Aging effects on hexagonal pencil like zinc oxide nanostructures

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zinc oxide nanorods (Pencil like) were synthesized by solution methods in presence of zinc acetate dihydrate (Zn(Ac)2.2H2O) and alkali sodium hydroxide (NaOH) at 75°C for the different ageing time (12, 24, 36,48 and 60 hours) intervals. The morphological observation was carried out by the field emission scanning electron microscopy (FESEM). It reveals that as the (refluxing) time increases the size (length and diameter) of zinc oxide nanorods is increases. Further, the morphological characterization was also carried out by using transmission electron microscopy (TEM), selected area electron diffraction (SAED) pattern and high-resolution transmission electron microscopy (HRTEM). TEM image is closely consistent with the FESEM observations. The crystallinity of the product was observed by the X-ray diffraction pattern. The optical property of the hexagonal zinc oxide nanorods was characterized by the using UV-vis spectrophotometer. A strong peak of zinc oxide was observed at 373 nm which is the characteristic peak of zinc oxide.