

# Compositions related to solar power generation

What components make up a solar panel? This article explains the six key structural components--from front glass and solar cells to encapsulation materials, backsheet, frame and ...

Solar panels produce DC electricity, while the grid supplies AC electricity. To use both sources for common equipment, an inverter is needed to convert the solar system's DC to the same ...

Currently, crystalline silicon materials (including polysilicon and monocrystalline silicon) are the most important photovoltaic materials with a market share of more than 90%, and will remain ...

There are a variety of different semiconductor materials used in solar photovoltaic cells. Learn more about the most commonly-used materials.

Most panels on the market are made of monocrystalline, ...

Learn the basics of solar PV cells--their parts, construction, and performance--for smarter, efficient solar designs.

IntroductionPV DisconnectCharge ControllerAC Disconnect SwitchSystem MeteringConclusiondr. edwArd A. frAnklinSolar photovoltaic (PV) energy systems are made up of diferent components. Each component has a specific role. The type of component in the system depends on the type of system and the purpose. For example, a simple PV-direct system is composed of a solar module or array (two or more modules wired together) and the load (energy-using device) it pow...See more on extension.arizona Missing: CompositionsMust include: Compositions#b\_results .b\_vidAns{border-radius:6px;box-shadow:0 0 0 1px rgba(0,0,0,.05);padding:16px 20px;gap:10px;background:#fff}@charset "UTF-8";#b\_results .b\_ans.b\_vidAns{ box-shadow:none!important;padding:var(--smtc-gap-between-content-medium) 0!important;background:var(--bing-smtc-background-ctrl-fade-on-image-stop-0)}#b\_results #serpvidans.vsacf .mc\_vtvc,#b\_results #serpvidans.vsacf .mc\_vtvc\_th,#b\_results #serpvidans.vsacf .cico,#b\_results #serpvidans.vsacf .mc\_vtvc\_htb,#b\_results #serpvidans.vsacf .vrhc,#b\_results #serpvidans.vsacf .vrhcp,#b\_results #serpvidans.vsacf .vrhtc,#b\_results #serpvidans.vsacf .vrhtpc{border-radius:var(--mai-smtc-corner-list-card-default)}#b\_results #serpvidans.vsacf .mmlist .mc\_vtvc,#b\_results #serpvidans.vsacf .mmlist .mc\_vtvc .mc\_vtvc\_meta{margin:0}#b\_results #serpvidans.vsacf .mmlist .mc\_vtvc .mc\_vtvc\_meta .mc\_vtvc\_meta\_channel,#b\_results #serpvidans.vsacf .mmlist .mc\_vtvc .mc\_vtvc\_meta .mc\_vtvc\_meta\_row\_channel{color:var(--smtc-foreground-content-neutral-primary)}#serpvidans.vsacf,#serpvidans.vsacf .expctn .expbody,#serpvidans.vsacf .mmlist{display:flex;flex-direction:column;gap:var(--smtc-gap-between-content-medium)}#serpvidans.vsacf

