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The invention refers to the unconventional power sources, namely, to the solar power transformers. The solar cell includes a Si monocrystal having on its exterior surfaces a potential barier of MOS or Shottky type, as well as ohmic contacts applied on its exterior and back surfaces. On the monocrystal exterior and back surfaces there are formed a porous nanometric structure, and the potential barier volume charge field includes a porous nanometric structure.