

## Supplementary Information

### **A novel one-step synthesis of gold nanoparticles in an alginate gel matrix by solution plasma sputtering**

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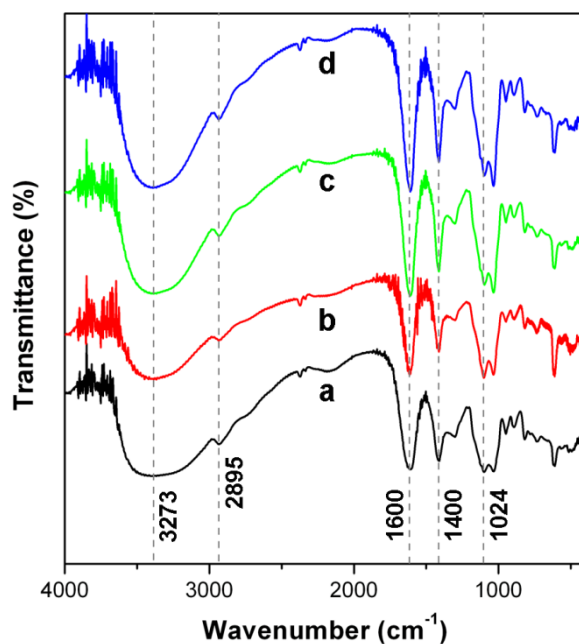
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**Fig. S1** AuNPs–alginate aqueous suspensions prepared from alginate solution of different concentrations and SPS discharge times.



**Fig. S2** FTIR spectra of (a) sodium alginate aqueous solution and AuNPs–alginate aqueous suspensions produced in (b) 0.2, (c) 0.5, and (d) 0.9 %w/v alginate solutions (discharge time = 10 min).

**Table S1** Assignment of FTIR peaks appearing in Fig.2

Wavenumber (cm <sup>-1</sup> )	Peak assignment
3273	O–H stretching
2895	C–H stretching
1600	Asymmetric stretching of COO <sup>-</sup>
1400	Symmetric stretching of COO <sup>-</sup>
1024	C–O–C bending