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```
.cico{height:auto}#serpvidans.vsacf .mc_vtvc_ban_lo{top:0;right:auto}#serpvidans.vsacf .mc_cwvc .mc_vtvc
.mc_vtvc_meta,#serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta{height:auto;padding:var(--smtc-gap-between-content-xx-small) 0
var(--smtc-gap-between-content-xx-small)
var(--smtc-gap-between-content-medium);display:flex;flex-direction:column;justify-content:space-between}#
serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_title,#serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta
.mc_vtvc_title{color:var(--smtc-ctrl-link-foreground-brand-rest);font:var(--bing-smtc-text-global-body2);heig
ht:auto;display:-webkit-box;-webkit-line-clamp:2;-webkit-box-orient:vertical}#serpvidans.vsacf .mc_cwvc
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area,#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block_area,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block{display:flex;flex-direction:column;gap:var(--smtc-padding-ctrl-text-side)}#serpvidans.
vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area .mc_vtvc_meta_row,#serpvidans.vsacf
.mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row,#serpvidans.vsacf .mmlist
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area .mc_vtvc_meta_row,#serpvidans.vsacf .mmlist
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row
.mc_vtvc_meta_row{color:var(--smtc-foreground-content-neutral-primary);height:var(--mai-smtc-padding-car
d-default);font:var(--bing-smtc-text-global-caption1)}#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block_area .mc_vtvc_meta_row .mc_vtvc_meta_row_channel::before,#serpvidans.vsacf
.mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row
.mc_vtvc_meta_row_channel::before,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block_area .mc_vtvc_meta_row .mc_vtvc_meta_row_channel::before,#serpvidans.vsacf
.mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row
.mc_vtvc_meta_row_channel::before{content:" . "}#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block_area .mc_vtvc_meta_pubdate,#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block .mc_vtvc_meta_pubdate,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block_area .mc_vtvc_meta_pubdate,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block
.mc_vtvc_meta_pubdate{color:var(--bing-smtc-foreground-content-neutral-tertiary);padding-bottom:0}.vsacf
.mc_cwvc .mc_vtvc_con_rc,.vsacf .mmlist .mc_vtvc_con_rc{display:flex}.vsacf .mc_cwvc .mc_vtvc_con_rc
.mc_vtvc_meta_w,.vsacf .mmlist .mc_vtvc_con_rc .mc_vtvc_meta_w{height:auto}.vsacf
.b_title{padding-left:0}.vsacf .b_title
.mmtitle{font:var(--bing-smtc-text-global-subtitle1-strong);margin-bottom:0}.vsacf .b_title .mmtitle
a::after{content:"";margin:5px 5px 0 0;border-top:2px solid
var(--smtc-foreground-content-neutral-primary);border-right:2px solid
var(--smtc-foreground-content-neutral-primary);background-size:7px
7px;width:7px;height:7px;transform:rotate(45deg);display:inline-block;margin-left:4px}#serpvidans.vsacf
.b_title .mmtitle{margin-bottom:0}#serpvidans.vsacf .b_title .mmtitle
a{color:var(--smtc-foreground-content-neutral-primary)}#serpvidans.vsacf .cardless.mmlist
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.mc_vtvc_con_rc,#serpvidans.vsacf      .cardless.mmlist      .mc_vtvc_th{height:auto}#serpvidans.vsacf
.vsb_tr_c.va_tt{margin:0}#serpvidans.vsacf      .vtbc      .mv_vtvc_play,#serpvidans.vsacf      .vtbc
.mv_vtvc_play_ext{position:static}#serpvidans.vsacf      .va_tt
.mc_vtvc_ban_lo{display:block}#serpvidans.vsacf
.mc_bc{width:auto;border-radius:var(--smtc-ctrl-badge-sm-corner);padding:var(--smtc-padding-ctrl-text-side)
var(--smtc-gap-between-content-xx-small)}#serpvidans.vsacf      .rmts      .mc_bc
ems{display:none}#serpvidans.vsacf a.vsb_tr_t{color:var(--smtc-foreground-content-neutral-primary)}.vsacf
.va_tt      .vsb_tr_chd      .mc_vtvc_th_dock.rmoverlay{height:36px}.vsacf      .va_tt      .vsb_tr_chd
.mc_vtvc_th_dock{height:92px;background:linear-gradient(180deg,var(--bing-smtc-background-ctrl-fade-on-i
mage-stop-0) 0%,var(--mai-smtc-background-ctrl-on-image-rest) 100%)}.vsacf .va_tt a.vsb_tr_t{padding:0
0;font:var(--bing-smtc-text-global-body-2-alt-strong)}.vsacf      .va_tt      .vsb_tr_chd      .mc_vtvc
.mc_vtvc_meta,.vsacf      .va_tt      .vsb_tr_chd      .mc_vtvc
.mc_vtvc_title{color:var(--mai-smtc-foreground-ctrl-on-image-rest)}.vsacf
span.vcmt_ctt{font:var(--bing-smtc-text-global-caption2);margin:var(--smtc-gap-between-content-xx-small) 0
0;height:16px}#serpvidans.vsacf      .vsb_tr_chd      .mc_vtvc_tot      .mc_vtvc_title
strong{font-size:14px;line-height:20px;display:unset}#serpvidans.vsacf      .va_tt      .b_sldrp
.slide:not(:first-child){margin-left:var(--smtc-gap-between-content-small)}#serpvidans.vsacf      .va_tt
.vsb_tr_chd      .mc_vtvc
.mc_vtvc_title{white-space:normal;display:-webkit-box;-webkit-line-clamp:2;-webkit-box-orient:vertical}#se
rpvidans.vsacf      .b_module_expansion_control      .b_btnContainer
.b_CompactExpansion{background-color:var(--bing-smtc-background-ctrl-neutral-rest);display:flex;justify-co
ntent:center;align-items:center;gap:4px;width:fit-content;height:auto;padding:8px      12px}#serpvidans.vsacf
.b_module_expansion_control      .b_btnContainer      .b_CompactExpansion
.b_CompactExpansionBtnText{font:var(--bing-smtc-text-global-caption1-strong);color:var(--bing-smtc-foregr
ound-content-brand-rest)}#serpvidans.vsacf      .b_module_expansion_control      .b_btnContainer
.b_CompactExpansion      .b_arrow{display:flex;margin:0;height:auto}#serpvidans.vsacf
.b_module_expansion_control      .b_btnContainer      .b_CompactExpansion      .b_arrow
path#Shape{fill:var(--bing-smtc-foreground-content-brand-rest)}#serpvidans.vsacf
.b_module_expansion_control
.b_btnContainer::after{content:"";position:absolute;width:100%;bottom:20px;left:0;height:1px;border-radius:
1px;background:var(--smtc-stroke-ctrl-on-neutral-rest)}#b_results
.b_ans.b_vidAns{box-shadow:none;padding:12px      20px      0}#b_results      .b_ans.b_vidAns
.vasac{padding:unset;margin:0}#b_results .b_ans.b_vidAns .vsa .b_attribution{padding-bottom:0}#b_results
.b_ans.b_vidAns      .cardless      .salink{margin:0}#b_results      .b_ans.b_vidAns      .mmlist
.mc_vtvc{margin-top:10px}#b_results      .b_ans.b_vidAns      .mmlist      .mc_vtvc
.mc_vtvc_meta{display:flex;flex-direction:column;justify-content:space-between;margin:0      10px      4px
12px}#b_results      .b_ans.b_vidAns      .mmlist      .mc_vtvc      .mc_vtvc_meta
.mc_vtvc_meta_channel{color:#111}#b_results      .b_ans.b_vidAns      .mmlist      .mc_vtvc      .mc_vtvc_meta
.mc_vtvc_meta_row_channel,#b_results      .b_ans.b_vidAns      .mmlist      .mc_vtvc      .mc_vtvc_meta
.mc_vtvc_meta_block_area{color:#666}#b_results      .b_ans.b_vidAns      .mmlist      .mc_vtvc      .mc_vtvc_meta
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.mc_vtvc_meta_block_area{bottom:0;height:unset}.b_dark .vsa.cardless
.mc_vtvc{background-color:unset}.mmtitle>a{display:block}.mc_fh{height:100%;border-radius:6px}.mc_tc_
bs{overflow:hidden}.mmlist .mc_vtvc .mc_vtvc_meta { padding: 12px 16px 16px 16px; } .mmlist .mc_vtvc
.mc_vtvc_meta_w { height: 112px; margin-top: -0px; } .mmlist .mc_vtvc .mc_vtvc_title { height: 44px;
line-height: 22px; margin-bottom: 0px; margin-top: 0px; } .mmlist .mc_vtvc .mc_vtvc_meta_block_area {
height: 40px; } .mmlist .mc_vtvc .vtmu, .mmlist .mc_vtvc .vtpl { bottom: 120px; } .mmlist .mc_vtvc_th_dock
{ height: 112px; } .mmlist .mc_vtvc_th .cico { height: 131px; }
.mc_vtvc{background-color:#fff;box-shadow:0 0 0 1px
rgba(0,0,0,.05);line-height:0;margin:0;position:relative;border-radius:6px;overflow:hidden}.mc_vtvc.noshado
w{box-shadow:none}.mc_vtvc_con_rc{border-radius:6px;overflow:hidden;position:relative}.mc_vtvc>a{colo
r:#71777d;display:block;text-decoration:none;width:100%}.mc_vtvc>a:focus::after{outline:2px solid
#00a89d;width:100%;height:100%;content:"";outline-offset:-2px;position:absolute;top:0;left:0}.mc_vtvc_th{ba
ckground-color:#d5d5d5;position:relative}.mc_vtvc_th
.cico{border-radius:0}.mc_vtvc_ban_lo,.mc_vtvc_ban_up{position:absolute;vertical-align:middle}.mc_vtvc_
ban_lo{bottom:0}.mc_vtvc_ban_up{top:0}.mc_vtvc_title{font-weight:normal;margin-bottom:11px;overflow:
hidden;color:#111;height:54px;line-height:18px}.mc_vtvc_title
a{display:inline-block;color:#111}.mc_vtvc_title
a:hover{text-decoration:underline}.mc_vtvc_src_ico{float:left;margin-right:4px}.mc_vtvc_act{height:16px;m
argin-top:-40px;padding:12px
8px;z-index:1}.mc_vtvc_actc{right:16px;bottom:16px;position:absolute;display:inline-block;z-index:1}.mc_v
tvc_act_sep{border-top:1px solid #d5d5d5;height:40px;margin:0 8px}.mc_vtvc_fh
.mc_vtvc_act_sep,.mc_vtvc_fh .mc_vtvc_act{visibility:hidden}#serpvidans
.b_topTitle{margin-bottom:8px}.mc_vtvc_htc{width:100%;height:100%;position:absolute;top:0;bottom:0;left
:0;right:0}.mc_vtvc_htb{width:100%;height:100%;background:rgba(0,0,0,.7);position:absolute;top:0;bottom:
0;left:0;right:0}.mc_vtvc_ht{width:100%;padding:0
16px;line-height:16px;color:#fff;text-decoration:underline;word-break:break-word;box-sizing:border-box;vert
ical-align:middle;text-align:center}.mc-vtvc_th_live_b{background-color:#c80000;color:#fff;display:inline-bl
ock;padding:2px 8px;font:11px/14px
Arial;border-radius:2px;text-transform:uppercase;height:15px;width:26px;position:absolute;left:8px;top:110p
x}.isvctrl .isv
.mc_vtvc_ban_up{left:0;right:initial}.mc_vtvc_ban_lo,.mc_vtvc_ban_up{right:0}.vt_text.b_IRight
.b_ILeft{margin:0 0 0 1px;height:14px;line-height:14px;padding:2px
8px;background:rgba(0,0,0,.75);border-radius:2px;font-weight:bold}.mc_vthtb{width:100%;height:100%;bac
kground:rgba(0,0,0,.7);position:absolute;top:0;bottom:0;left:0;right:0;display:table}.mc_vtht{width:100%;pad
ding:0
16px;line-height:16px;color:#fff;text-decoration:underline;word-break:break-word;box-sizing:border-box;vert
ical-align:middle;text-align:center;display:table-cell}.vt_text.b_IRight .b_ILeft{margin:0 0 0
1px;height:14px;line-height:14px;padding:2px
8px;background:rgba(0,0,0,.75);border-radius:2px;font-weight:bold}.emptyStyleForDebuggingPurpose{top:0
}.emptyStyleForDebuggingPurpose{top:0}.mc_vtvc_center_play{width:32px;height:32px;background-size:c
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## Compositions related to solar power generation

