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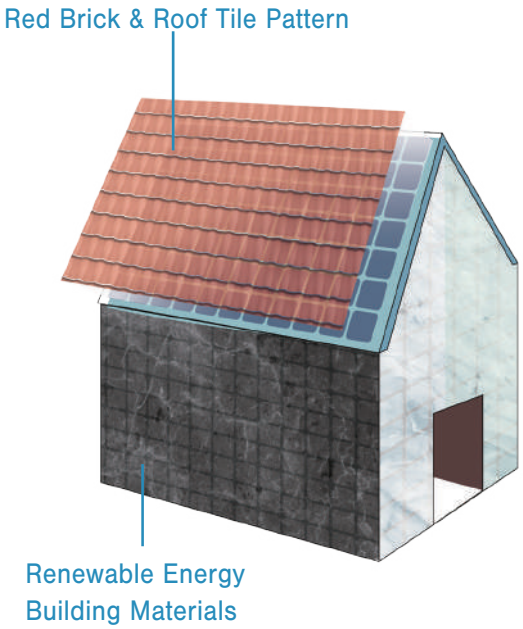
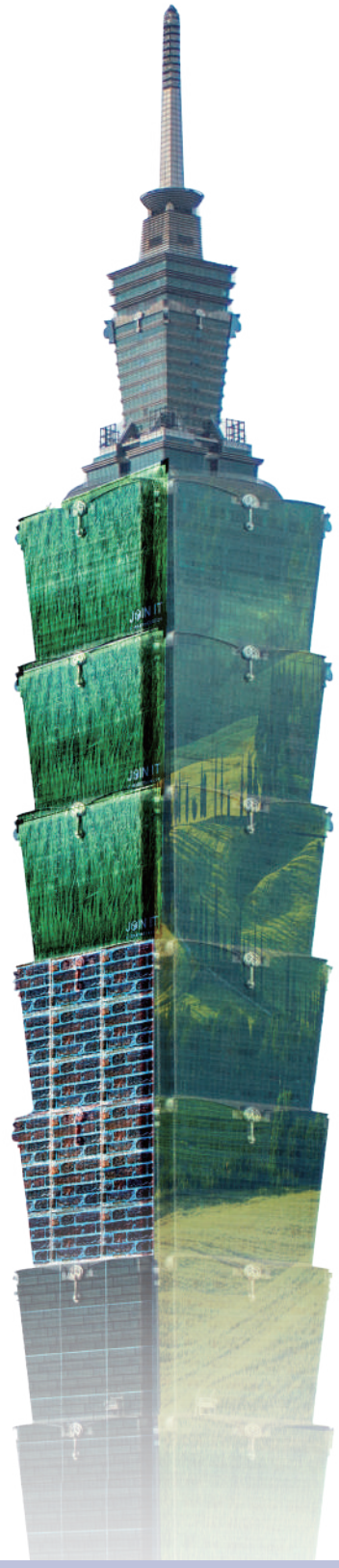
Recyclable Application of Color-Painted Solar Panel Coating

Painted Patterns



Patented Painting Coating Vertical/Flat Solar Panels



Color-Painted Photovoltaic Exterior Wall Application

Lighting the future with innovation, we drive the transition to a low-carbon economy and green energy, turning sustainable development from vision into reality.

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Recyclable Application of Color-Painted Solar Panel Coating Technology

Nano Color-Painted Coating Solar PV's Power Generation Solution

This technology provides usable and aesthetically pleasing solar power generation solutions with exclusive coating patented technology that makes the surface scratch-resistant and self-cleaning, reducing maintenance costs. All patterns can be customized to provide painted products according to requirements.

