

पेटेंट कार्यालय
शासकीय जर्नल

**OFFICIAL JOURNAL
OF
THE PATENT OFFICE**

निर्गमन सं. 33/2023
ISSUE NO. 33/2023

शुक्रवार
FRIDAY

दिनांक: 18/08/2023
DATE: 18/08/2023

पेटेंट कार्यालय का एक प्रकाशन
PUBLICATION OF THE PATENT OFFICE

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/06/2023

(21) Application No.202341038501 A

(43) Publication Date : 18/08/2023

(54) Title of the invention : METHOD FOR THE SYNTHESIS OF QUANTUM DOTS WITH TUNABLE OPTICAL PROPERTIES FOR USE IN PHOTOVOLTAIC DEVICES

(51) International classification :B82Y 100000, B82Y 200000, H01G 092000, H01L 310320, H01L 310352
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)Name of Applicant :

1)DR. RAMACHANDRA R K

Address of Applicant :PRINCIPAL, GOVERNMENT DEGREE COLLEGE, CHODAVARAM, ANAKAPALLE DIST 531036 -----

2)DR. ESUB BASHA SHAIK

3)DR. P V S S S N REDDY

4)DR. T K VISVESWARAYA RAO

5)DR. TIRUPATHI RAO

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1)DR. RAMACHANDRA R K

Address of Applicant :PRINCIPAL, GOVERNMENT DEGREE COLLEGE, CHODAVARAM, ANAKAPALLE DIST 531036 -----

2)DR. ESUB BASHA SHAIK

Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF PHYSICS GOVERNMENT COLLEGE (AUTONOMOUS) E G DIST RAJAHMUNDY 533105 Email: -----

3)DR. P V S S S N REDDY

Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF PHYSICS GOVERNMENT COLLEGE (AUTONOMOUS) E G DIST RAJAHMUNDY 533105 Email: -----

4)DR. T K VISVESWARAYA RAO

Address of Applicant :PRINCIPAL SAS GOVERNMENT DEGREE COLLEGE NARAYANAPURAM W G DIST email: -----

5)DR. TIRUPATHI RAO

Address of Applicant :RESEARCH SCHOLAR DEPARTMENT OF PHYSICS CRYSTAL GROWTH AND NANOSCIENCE RESEARCH CENTER, GOVERNMENT COLLEGE (AUTONOMOUS) RAJAHMUNDY E G DIST 533105 email: -----

(57) Abstract :

METHOD FOR THE SYNTHESIS OF QUANTUM DOTS WITH TUNABLE OPTICAL PROPERTIES FOR USE IN PHOTOVOLTAIC DEVICES ABSTRACT The present invention discloses a method for the synthesis of quantum dots with tunable optical properties for use in photovoltaic devices. The method involves the controlled growth of quantum dots by manipulating reaction conditions and adjusting parameters to achieve desired sizes, compositions, and optical characteristics. The synthesized quantum dots offer tunability in terms of bandgap, absorption, and emission wavelengths, making them suitable for efficient light absorption and power conversion in photovoltaic devices. The method begins by providing a precursor solution containing semiconductor materials and capping ligands. The reaction conditions, including temperature, pressure, and reaction time, are carefully controlled to promote the growth of quantum dots with specific properties. The size of the quantum dots is controlled by adjusting the concentration of the precursor solution and the reaction time, while the composition is manipulated by varying the stoichiometry of the semiconductor materials.

No. of Pages : 4 No. of Claims : 9