

CLAIMS

1. Photovoltaic module (1) comprising
 - at least one photoactive component (2), such as a solar cell or a thin film, and
 - an encapsulant (3, 3') covering the at least one photoactive component (2) on at least one side,
 wherein the encapsulant (3, 3') is formed from a material having at a first temperature a first complex viscosity and at a second temperature a second complex viscosity, wherein the first complex viscosity is larger than the second complex viscosity, wherein the complex viscosity is determined according to Standard ASTM D5289 and/or ASTM D6204 and is measured at a frequency of 1 Hz and 10% strain, wherein the first temperature is between 70°C and 100°C and the second temperature is between 120°C and 160° C, and wherein the second complex viscosity is less than 100.000 Pa·s,
characterized in that the first complex viscosity amounts to at least 200.000 Pa·s.
2. Photovoltaic module according to claim 1, **wherein** the second complex viscosity is less than 50.000 Pa·s.
3. Photovoltaic module according to claim 1 or 2, **wherein** the first complex viscosity is at least 5 times, preferably at least 10 times, larger than the second complex viscosity.
4. Photovoltaic module according to one of the preceding claims, **wherein** the second complex viscosity is larger than 5.000, preferably larger than 9.000 Pa·s.
5. Photovoltaic module according to one of the preceding claims, **wherein** the first complex viscosity is less than 1E+10 Pa·s, preferably less than 1E+9 Pa·s.
6. Photovoltaic module according to one of the preceding claims, **wherein** the first temperature is between 75°C and 95°C, preferably between 80°C and 90°C, wherein preferably the first temperature amounts to 85°C.
7. Photovoltaic module according to one of the preceding claims, **wherein** the second temperature is between 125°C and 155°C, preferably between 130°C and 150°C, wherein preferably the second temperature amounts to 140°C.
8. Photovoltaic module according to one of the preceding claims, **wherein** the encapsulant (3, 3') is in direct contact with the at least one photoactive component (2) and/or wherein at least

one electrical interconnector (5) is sandwiched between the encapsulant (3, 3') and the photoactive component (2) and/or wherein the encapsulant (3, 3') holds at least one electrical interconnector (5) on the photoactive component(s) (2) and/or wherein the encapsulant (3, 3') is provided as a foil and/or as granules.

9. Photovoltaic module according to one of the preceding claims, **wherein** the material of the encapsulant (3, 3') has thermoplastic properties.
10. Photovoltaic module according to one of the preceding claims, **wherein** the material of the encapsulant (3, 3') contains a low density polyethylene (LDPE) material and/or a linear low density polyethylene (LLDPE) material and/or a medium density polyethylene (MDPE) material.
11. Photovoltaic module according to one of the preceding claims, **wherein** the encapsulant (3, 3') is formed from Polyethylenterephthalat (PET) and/or Polyolefine (PO) and/or Ethylenvinylacetat (EVA) and/or ionomer and/or Polyvinylbutyral (PVB).
12. Photovoltaic module according to one of the preceding claims, **wherein** the density of the material forming the encapsulant (3, 3') is less than $1,5 \text{ g/cm}^3$, and preferably larger than $0,7 \text{ g/cm}^3$.
13. Photovoltaic module according to one of the preceding claims, **wherein** the encapsulant (3, 3') is a foil layer having a thickness between $10\mu\text{m}$ and $500 \mu\text{m}$, preferably between $40\mu\text{m}$ and $400\mu\text{m}$, and/or wherein the encapsulant (3, 3') is at least 50% transparent for wave lengths of the visible spectrum.
14. Photovoltaic encapsulant (3, 3'), particularly an encapsulant foil or encapsulant granules, wherein the encapsulant (3, 3') is formed from a material having at a first temperature a first complex viscosity and at a second temperature a second complex viscosity, wherein the first complex viscosity is larger than the second complex viscosity, wherein the complex viscosity is determined according to Standard ASTM D5289 and/or ASTM D6204 and is measured at a frequency of 1Hz and 10% strain, wherein the first temperature is between 70°C and 100°C and the second temperature is between 120°C and 160°C , and wherein the second complex viscosity is less than $100.000 \text{ Pa}\cdot\text{s}$, preferably less than $50.000 \text{ Pa}\cdot\text{s}$,

characterized in that the first complex viscosity amounts to at least 200.000 Pa·s, wherein preferably at least one electrical interconnector (5) for interconnecting photoactive components (2) is attached to the encapsulant (3, 3').

15. Method of producing a photovoltaic module (1), comprising the step of encapsulating at least one photoactive component (2), such as a solar cell or a thin film, with an encapsulant (3, 3') according to claim 14, wherein preferably at least one electrical interconnector (5) is attached to the encapsulant (3, 3').