Exclusive Patented Coating Technology

- Any custom designs
- High transparency

Surface Treatment

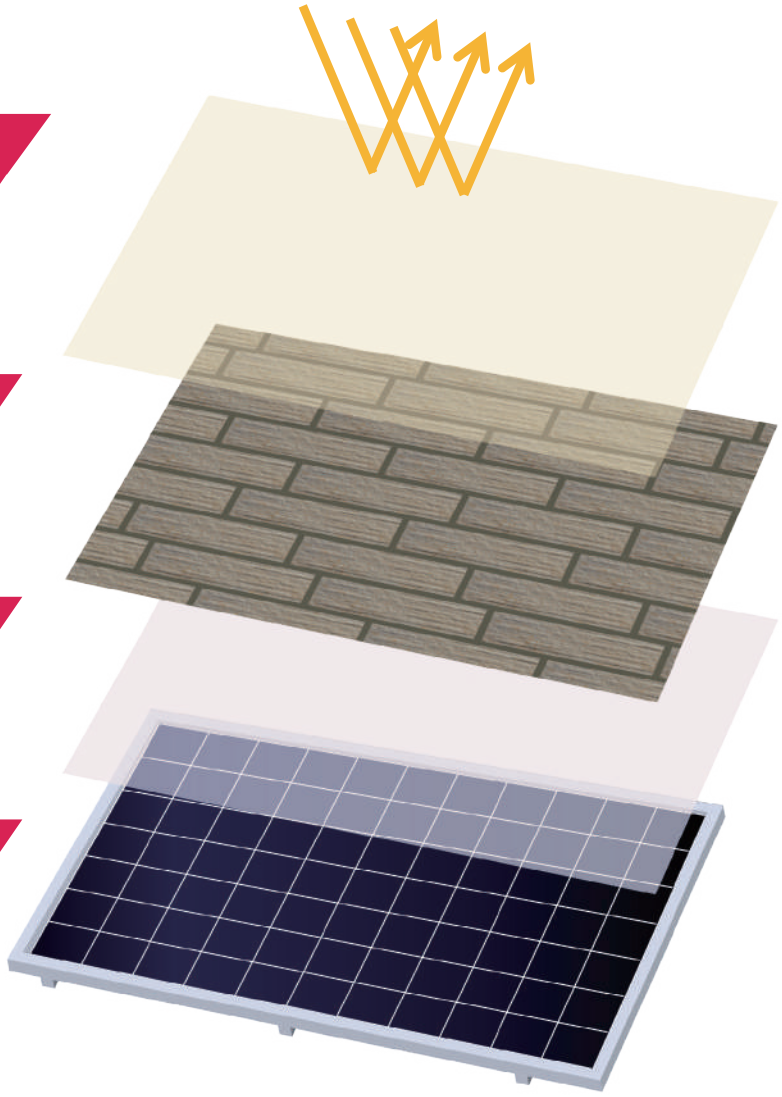
- UV resistant
- Scratch-resistant
- Rainwater self-cleaning