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ontain;position:absolute;margin:auto;bottom:0;top:0;left:0;right:0;box-shadow:none;border-radius:0}.mc_vtvc
_center_play.rmvbg{width:32px;height:32px;background-image:none}.mc_vtvc_htb,.mc_vtvc_ht{display:no
ne}.vt_onhv
.mc_vtvc_htb{display:table}.vt_onhv
.mc_vtvc_ht{display:table-cell}.mc_vtvc_center_play{display:inline-block}.vt_onhv
.mc_vtvc_center_play{display:none}.mc_vtvc .vtmu,.mc_vtvc .vtpl{bottom:163px}.vsarf .mc_vtvc
.vtmu,.vsarf .mc_vtvc .vtpl{bottom:122px}.svarh #mmcar .mc_vtvc .vtmu,.svarh #mmcar .mc_vtvc
.vtpl{bottom:137px}.svarht #mmcar .mc_vtvc .vtmu,.svarht #mmcar .mc_vtvc
.vtpl{top:8px;left:8px}.mc_vtvc_center_play{background-image:url(data:image/svg+xml,%3Csvg%20width
%3D%2232%22%20height%3D%2232%22%20viewBox%3D%220%200%2032%2032%22%20fill%3D%22
none%22%20xmlns%3D%22http%3A%2F%2F%2F2000%2Fsvg%22%3E%0D%0A%20%20%20%20%3Cr
ect%20width%3D%2232%22%20height%3D%2232%22%20rx%3D%2216%22%20fill%3D%22black%22%
20fill-opacity%3D%220.6%22%2F%3E%0D%0A%20%20%20%20%3Cpath%20d%3D%22M14.2354%201
0.1923C13.2355%209.62986%2012%2010.3524%2012%2011.4997V20.5C12%2021.6472%2013.2355%202
2.3698%2014.2354%2021.8073L22.2356%2017.3073C23.2551%2016.7339%2023.2551%2015.2661%2022.
2357%2014.6926L14.2354%2010.1923Z%22%20fill%3D%22white%22%20fill-opacity%3D%220.9%22%2
F%3E%0D%0A%3C%2Fsvg%3E)}.mmlist .mc_vtvc{margin:10px 1px 0}.mmlist
.mc_vtvc_con_rc{display:flex}.cardless .mmlist .mc_vtvc_con_rc{height:112px}.mmlist .mc_vtvc
.mc_vtvc_meta{display:flex;flex-direction:column;justify-content:space-between;margin:0 10px 4px
12px;padding:0}.mmlist
.mc_vtvc_title{font-weight:400;font-size:16px;height:44px;line-height:22px;margin-bottom:0;margin-top:0;c
olor:unset}.mmlist .mc_vtvc_meta_row{font-size:13px}.mmlist .mc_vtvc
.mc_vtvc_meta_block_area{height:unset}.mmlist .mc_vtvc .vtmu,.mmlist .mc_vtvc
.vtpl{bottom:8px}.cardless .mmlist .mc_vtvc{box-shadow:none}.cardless.mmlist
.mc_vtvc_center_play{width:32px;height:32px}.cardless.mmlist
.mc_vtvc_title{font-size:16px;color:unset}.cardless.mmlist
.mc_vtvc_meta_row{line-height:20px}.cardless.mmlist
.mc_vtvc_meta_pubdate{padding-bottom:2px;color:#666}.cardless.mmlist .mc_vtvc_th,.cardless.mmlist
.mc_vtvc_th .cico,.cardless.mmlist .mc_vtvc_th div.rms_img{border-radius:6px}.cardless.mmlist
.mc_vtvc_th{height:111px}.cardless.mmlist
.mc_vtvc_htc{border-radius:6px;overflow:hidden}#serpvidans.vasac.cardless{box-shadow:none}.cardless.m
mmlist .mc_bc{padding:2px 8px;line-height:14px;border-radius:2px;font-weight:normal}.mmlist
.mc_vtvc: hover
.mc_vtvc_title{text-decoration:underline}.mc_vtvc_meta{box-sizing:border-box;display:inline-block;line-hei
ght:18px;position:relative;width:100%}.mc_vtvc_meta_block{bottom:0;position:absolute;width:100%}.mc_v
tvc_meta_row{line-height:16px;font-size:11px;height:17px;overflow:hidden;text-overflow:ellipsis;white-spac
e:nowrap}.mc_vtvc_meta_row a{display:inline-block}.mc_vtvc_meta_row
a:hover{text-decoration:underline}.mc_vtvc_meta_block_area{position:relative}.mc_vtvc_meta_block,.mc_v
tvc_meta_block a{color:#444}.b_dark
.mc_vtvc_meta_block{color:#edebe9}.mc_vtvc_meta_row>:nth-of-type(n+2)::before{content:"
"}.mc_vtvc_meta_row .mc_vtvc_meta_row_channel::before{content:">

