI composite was fabricated by dip-coating poly-vanadium-titanium acid and electrochemically polymerizing PANI onto the interdigitated gold electrode in sequence, and then the process could be repeated to prepare the multilayer-structured V/PANI composite. The humidity sensing performances of the multilayer-structured V-Ti/PANI composite exhibited not only small hysteresis, fast response and recovery time but also high stability within the relative humidity (RH) range of 11-97%. All the results demonstrate that the composite is promising as a new humidity sensitive material for measuring humidity.

Download English Version:

<https://daneshyari.com/en/article/7139039>

Download Persian Version:

<https://daneshyari.com/article/7139039>

[Daneshyari.com](https://daneshyari.com)