Color-Painted Coating

- Non-toxic
- No heavy metals
- High light transmittance

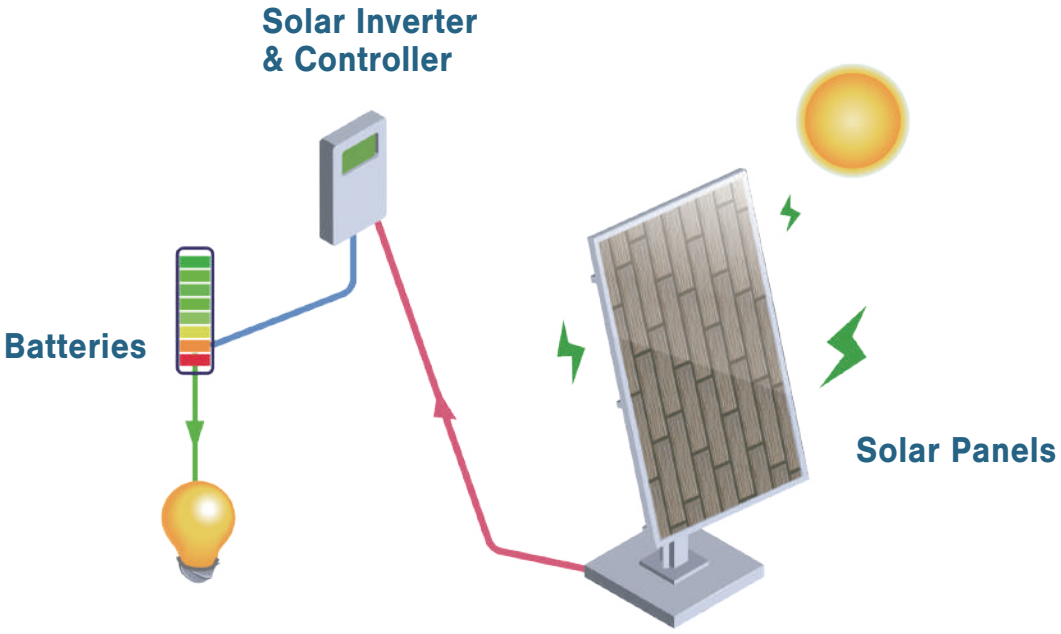
Base Treatment

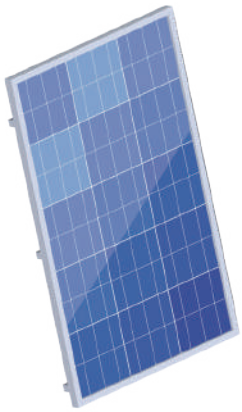
- Permanent type : High adhesion
- Replaceable type : Can be peeled off and replaced with new patterns



Technology Highlights

Corporate logos, promotional advertisements, signage, exterior walls, roofs, sound barriers, advertising wall surfaces, carports, sun shields, eaves





	Traditional Photovoltaic Panel	Recyclable Application of Color-Painted Solar Panel Coating Technology
Reflection Issues	Unavoidable	👍 Color-Painted coatings can prevent reflection
Usage Sites	Limited (mostly can only be installed on roofs and flat open areas)	👍 Extensive (it can be planned and installed anywhere within sunlight exposure, such as building exterior walls, advertising wall surfaces, carports, signage, eaves;*windowsills, etc.)
Performance	100% performance efficiency	*70~90% performance efficiency
Maintenance Costs	High Maintenance (it easily accumulates dirt, requires frequent cleaning, performance will decrease if it is without cleaning)	👍 Low Maintenance (incl. special surface treatment, dirt-resistant, scratch-resistant, rainwater self-cleaning functions) * Performance varies depending on different color-painted patterns

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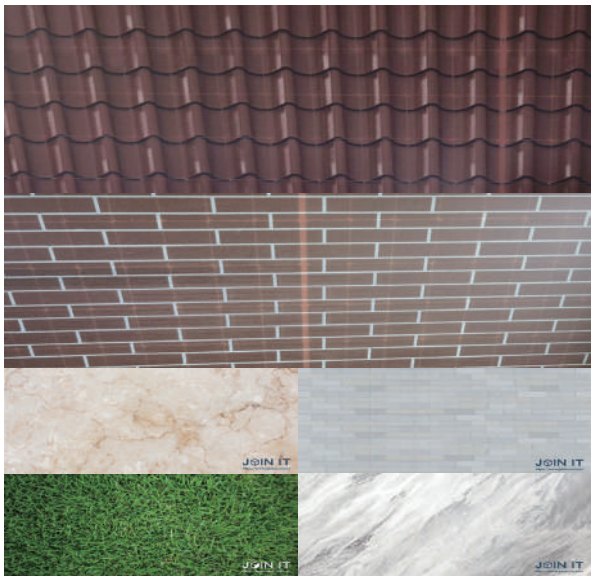
Renewable Energy Urban Applications – Infrastructure (Building Materials)

Various Building Material Pattern Designs

- Brick Tiles
- Marble
- Red Eaves
- Red Brick
- Grassland
- Various landscapes can be customized



Color-Painted Photovoltaic Exterior Wall (BIPV)

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Renewable Energy Urban Applications – Infrastructure (Roofing Materials)

Local Revitalization Integration Tests Our Wisdom

In a 2022 internet survey ranking unattractive urban features in Taiwan, moldy and rusty tin houses eaves ranked 3rd, and it's affecting Taiwan's international image.

"Dongdamen" Night Market, Hualien ,Taiwan

"Xiao Lu Ming" Restaurant , Taipei , Taiwan

Color-Painted Roof Tile Solar Panels

By replacing old tin roofs with Color-Painted solar panels, urban appearance can be improved while generating green electricity for use.

Color-Painted Photovoltaic Exterior Wall Demonstration

1. Construction has been completed and officially announced.
2. We Built a 14.48 kW amazing colo-painted vertical photovoltaic wall.
3. Completed comparison of effects between new/old photovoltaic panels with/without coatings.
4. For news links and videos, please visit: https://www.joinit.com.tw/data-81528 or QR Code

14.48 kW vertical color-painted PV wall, including side-by-side tests with new and recycled panels.