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}.mc_vtvc_kmt_title{line-height:18px;padding-bottom:4px;font-weight:bold;color:#00809d;text-transform:u
ppercase;font-size:11px}.mc_vtvc_kmt,.mc_vtvc_con_rc.onhov .wkmt
.mc_vtvc_meta_row,.mc_vtvc_con_rc.onhov .wkmt .tbc_tt{display:none}.mc_vtvc_con_rc.onhov .wkmt
.mc_vtvc_title{max-height:18px;margin-bottom:18px;overflow:hidden}.mc_vtvc_con_rc.onhov.mmsts
.mc_vtvc_title{visibility:hidden}.mc_vtvc_con_rc.onhov
.mc_vtvc_kmt{display:block}.mc_vtvc_kmt_content
.b_factrow{line-height:17px;font-size:11px;max-height:34px;overflow:hidden;text-overflow:ellipsis;padding:
0 16px 0 0;color:#444}.mc_vtvc_meta
.mc_vtvc_kmt_title{line-height:18px}.mc_vtvc_title:hover{text-decoration:none}.mc_vtvc_meta_pubdate{co
lor:#444;padding-bottom:3px}.mc_vtvc_meta_channel{color:#444}.mc_vtvc_meta_w,.mc_vplvc_meta_w{po
sition:relative}.mc_vtvc_meta_bg_w,.mc_vplvc_meta_bg_w{height:100%;width:100%;overflow:hidden;posit
ion:absolute;top:0}.mc_vtvc_meta_bg_w .cico,.mc_vplvc_meta_bg_w
.cico{border-radius:0;overflow:visible}.dg_u .mm_vidch_th_c{overflow:visible}.dg_u .mm_vidch_th_bg
img{margin-top:-20px}.emptyStyleForDebuggingPurpose{top:0}.mc_vtvc_meta_w
.mc_vtvc_meta{background:rgba(255,255,255,.75)}.mc_vtvc_meta_bg_w img,.mc_vtvc_meta_bg_w
.mc_vtvc_cb_w{filter:blur(25px);transform:scale(1.2)}body{--video-metadata-channel-color:#3c3c3c}body.b
_dark{--video-metadata-channel-color:unset}.vsarf .mc_vtvc_meta_pubdate{color:unset}.vsarf
.mc_vtvc_meta_channel{color:var(--video-metadata-channel-color)}.vsarf .mc_vtvc .mc_vtvc_meta_w
.mc_vtvc_title,.vsarf .mc_vtvc .mc_vtvc_meta_w .mc_vtvc_title strong{font-weight:bold}.vsarf
.mc_vtvc_meta_w .mc_vtvc_meta_row{font-size:13px}.emptyStyleForDebuggingPurpose{top:0}.vsarf
.mc_vtvc_th
.cico{height:132px}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{top:0}.empt
yStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurp
ose{top:0}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{top:0}.vtbc
.mv_vtvc_play{display:inline-block;position:absolute;bottom:8px;left:9px;height:8px;width:7px}.vtbc
.mv_vtvc_play_ext{background:url(/rp/Lp38sn_O4jegSK0IHxZVxyp-yKQ.png) -172px
-31px;display:inline-block;height:8px;width:12px;position:absolute;bottom:8px;left:6px}.vtbc
.pivot{height:20px;width:8px;min-width:8px}.vtbc
.mv_vtvc_play{background:url(
MAAADHKvg1AAAIVBMVEX////////////////////9/gMdvAAAACnRSTIMAETNEVWaImbv
uo4D1oAAAAB9JREFUCB1jmMoABKuaQcSqQhCxKgFGgLhNQIkpQAwA8zkLyQA16F0AAAASUVO
RK5CYII=)}.mc_bc_w{height:18px;padding:8px;text-align:right}.mc_bc{background-color:rgba(0,0,0,.75);p
adding:2px
8px;line-height:14px;color:#fff;display:inline-block;vertical-align:middle;border-radius:2px;font-weight:bold}
.mc_bc_w .pivot{text-align:center;margin-right:1px;height:14px}.vsarr .mmgrid .mc_bc_w
.mc_bc{background-color:rgba(0,0,0,.75);opacity:1}.mmsi{height:16px;width:16px;position:relative;top:5px;
padding-right:var(--smtc-gap-between-content-xx-small)}.mmsi-microsoftnews,.mmsi-msn{top:3px}.vrhdata
{display:none}.mmgrid>div{width:197px;display:inline-block;margin-right:8px;margin-bottom:8px;box-shad
ow:0 0 0 0 1px
rgba(0,0,0,.05);position:relative;vertical-align:top;overflow:hidden;white-space:normal;border-radius:6px}.vs

```

## Compositions related to solar power generation

