Improving permeability, stability, and compatibility in the chemo-sensor and applied in bio-imaging

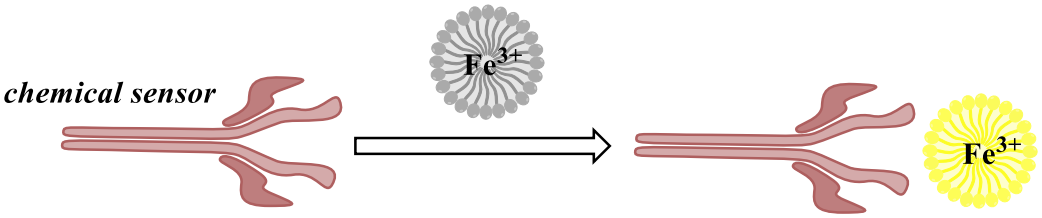
Nahla Omer[1], Fayin zhang[1*], ShanyiGuang[2*], Hongyao Xu[1, 3*]

1College of Material Science and Engineering & State Key Laboratory for Modification of
Chemical Fibers and Polymer Materials, Donghua University, Shanghai 201620, China
2School of Chemistry, Chemical Engineering and Biotechnology, Donghua University, Shanghai
201620,China
3Research Center for Analysis and Measurement, Donghua University, Shanghai, 201620, China

ABSTRACT

Octavinyl-polyhedral oligomeric silsesquioxane (OV-POSS) with amine-containing poly acryl amide (OV-POSS co-poly (acryl amide)) give a new fluorescent polymeric chemo sensor with fully water solubility. It shows better selectivity for Fe^{3+} in water solution over a wide detection range (pH=4-10). The incorporation of Fe^{3+} to OV-POSS co-poly (acryl amide) results in a significant with fluorescence enhancement in water solution over other metal ions. Moreover, it was found that the system possesses low-cytotoxic, good permeability, high stability, and compatibility. Hence, it can be applied in bio-image successfully with bright blue fluorescent. Additionally, visible color change to the naked-eye from colorless to bright yellow can be observed directly when Fe^{3+} was added into chemo-sensor OV-POSS co-poly (acryl amide) compared with other metal ions.

Keywords: poly acryl amides, cell imaging, polymeric chemo-sensor, water-solubility



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Publications

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2. Nahla Omer, Fayin zhang, Gang Zhao, Shanyi Guang, Hongyao Xu* .Highly selective chemo-sensor for repetitive detection of Fe^{3+} in pure water and bio-imaging. Analyst, 2019, DOI: 10.1039/C9AN00070D.

3. Nahla Omer and Hongyao Xu. Synthesis and Characterization of hybrid Organic– inorganic near infrared Absorption OV-POSS-Squaraine-amine and improve the Properties. International Journal of Nanotechnology & Nano medicine Int. 2019 ISSN: 2476- 2334

Conference

1. Nahla Omer.Synthesis and Controllable Time Reaction of Crosslink Organic Inorganic Hybrids with Near Infrared Absorption 2017International Conference on Advanced Fibers and Polymer Materials October 8–10, 2017, Shanghai, China. Donghua University, China P-76-G-06.

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3. Nahla Omer, Fayin zhang, Gang Zhao, Shanyi Guang and Hongyao Xu. Synthesis and controllable time and feed ratio of organic-inorganic hybrids with near infrared absorption for solar cells. 23rd International Conference on Pharmaceutical Biotechnology, December10-11, 2018 Rome, Italy

4. Nahla Omer title of Controllable Preparation and Application of Squaraine Containing Nanometer Hybrids with Broad Band Absorption to Near Infrared by one step. Nutritional Science: Empowering Health and Well-being Barcelona, November 26-27, 2018 Spain

5. Nahla Omer Controllable preparation and application of squaraine-containing nanometer hybrids with broad band absorption. Conference 16th Nano Today 2019 16-20 June 2019, Portugal.

Biography

- 2002: Researcher Assistant, Pharmaceutical Industries Section, Chemical Industries Department, Industrial Research and Consultancy Centre, Khartoum, Sudan.
- 2005-2014: lectuer in Sudan University of Science and Technology (SUST) Khartoum, Sudan.
- 2013-2014 lectuer in Royal College of Technology Sudan.
- From 2014 up to now PhD Researcher, College of Materials Science and Engineering, Donghua University, Shanghai, China

E-mail: nalaomerelsadig2014@hotmail.com

References:

Prof. Hongyao Xu College of Material Science and Engineering & State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, Donghua University, Shanghai 201620, China School of Chemistry, Chemical Engineering and Biotechnology, Donghua University, Shanghai 201620, China

E-mail: hongyaoxu@dhu.edu.cn

Prof. Gurashi Abdalla Gasmelseed University of the Gezira

Email: Gurashijar@hotmail.com