
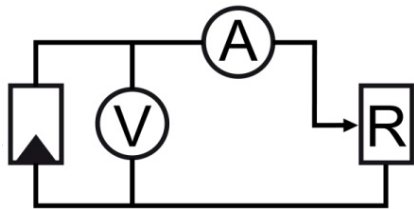





## Worksheet 6 (answer sheet): Optimizing the power output of solar cells

Solutions are only given for those tasks that have a standardized answer.

### Task 1

Set up the circuit and draw a circuit diagram using the correct circuit symbols.

| Circuit symbols |  | Circuit diagram  |
|-----------------|--|--|
| voltmeter       |   |  |
| ammeter         |   |  |
| solar cell      |   |  |
| potentiometer   |  |  |

### Task 5

Write a method for the experiment. Make use of the sentence patterns to write meaningful sentences. Elements from the sentence patterns can be used more than once.

|    |         |   |      |                               |
|----|---------|---|------|-------------------------------|
| we | set     | the digital multimeter                      | to   | the voltage measurement range |
|    | connect | the other digital multimeter                |      | the current measurement range |
|    | direct  | the potentiometer                           | with | the solar cell                |
|    | measure | the ammeter and the potentiometer in series |      | both directions               |
|    | reduce  | the voltmeter                               | onto | turning the potentiometer     |
|    | write   | the light of the lamp                       |      | the book                      |
|    |         | voltage and current                         | of   |                               |
|    |         | the voltage in steps of 0.1 V               | into |                               |
|    |         | the observations                            | by   |                               |

1. First we set the digital multimeter to the voltage measurement range.
2. Then we set the other digital multimeter to the current measurement range.
3. Thereafter, we connect the potentiometer to the solar cell.
4. Then we connect the ammeter and the potentiometer in series with the solar cell.
5. Next, we connect the voltmeter to the solar cell.
6. Now we direct the light of the lamp onto the solar cell.
7. At the same time, we measure voltage and current of the solar cell.
8. Then we reduce the voltage in steps of 0.1 V by turning the potentiometer.
9. At the end, we write the observations into the book.