```

arr .mmgrid>div,.vsarr1stbig .mmgrid>div{ margin-right:8px;margin-bottom:8px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta{height:auto}#serpvidansrr .mc_vtvc
.mc_vtvc_title{display:-webkit-box;-webkit-line-clamp:2;-webkit-box-orient:vertical}.mmgrid
.mc_tc{border:0}.vsa .mmgrid>div:nth-child(3n){margin-right:0}.vsa
.b_moreLink{padding-top:4px}#serpvidansrr
.mc_vtvc_meta_row{line-height:18px;font-size:100%;height:17px}.vsarr
.mmgrid>div:nth-child(2n){margin-right:0}#serpvidansrr .mc_vtvc .vtmu,#serpvidansrr .mc_vtvc
.vtpl{bottom:128px}.vsarr1stbig .mmgrid>div:nth-child(2){margin-right:0}#serpvidansrr.uipolish
.mc_vtvc_meta_pubdate,#serpvidansrr.uipolish .mc_vtvc_meta_channel,#serpvidansrr.uipolish #vidans2
.b_videocard .video_metadata .video_source{color:#767676}#serpvidansrr #vidans2 .b_videocard
.video_metadata_container,#serpvidansrr #vidans2 .b_videocard .video_metadata_container
.video_metadata>h3{ width:100% }@media(max-width:1362.9px){#serpvidansrr
.mmgrid>div{ width:168px;height:206px}#serpvidansrr .mmgrid>div .cico,#serpvidansrr .mmgrid>div .cico
.rms_img{ width:168px;height:100px}#serpvidansrr .mc_vtvc .mc_vtvc_meta{padding:12px}#serpvidansrr
.mc_vtvc .mc_vtvc_title{height:32px;line-height:16px;margin-bottom:16px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta_block_area{height:34px}#serpvidansrr
.mc_vtvc_meta_row{line-height:15px;font-size:13px;height:15px}#serpvidansrr
.mc_vtvc_meta_pubdate{padding-bottom:4px}#serpvidansrr .mc_vtvc .vtmu,#serpvidansrr .mc_vtvc
.vtpl{bottom:114px}#serpvidansrr #vidans2 .b_videocard .videoPlayer,#serpvidansrr #vidans2 .b_videocard
.videoPlayer .cico,#serpvidansrr #vidans2 .b_videocard .videoPlayer .cico
.rms_img{ width:343px!important;height:194px!important;margin-right:0} }@media(max-width:1274.9px){#s
erpvidansrr .mmgrid>div{ width:124px;height:164px}#serpvidansrr .mmgrid>div .cico,#serpvidansrr
.mmgrid>div .cico .rms_img{ width:124px;height:76px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta{padding:8px}#serpvidansrr .mc_vtvc
.mc_vtvc_title{height:32px;line-height:16px;margin-bottom:12px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta_block_area{height:28px}#serpvidansrr
.mc_vtvc_meta_row{line-height:13px;font-size:11px;height:13px}#serpvidansrr
.mc_vtvc_meta_pubdate{padding-bottom:2px}#serpvidansrr .mc_vtvc .vtmu,#serpvidansrr .mc_vtvc
.vtpl{bottom:96px}#serpvidansrr #vidans2 .b_videocard .videoPlayer,#serpvidansrr #vidans2 .b_videocard
.videoPlayer .cico,#serpvidansrr #vidans2 .b_videocard .videoPlayer .cico
.rms_img{ width:256px!important;height:144px!important;margin-right:0}#serpvidansrr .maskthumb
.mc_bc_w{padding:8px 4px 4px 8px}#serpvidansrr.withsplitline
.mmgrid>div:nth-last-child(1),#serpvidansrr.withsplitline
.mmgrid>div:nth-last-child(2){margin-bottom:24px}#serpvidansrr.withsplitline .mmgrid{border-bottom:1px
solid #ecec; margin-bottom:16px}#serpvidansrr #vidans2 .b_videocard
.video_metadata{max-width:auto;padding:12px 16px}#serpvidansrr #vidans2
.b_videocard{margin-bottom:12px;box-shadow:0 0 1px rgba(0,0,0,.05),0 2px 3px
rgba(0,0,0,.1);border-radius:6px}#serpvidansrr .b_rich{padding-top:0}#serpvidansrr #vidans2
.videoPlayer{border-radius:6px 6px 0 0;overflow:hidden}#serpvidansrr #vidans2 .b_videocard
.video_metadata>h3{ white-space:nowrap;overflow:hidden;text-overflow:ellipsis;-webkit-line-clamp:1;line-he

```

# Compositions related to solar power generation

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ight:15px;height:15px;font-size:13px;color:#000;margin-bottom:20px;font-family:"Arial",Helvetica,Sans-Seri
f;font-style:normal;display:block}#serpvidansrr.vsarr1stbig #vidans2 .b_videocard .video_metadata
.actionmenu{display:none}#serpvidansrr #vidans2 .b_videocard .video_summary,#serpvidansrr #vidans2
.b_videocard .video_source{line-height:15px}#serpvidansrr #vidans2 .b_videocard .videoPlayer
.vtbc{right:0}.vrhc line.nhvpv .pffvi,.vrhc line.nhvpv[data-tps="S"] .pffvt,.vrhc line.nhvpv[data-tps="M"]
.pffvt,.vrhc line.nhvpv[data-tps="L"] .pffvt{display:inline-flex}.vrhc line.nhvpv .vrhct.pffv
.vrhol{display:none}.vrhc line.nhvpv .vrhct.pffv
.player_ol{background:var(--mai-smtc-background-ctrl-on-image-hover);transition:background-color
.5s;display:flex;align-items:center;justify-content:center;padding:var(--smtc-gap-between-content-x-small);ga
p:var(--smtc-gap-between-content-x-small);box-sizing:border-box}.mc_vtvc_th img{transition:all .3s
ease-out}.nhvpv+.mc_vtvc_th
img{transform:scale(1.1)}.smtplayerhtml5{height:100%;width:100%;overflow:hidden}.smtplayerhtml5
video{min-height:100%;min-width:100%}.smtplayerhtml5
.videoplaying{background-color:#000}.smtplayerhtml5.hide{display:none}.pffvt{display:none;color:var(--ma
i-smtc-foreground-ctrl-on-image-rest);font:var(--bing-smtc-text-global-subtitle2-strong)}.pffvi{mask:url(/rp/ui
07wU6K7FR_inzG7DRbP1i8fGo.svg) center
no-repeat;mask-size:12px;background:var(--bing-smtc-background-card-on-image-default);width:20px;height
:20px;flex-shrink:0;align-self:flex-start}[data-tps="L"]
.pffvt{font:var(--bing-smtc-text-global-subtitle2-strong)}[data-tps="L"]
.pffvi{width:22px;height:22px;mask-size:16px}[data-tps="S"] .pffvt{font-size:0}[data-tps="S"]
