

**UNIVERSITY GRANTS COMMISSION**  
Bahadurshah Jafar Marg, Delhi  
**ASSESSMENT/EVALUATION REPORT UGC MRP (F. No. 41-918/2012 (SR))**  
**PONDICHERRY UNIVERSITY, PUDUCHERRY**

<b>A</b>	<b>DETAILS OF THE PROJECT</b>	
	Title of the Project	Nanocrystalline Dye -Sensitized Solar Cell: An Experimental and Theoretical investigation for high performance
	Total Duration of the project	Three years (01-07-2012 to 30-06-2015)
	Project status	Completed
	Subject	Physics
	File Number: UGC Reference N. & Date	F. No. 41-918/2012 (SR) dated 23-07-2012
	Grant Approved	<b>Rs. 7,66,240/-</b>
<b>B</b>		
1	Name of Principal Investigator	Dr. Ramaswamy Murugan
2	Designation	Professor
3	Address with e-mail and mobile No.	Department of Physics Pondicherry University, Puducherry 605014 E-mail: moranamurugan.phy@pondiuni.edu.in Mobile: +91-9486521397
4	Whether the work is focused on the title of the project	Yes. The work is focused on the title of the project
5	Whether original work is done	The reported research work is original
6	Whether significant contribution made by the principal investigator	Yes. Significant contribution has been made through this project. The dye-sensitized solar cell (DSSC) 's working principle is analogous to natural photosynthesis in light-harvesting and charge separation. Natural dyes extracted from three types of grasses and dyes extracted from fruits of ivy gourd and flowers of red frangipani were used as sensitizers in this work to fabricate dye-sensitized solar cells (DSSCs). The performance of the cells fabricated with these extract shows as good as efficiencies with the reported dyes.
7	Whether proposed work have relevance to the society/ scientific community	Yes, the research on solar cell development a highly relevant study to both society and the scientific community
8	What type of contribution found in the final report? Theoretical/ Practical, if there are theoretical contribution given by the principal investigator, whether real applications are given	Practical contributions.

9	Whether theoretical/ Practical contributions and their results and finds are published	Yes, the results are published in journals with good Impact factors, and the list is attached
10	Whether results and findings are significant	Yes, significant
11	Whether the significant publications are made by principal investigator, peer reviewed journal	Yes, publications are made in the following peer-reviewed high impact journals: 1. Performance of dye-sensitized solar cells fabricated with extracts from fruits of ivy gourd and flowers of red frangipani as sensitizers. <b>Spectrochim. Acta. Part A: Molecular and Biomolecular Spectroscopy</b> 104 (2013) 35-40. (Impact Factor: 4.098) (citation: 136)  2. Room temperature ferromagnetic properties of Cu <sub>2</sub> O microcrystals. Published in <b>Journal of Alloys and Compounds</b> , 579, (2013) 572-575 (Impact Factor: 4.175).  3. Green grasses as light harvesters in dye-sensitized solar cells. <b>Spectrochim, Acta. Part A: Molecular and Biomolecular Spectroscopy</b> 135 (2015) 947-952. (Impact Factor: 4.098) (citation: 43)
12	The number of publications made by the principal investigator is sufficient	3 in Peer reviews International Journals 3 in Conferences Sufficient publications
13	Whether the contribution made by the principal investigator is sufficient	Yes, sufficient
14	The findings and results of the sanction major research projects are justifiable	Yes, findings and results of the sanctioned major research project are justifiable
15	Whether completed project work meet the proposed objectives	The completed project work meets the proposed objectives.
16	Give your brief comments on the overall work of the project	In summary the project is well-executed, achieved most of the proposed targets and in overall excellent contribution for the DSSC research.
17	Any specific comments	-
18	Indicate your overall assessment of the project Poor/ Good/ Excellent	<b>GOOD</b>

Date: 23/09/2021

N. Bhaskaran

Place: Tiruchirappalli.

Name and address of the Expert: Prof. N Bhaskaran

Department of Physics  
National Institute of Technology  
Tiruchirappalli  
Phone: 04312503606  
Email: nbaski@nitt.edu

**Dr. RAMASWAMY MURUGAN**  
PROFESSOR  
DEPARTMENT OF PHYSICS  
PONDICHERRY UNIVERSITY

DEAN (RESEARCH)  
Pondicherry University  
Puducherry - 605 014

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