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Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: FORMING GLUTATHIONE-CAPPED AND METAL-DOPED ZINC SELENIDE/ZINC SULFIDE CORE-SHELL QUANTUM DOTS IN AQUEOUS SOLUTION

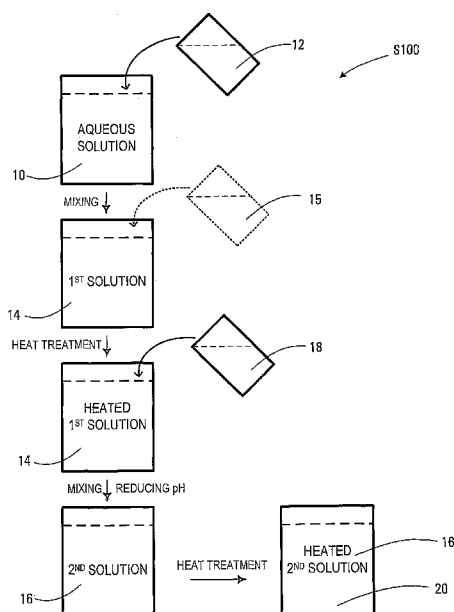


FIG. 1

(57) Abstract: In a process of forming a capped crystal structure, a precursor solution is heated. The solution comprises a mixture of zinc (Zn) precursor, selenium (Se) precursor, precursor for a dopant, glutathione (GSH), and water. The dopant comprises a transition metal (M). The molar ratio of Zn:Se in the solution may be about 10:3 to about 10:5. The solution is heated for a first period sufficient to allow Zn(M)Se crystal core to form. After the first period of heating, more zinc precursor and GSH are added to the heated solution, and the solution is heated for a second period sufficient to form ZnS crystal shell on the Zn(M)Se crystal core. GSH is added in a sufficient amount to form a GSH layer around the Zn(M)Se/ZnS quantum dot.



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| — | <i>as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))</i> | Published: | — | <i>with international search report (Art. 21(3))</i> |
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