.pffvi{width:24px;height:24px;mask-size:24px;align-self:center}.hvpv.h5s
.pffvt{display:inline-flex}.hvpv.h5s .vrhct.pffv .vrhol{display:none}.hvpv.h5s .vrhct.pffv
.player_ol{background:var(--mai-smtc-background-ctrl-on-image-hover);transition:background-color
.5s;display:flex;align-items:center;justify-content:center;padding:var(--smtc-gap-between-content-x-small);ga
p:var(--smtc-gap-between-content-x-small);box-sizing:border-box}.pffvt{text-decoration:underline}.vrhct
.vrhol{position:absolute;width:100%;height:35px;max-height:35px;bottom:0;left:0;padding:0;background:none
;display:block;z-index:9}.vrhct .vrhol.hide,.vrhct .vrhol
.hide{display:none}.vrhot{white-space:nowrap;text-overflow:ellipsis;overflow:hidden;display:inline-block;po
sition:absolute;max-width:240px;height:18px;line-height:14px;margin-left:8px;top:10px;left:0;right:0;border-
radius:2px;padding-right:8px}.vrhot div{display:inline-block}.vrhot
nt{color:#fff;font-size:11px;font-weight:bold;background-color:rgba(0,0,0,.75);padding:2px
8px;margin-left:0;top:0;box-sizing:border-box;position:relative}.vrhc
.ricons{position:absolute;right:8px;top:10px;left:auto;bottom:auto;height:18px;display:inline-block;cursor:poi
nter}.vrhol.icons_1 .vrhot{margin-right:27px}.vrhol.icons_2 .vrhot{margin-right:49px}.vrhol.icons_3
.vrhot{margin-right:79px}.vrhol .vrhot
nt,.vsb_tr_chd .vrhol.icons_1
.vrhot{margin-right:0}.vpb{position:absolute;display:block;bottom:0;left:0;height:4px}.vpb
div{position:absolute}.vpb
nt{width:0;background:#fff}.vpb
nt.test{display:none}.vpb.back{background-color:#999}.vrhct
.vrhol.npb{height:36px;max-height:36px}.vrhol
.vadda{width:22px;height:18px;padding:0;margin-right:0;margin-left:2px;bottom:0;position:relative;display:i

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# Compositions related to solar power generation

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nline-block;z-index:1;background:rgba(0,0,0,.75);border-radius:2px;overflow:hidden}.vrhol
.vadda.hide{display:none}.vrhol .vadda .mc_vfaa{margin:3px 5px}.ricons .vol{float:left}.ricons
.adultFlag{float:right}.vol{width:22px;height:18px;bottom:0;margin-left:1px;margin-right:1px;position:relati
ve;display:inline-block}.vol.hide,.vol .hide{display:none}.vol
.bg{background:rgba(0,0,0,.75);border-radius:2px}.vol.bg,.vol .nt{position:absolute;bottom:0}.vol
.vol.bg.volnb{border-radius:0 0 2px 2px}.vol .volsliderHandle.bg{border-radius:2px 2px 0 0}.vol .nt
.volsliderHandle{height:70px;display:none;width:22px;float:left;bottom:18px;position:absolute;display:block
}.vol .nt .volsliderHandle.hide{display:none}.volsliderHandle
.vsb{height:54px;width:4px;background-color:#999;margin:9px auto
8px;position:relative;display:block;border-radius:2px}.volsliderHandle
.vsh{height:6px;width:14px;padding:9px 7px 9px 7px;margin:0
-12px;display:block;position:absolute;top:30px}.volsliderHandle .vsh.hide{display:none}.volsliderHandle
.vshi{height:4px;width:14px;background-color:#fff;border-radius:2px}.volMuteIcon{width:16px;height:14px;
margin:2px
4px;float:left}.volMuteHandle{width:22px;height:18px}.vo{background:url(/rp/fFZxBXEIP9WYOO0jhTaEl
yLhEVU.svg) no-repeat}.vm{background:url(/rp/fsX-ZVd03wB2TL0vmQJxSp4U9vs.svg)
no-repeat}.vl{background:url(/rp/YXYMPC1Rry_XJGc7Yg8lR4B2eEs.svg)
no-repeat}.vf{background:url(/rp/NoslR4amKTs1zYxWy3laZN3HRk.svg)
no-repeat}@media(forced-colors:active){.vol{forced-color-adjust:none}.vrhc .line .vt_vp,.vrhc.popout
.vt_vp,.vrhc.mousefollow
.vt_vp{position:absolute;bottom:0;border:hidden;padding:0;top:0;left:0;z-index:3}.vrhc
.hide{display:none}.vrh_clc .vt_vp,.vrh_clc .vrhc .vrhi,.vrh_clc .player_ol{cursor:pointer}.vrh_clc
.cico{border-radius:0}.vrhc{border:hidden;top:0;left:0;padding:0}.vrhc.mousefollow .vrhc,.vrhc.popout
.vrhc{background-color:#999}.vrhtpc.load
.player_ol{background:url(/rp/J_o2maogFDeUOsovPjL-ofEuxJ4.gif) center center no-repeat}.vrhc .line .vrhc
.vrhi,.vrhc.popout .vrhc .vrhi,.vrhc.mousefollow .vrhc
.vrhi{position:absolute!important;border:hidden;z-index:2;padding:0;left:0;top:0}.player_ol{position:absolute
;width:100%;height:100%;bottom:0;border:hidden;z-index:7}.vrhc.popout,.vrhc
.line,.vrhc.mousefollow{border-radius:6px;overflow:hidden;display:table-row-group;background:none}.vrhc.p
opout,.vrhc.mousefollow{z-index:4;box-shadow:0 4px 4px rgba(0,0,0,.1),0 2px 80px rgba(0,0,0,.2)}.vrhc
.line{z-index:1;margin:0}.vrhc.popout,.vrhc .line{position:absolute;top:0}.vrhc.popout{border:1px solid
#fff}.vrhc.mousefollow{position:fixed}.vrhcpc{position:relative;top:0;left:0;display:table-row}.vrhcpc
.vrhc{position:relative;overflow:hidden}.vrhc.hide{display:none}@keyframes
vh_fadein{from{opacity:0}to{opacity:1}}.vrhc.not(.hide){animation:vh_fadein 250ms}.vrhc .line
img{color:transparent}.vrhc
.line.fullsize{height:100%}.vrhc,.vrhc.hover,.vrhc.link,.vrhc.active,.vrhc.visited{color:#000;text-decoration:no
ne}.vrhc.vrh_clc{cursor:pointer}.a.hover-anchor{display:block;height:100%;width:100%;text-decoration:none
}.vrhstat{height:0;overflow:hidden}.vsb_tr_c{position:relative;width:100%;overflow:hidden;background:#1d
1b28;height:583px;margin-bottom:16px}.vsb_tr_c.tr_nh{height:294px}.vsb_tr_c .mm_vrc .h2,.vsb_tr_c
.mm_vrc .see_more{display:none}.vsb_tr_c .mm_vrc>div{padding-bottom:20px}.vsb_tr_c