The right image shows the effect diagram of using customized Color-painted solar panels, where the PV exterior walls have the following effects:

1. Reduce the reflection issue
2. Coating undergoes special treatment for self-cleaning functionality
3. Suitable for circular economy marketing purpose
4. Recycle solar panels as original materials (near-zero carbon building materials), solving carbon emission problems while providing renewable energy, accelerating net-zero building process (across both embodied and operational carbon cycles)

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Future Development Trends & Potential Opportunities for Urban Green Electricity

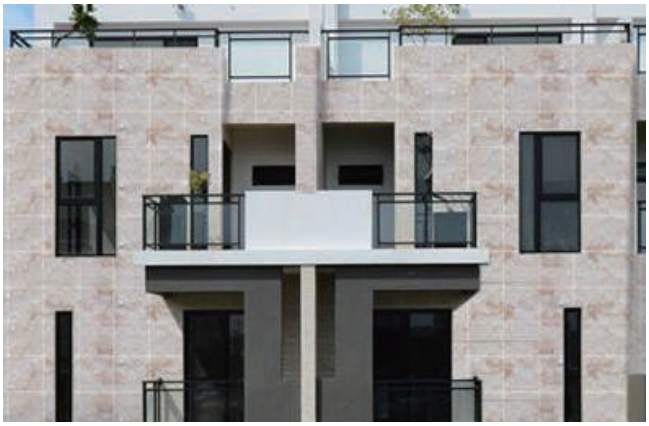
Road Signages

Sound Barrier Walls

Advertising Board Combined with Street Lights

Integration into Local Revitalization plan

Signboard



Integration into Building Materials

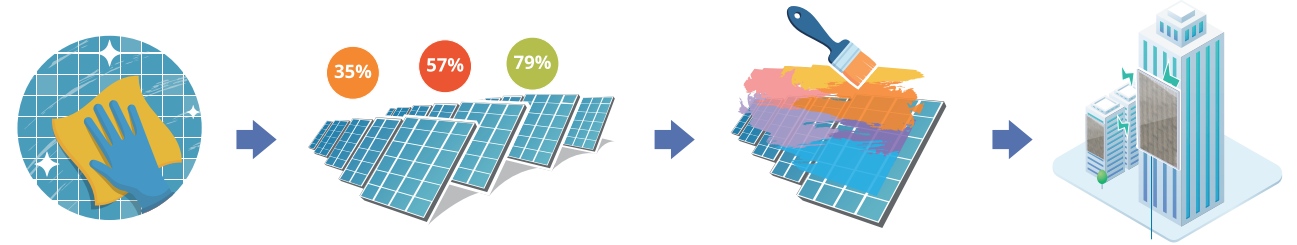
Solar Panel Recycling and Reuse

As solar panels around the world gradually reach the end of their life life, it is estimated that by 2025, the total volume of wasted PV modules will reach 78 million tons. If not properly handled, these wastes may cause heavy metal leakage into water sources and result in severe environmental pollution. However, most countries are still facing significant challenges in recycling and reusing solar panels. With an average lifespan of only 20–30 years, conventional recycling methods often involve crushing panels for use in road construction—an approach with limited value that also contributes to additional carbon emissions.

INFO

Traditional PV Recycling

PV Module "Re-Creation and Regeneration" Process:
Cleaning and Decontamination → Efficiency Testing and Grading → Decorative Repurposing → Façade Installation. Through this process, decommissioned panels are reborn in the cityscape — combining power generation with aesthetic value.
This approach not only reduces disposal pressure but also generates additional energy returns, transforming environmental burdens into sustainable assets



Cleaning & Adhesive Removal | Testing & Grading | Color-Painted Coating | Building Installation

Wasted panels discussion with ASE company

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Without Renewable Energy, Net-Zero is Just a Slogan

In terms of smart net-zero buildings, we transform urban buildings into circular buildings. The construction process incorporates circular economy design concepts, following the principles of 5R(Reduce, Reuse, Recycle, Rethink, and Repair). In addition to **using recyclable and circular building materials to reduce carbon emissions**, it is also necessary to install **solar panels and microgrid systems** to generate **renewable energy**, then this way will reduce the dependence on external power supply and electricity purchase costs.

More Information

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