

## Supporting Information

### **Distinctive Detection of Fe<sup>2+</sup> and Fe<sup>3+</sup> by Biosurfactant Capped Silver Nanoparticles via Naked Eye Colorimetric Sensing**

Kalaivani Dayanidhi †, and Noorjahan Sheik Eusuff †\*

† PG & Research Department of Chemistry, Guru Nanak College (Autonomous), Affiliated to  
University of Madras, Velachery, Chennai, Tamilnadu, India.

\*Address correspondence to : Dr. S.E. Noorjahan,

Assistant Professor,

PG & Research Department of Chemistry,

Guru Nanak College (Autonomous),

Affiliated to University of Madras,

Velachery, Chennai, Tamil Nadu, India,

E-mail: [senoorjahan@gmail.com](mailto:senoorjahan@gmail.com)

[noorjahan.se@gurunanakcollege.edu.in](mailto:noorjahan.se@gurunanakcollege.edu.in)

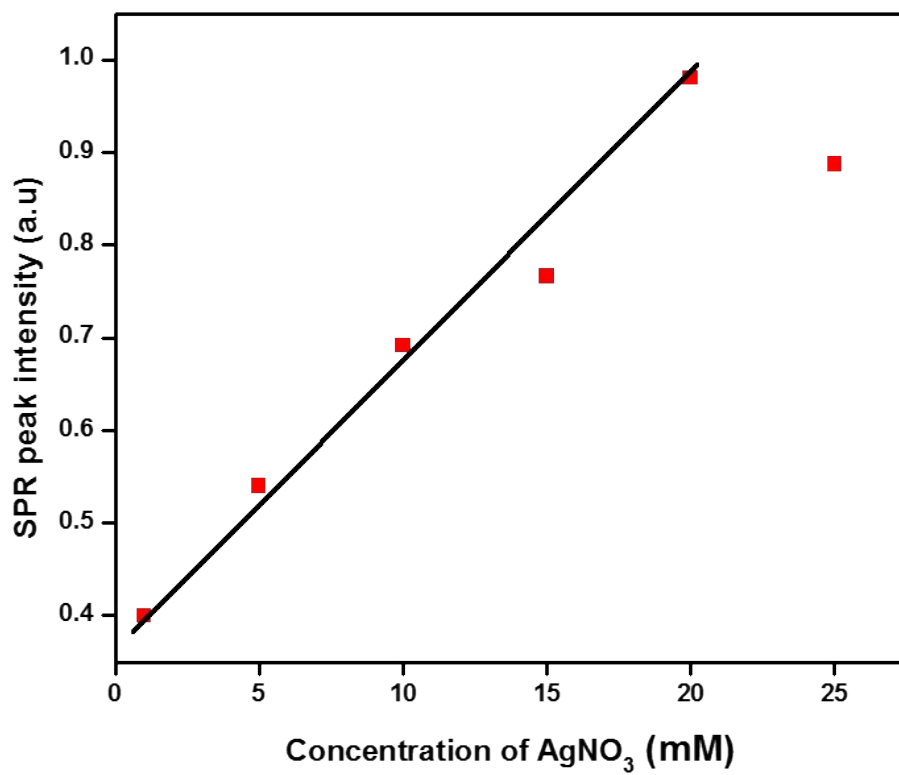
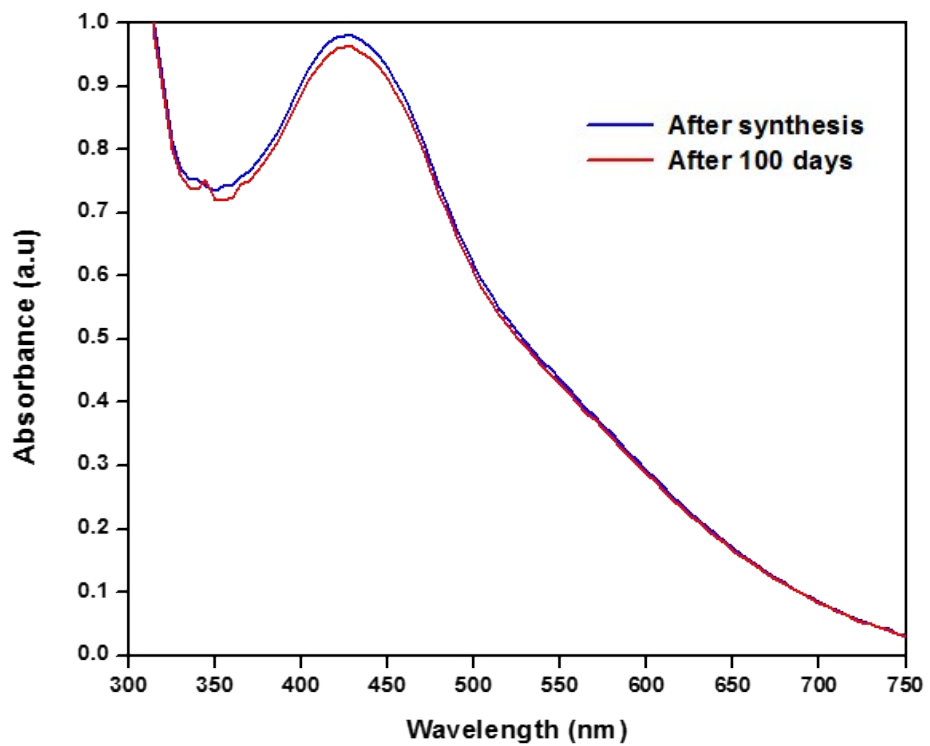


Figure S1. Scatter plot for concentration of AgNO<sub>3</sub> vs SPR peak intensity



**Figure S2. UV-Vis absorption spectra showing the unchanged SPR peak of AgNPs after 100 days**

**Table S1. Composition of water used in the real time analysis**

| <b>Sl.No.</b> | <b>Substance or Characteristic</b>                         | <b>Drinking Water</b> | <b>Tap Water</b>   | <b>River water (Palar)</b> |
|---------------|--|-----------------------|--------------------|----------------------------|
| 1             | Colour   | Colourless & Clear    | Colourless & Clear | Colourless & Clear         |
| 2             | Total Dissolved Solids at 105° C (mg/l)                    | 200                   | 1200               | 1230                       |
| 3             | Calcium (As Ca) (mg/l)                                     | 112                   | 410                | 610                        |
| 4             | Magnesium (As Mg) (mg/l)                                   | 25                    | 32                 | 39                         |
| 5             | Total Hardness (As CaCO <sub>3</sub> ) (mg/l)              | 430                   | 800                | 732                        |
| 6             | Chlorides (As CaCO <sub>3</sub> ) (mg/l)                   | 257                   | 805                | 785                        |
| 7             | Hydrogen Ion Concentration (pH)                            | 7.5                   | 7.1                | 7.3                        |
| 8             | Alkalinity to methyl orange (As CaCO <sub>3</sub> ) (mg/l) | 258                   | 270                | 300                        |
| 9             | Iron (As Fe) (mg/l)  | 0.35                  | 0.41               | 0.49                       |
| 10            | Fluorides (as F)(mg/l)                                     | 0.9                   | 1.4                | 1.5                        |