```

```
.vsb_tr_t{position:absolute;top:16px;left:160px;font:normal 16px/19px
"Arial",Helvetica,Sans-Serif;font-weight:700;color:#fff;z-index:1}.vsb_tr_c
.vsb_tr_t::after{width:17px;height:12px;display:inline-block;background-size:7px
12px;background-repeat:no-repeat;background-position-x:right;opacity:.7;content:""}.vsb_tr_c
.vsb_tr_t:hover::after{opacity:1}.vsb_tr_c .mm_vrc
.mc_vtvc{background-color:#585858;border-radius:6px}.vsb_tr_c .mm_vrc
.mc_vtvc_con_rc{border-radius:6px}.vsb_tr_c .vsb_tr_chd{position:absolute;bottom:0;width:100%}.vsb_tr_c
.onhov .mc_vtvc_ban_lo{display:none}.vsb_tr_chd .mc_vtvc_tot
.mc_vtvc_title{line-height:15px}.vsb_tr_chd .mc_vtvc_tot .mc_vtvc_meta_row,.vsb_tr_chd .mc_vtvc_tot
.mc_vtvc_meta_row a{color:#dadada}.vsb_tr_chd .grad_b{top:30%;height:auto}.vsb_tr_chd .mc_vtvc_tot
.mc_vtvc_meta_row{font-size:12px;line-height:16px;height:16px}.vsb_tr_chd .mc_vtvc_tot
.meta_pd_content{display:none}.vsb_tr_chd .mc_vtvc_tot .mc_vtvc_title strong{font-weight:500}.vsb_tr_c
.slide video{object-fit:cover}.vsb_tr_c .mc_vtvc_th .cico{width:100%;height:100%}.vsb_tr_c
.vrhcac{width:647px;position:absolute;width:calc(42% - 160px);bottom:200px;margin:0 0 0
160px;height:auto;padding:0;pointer-events:auto}.vsb_tr_c .vrhcac .mc_vtvc_title{font:normal 30px/35px
"Arial",Helvetica,Sans-Serif;font-weight:700;height:70px;overflow:hidden;color:#fff;text-overflow:ellipsis;di
splay:-webkit-box;-webkit-box-orient:vertical;-webkit-line-clamp:2}.vsb_tr_c .vrhcac
.mc_vtvc_meta_block_area{height:50px;margin:12px 0 0 0}.vsb_tr_c .vrhcac
.mc_vtvc_meta_row{font:normal 13px/15px "Arial",Helvetica,Sans-Serif;margin:5px 0 5px
0;color:#dadada}.vsb_tr_c .mm_vrc .b_overlay .btn.bigrounded .cr>div,.vsb_tr_c .mm_vrc .b_overlay
.btn.bigrounded .cr>div:hover{background-image:url(/rp/qA6EopzJjTm5qQJvnXlrWGNP778.svg)}.vsb_tr_c
.vsb_tr_t::after{background-image:url(data:image/svg+xml,%3Csvg%20width%3D%227%22%20height%3D
%2214%22%20viewBox%3D%220%200%207%2014%22%20fill%3D%22none%22%20xmlns%3D%22http
%3A%2F%2F%2F2000%2Fsvg%22%3E%0D%0A%20%20%20%20%3Cpath%20d%3D%22M0.186925%2
01.19491L5.4643%207L0.186925%2012.8051C-0.0623082%2013.0792%20-0.0623082%2013.5214%200.18
6925%2013.7944C0.436158%2014.0685%200.838112%2014.0685%201.08628%2013.7944L6.81334%207.4
9465C6.93212%207.36515%207%207.18433%207%207C7%206.81567%206.93212%206.63485%206.8133
4%206.50535L1.08628%200.205616C0.837052%20-0.0685388%200.435097%20-0.0685388%200.186925%
200.205616C-0.0612477%200.479772%20-0.0623082%200.92192%200.186925%201.19491Z%22%20fill%
3D%22white%22%20fill-opacity%3D%220.7%22%2F%3E%0D%0A%3C%2Fsvg%3E)}.va_tt
.mm_vrc{padding:11px 2px 0 0}.va_tt .vsb_tr_t{position:relative;top:auto;left:auto;font:normal 18px/22px
"Arial",Helvetica,Sans-Serif;font-weight:400;color:#4007a2;z-index:auto}.b_dark .va_tt
.vsb_tr_t{color:#82c7ff}.va_tt .vsb_tr_tp,.va_tt .vsb_tr_tl{display:inline-block;margin-right:5px}.va_tt
.vsb_tr_chd{position:relative}.vsb_tr_c.va_tt{--va-st-padding-bottom:16px;height:auto;background-color:tran
sparent;margin-top:22px;overflow:visible;padding-bottom:var(--va-st-padding-bottom);margin-bottom:0}.va_
tt .mc_vtvc_ban_lo,.va_tt .vsb_tr_t::after,.va_tt .mc_vtvc:hover .mc_vtvc_center_play,.va_tt .vsb_tr_chd
.vt_onhv .mc_vtvc .mc_vtvc_meta{display:none}.va_tt .mc_vtvc:hover .mc_vtvc_ht,.va_tt .mc_vtvc:hover
.mc_vtvc_htb{display:table-cell}.va_tt
.mc_vtvc_htb{padding-top:50px;background:linear-gradient(360deg,rgba(0,0,0,.6) 60.35%,rgba(0,0,0,0)
100%);font-size:11px;line-height:13px}.va_tt .mc_vtvc_ht{padding:0 24px;text-shadow:0 1px 2px
```

