|  |  |  |  |
| --- | --- | --- | --- |
| Title | Natural Light-harvesting Sensitizers for Dye Sensitized Solar Cell | | |
| Author(s) Name | Sunil Yadav , Shaichi Sen Jenny , Asif Ahmed , Lawrence Amadi , Fred L. Nesbitt , Aisha Ward , William Ghann , Destiny Brown , Jamal Uddin , Md. Faruque Hossain , Md. Nizam Uddin . | | |
| Contact Email(s) | juddin@coppin.edu | | |
| Published Journal Name | Energy and Environmental Engineering | | |
| Type of Publication | Journal | | |
| Volume | 3 | Issue | 4 |
| Publisher | Horizon Research Publishing Co., Ltd. | | |
| Publication Date | 2015 | | |
| ISSN | 2331-6306 | | |
| DOI | 10.13189/eee.2015.030403 | | |
| URL | https://www.hrpub.org/journals/article\_info.php?aid=3306 | | |
| Other Related Info. | Pages 94-100 | | |
| **Keywords:** Natural Fruit Dyes, Titanium-dioxide (TiO2), Fluorine-Doped Tin-Oxide (ITO), Dye Sensitized Solar Cell (DSSC) | | | |
| Citation: Yadav, Sunil & Sen, Shaichi & Ahmed, Asif & Amadi, Lawrence & Nesbitt, Fred & Ward, Aisha & Ghann, William & Brown, Destiny & Uddin, Jamal & Hossain, Md. Faruque & Uddin, Md. (2015). Natural Light-harvesting Sensitizers for Dye Sensitized Solar Cell. Energy and Environmental Engineering. 3. 94-100. 10.13189/eee.2015.030403. | | | |

|  |  |
| --- | --- |
| Abstract |  |
| Natural pigments containing anthocyanidins extracted from 14 fruit samples were studied as possible sensitizers for the fabrication of dye-sensitized solar cell (DSSC). The Dyes extracted from pomegranate and berry families are reported as candidates for DSSC with a lead current between 0.5–3.98 (mA) and a voltage of 150–350 (mV), and so could be used as photosensitizers in the construction of affordable and low cost DSSC especially for educational purposes. Based on direct sunlight illumination, pomegranate dye had the maximum efficiency in energy conversion (0.22%) followed by, raspberry (0.16%), blackberry (0.14%), blueberry (0.05%) and red grape (0.02%). | |

**Please specify which Sustainable Development Goal (SDG) (s) falls under your research:**

|  |  |  |  |
| --- | --- | --- | --- |
| Goal 1 | No Poverty | Goal 2 | Zero Hunger |
| Goal 3 | Good Health and Well-Being | Goal 4 | Quality Education |
| Goal 5 | Gender Equality | Goal 6 | Clean Water and Sanitation |
| **Goal 7** | **Affordable and Clean Energy** | Goal 8 | Decent Work and Economic Growth |
| Goal 9 | Industry, Innovation and Infrastructure | Goal 10 | Reduced Inequalities |
| Goal 11 | Sustainable Cities and Communities | Goal 12 | Responsible Consumption and Production |
| Goal 13 | Climate Action | Goal 14 | Life below Water |
| Goal 15 | Life on Land | Goal 16 | Peace, Justice and Strong Institutions |
| Goal 17 | Partnerships for the Goals |  |  |