

METHODS OF FORMING A NANOCRYSTAL**ABSTRACT OF THE DISCLOSURE**

5 Methods of forming a nanocrystal are provided. The nanocrystal may be a binary nanocrystal
of general formula M_1A or of general formula M_1O , a ternary nanocrystal of general formula
 M_1M_2A , of general formula M_1AB or of general formula M_1M_2O or a quaternary
nanocrystal of general formula M_1M_2AB . M_1 is a metal of Groups II - IV, Group VII or
Group VIII of the PSE. A is an element of Group VI or Group V of the PSE. O is oxygen. A
10 homogenous reaction mixture in a non-polar solvent of low boiling point is formed, that
includes a metal precursor containing the metal M_1 and, where applicable M_2 . For an oxygen
containing nanocrystal the metal precursor contains an oxygen donor. Where applicable, A is
also included in the homogenous reaction mixture. The homogenous reaction mixture is under
elevated pressure brought to an elevated temperature that is suitable for forming a nanocrystal.

15

Fig. 1a