**User Instructions for PV Report Generator**

Welcome to the PV Report Generator Software — a tool developed to streamline the analysis and reporting of perovskite solar cell measurements for both 2-pixel and 8-pixel device architectures.

**1. Initial Interface**

Upon launching the software, users are greeted with a welcome screen featuring the following options:

* **Pixel Configuration Selection**:  
  Users must choose between two analysis modes:
  + **2-Pixel**
  + **8-Pixel**
* **Name Input**:  
  Users can input their name. This name will appear on the cover page of the generated PDF report.
* **Visit Research Group Website**:  
  A button is available to visit the website of the SMAT research group.

**2. 2-Pixel Mode**

When the **2-Pixel** button is selected, the following features and inputs become available:

* **Experiment Date**:  
  Users can input the date of the measurement. If no date is provided, the software automatically uses the current date as the default.
* **Metadata Input (Optional)**:  
  Users may provide the following experimental metadata:
  + Scan Rate
  + Sun Intensity
  + Temperature  
    These fields are optional. If left empty, the report will indicate the values as "N/A."
* **Select Excel File**:  
  Users must upload an Excel file containing PV measurement data. The accepted formats are:
  + .xlsx
  + .xlsm  
    The file must follow a specific Excel Template (details on how to modify the template are provided below).
* **Check Template Functionality**:  
  Before generating a report, users are encouraged to validate the format of the uploaded Excel file using the **Check Template** button. This validation involves:
  + **Sheet Name Verification**: Ensures all sheet names follow the expected format and order.
  + **Column Name Check**: Verifies that all required columns are present.
  + **Formula Validation**: Confirms that essential formulas are correctly implemented.
* **Generate Report**:  
  Once validation is complete, the user can proceed by clicking the **Generate Report** button.

**3. 8-Pixel Mode**

In the **8-Pixel** configuration, users will:

* **Select Folder**:  
  Choose the folder containing all subfolders with 8-pixel measurement data. The directory should follow the naming convention:

css

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[sample\_1][1], [sample\_1][2], ..., [sample\_1][8]

[sample\_2][1], ..., [sample\_2][8]

* **Validation of Folder Structure**:  
  The software checks whether the folder structure matches the expected naming pattern. If the structure is incorrect, a warning message is displayed. If the structure is valid, a green confirmation message appears.
* **Metadata Extraction**:  
  In 8-Pixel mode, metadata is automatically read from each Excel file. No manual metadata input is required.

**4. Notes on the Excel Template**

*(You mentioned you will provide more details about how to modify the Excel Template. I’ll leave this section as a placeholder and you can describe what the user needs to know — for example, required sheet names, column names, and formulas. Let me know and I can help write this part too.)*

Let me know when you're ready to include the Excel Template section, or if you want to generate this as a .docx file directly.

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