# Compositions related to solar power generation

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rgba(0,0,0,.2)}.va_tt .mc_vtvc_center_play{bottom:52px}.va_tt .mc_vtvc: hover
.mc_vtvc_title{max-height:52px;white-space:normal;display:-webkit-box;-webkit-box-orient:vertical;-webkit-
line-clamp:4}#serpvidans .va_tt .slide{margin-right:0;vertical-align:bottom;transition:width .2s,height
.2s}#serpvidans .va_tt .slide:not(:first-child){margin-left:8px}#serpvidans .va_tt
.mm_vrc>div{padding-bottom:0}.va_tt .vsb_tr_chd .mc_vtvc
.mc_vtvc_meta{height:auto;padding:8px;color:#ddd}.va_tt .vsb_tr_chd
.mc_vtvc_th_dock{height:72px;position:absolute;bottom:0;background:linear-gradient(360deg,rgba(0,0,0,.55)
60.35%,rgba(0,0,0,0) 100%)}.va_tt
.mc_vtvc_meta_row_channel{font-size:13px;line-height:15px;font-weight:500;color:#fff;white-space:nowrap;
overflow:hidden;text-overflow:ellipsis;margin-bottom:6px}.va_tt .vsb_tr_chd .mc_vtvc
.mc_vtvc_title{height:auto;font-size:11px;line-height:13px;color:#ddd;white-space:nowrap;overflow:hidden;t
ext-overflow:ellipsis}.va_tt .slide .mc_vtvc{width:100%}.va_tt .slide video{object-fit:cover}.va_tt
.mc_vtvc_th .cico{width:100%;height:204px}.va_tt .b_overlay
.btn.bigrounded{top:auto;bottom:0;margin-bottom:93px}.va_tt .vt_onhv
.mc_vtvc_htb{padding-top:86px}.va_tt .vsb_tr_chd .mc_vtvc .vtmu,.va_tt .vsb_tr_chd .mc_vtvc
.vtpl{bottom:6px}.va_tt .vcmt_ct,.va_tt .vcmt_ctt{display:block;margin-bottom:4px;font-size:11px}.va_tt
.vasyt::before{content:"";background:url(
AAAYCAYAAADgdz34AAABRklEQVR4Ae2UT0rDQBJFX7QICtaoIOimAReiUNuV696jmx5A8AalZ/AIpb
bdwIT2B6wqIwYkuWgnBP7jo+D7SkmiM4kd6KYPfjNDeHlfJt8kwEYOBXqhgENod+SgnJKQ7Jfjsr3k/j
mZkg/yQn7IE7lncAwjvElmRHICskKzQMduOZWsrcWNS7hX+dmgQurNQzxD52YBQ6s1maTb3UCtNsoo
TOzwI7THkXAYAD0+9narVyTR9aGtVoqpyRRqtdzNXls7qCCMqpWgXodqNVsrrkZ/ImiimMe6g4wHLqci
Qx6BzOXGwn93S7QaBQJF6Uy6B28Wq3y1HKSZC6uL7PAG1wFymSkG35FY/jX899Kfkxk6vE/JfIRrhvw
XJEH8r5C8Iw8kmudGyzbH037nI6Q9UnWu8i+eDnf38iamC7saVDkJG60Fv0CnB4IzftPhuMAAAAASUVO
RK5CYII=) no-repeat;background-size:18px 18px;padding-right:22px}.va_tt
.vasig::before{content:"";background:url(
AAAYCAYAAADgdz34AAAEsUIEQVR4Ad1UTWxUVRT+zn3vzbz5ozNtFQpRa2hDjC6qhKWICwjWTV
mwMRKIMSG44W9hXIGRRKPRUMMCEySgidHEXFXjxkgJEU0ISEhEaItg0bZU7bTz99689+49nvem5SfT
hVt5yc3ce+ee7zvf869wP/9o/sXm4bKxUaAfQ6bnVkt9GZNiAwiuDpCmiM4MLDZwAKDmJNgJoKWGZ
O6ZZhPK0RHj44+O99GsGIuRhkzJkshwMF00ROwHM6hKzhCnjaREjFBCYmMHcDWYYmJSQKgbIQgi
7XIPXiEom9RKBcf1+X1gMF3USBZQjBk2sdPLY2h+6VTgJqSdYqybyVfWPGw9x4FeWxKiIhCY0FH9ZA
I7L2yt9vP0BQ0s2dHZJ5hxB05zReObIWvQMF/Jdv+uwMrrzZMxo1g4BsNI29q42gK/J6SzGB8bH9zf4E/PqJ
MUyN/A79ZxVpMSHFWgKMmGGSGuTXIZBbvxi9BzYgm1+PK3vOJgQe7N4I3HsEuoFOIYht6Xu+E79+
dAXTX40t1iCQodkRI2yxR6xiEpNWfjBEsVmVTy6iY/d6rO5zURmvwCcHbQTdknlJe3i875FkHV6c5G4uI0
dNyva46Dz0EqX6u0GFNPzRG1T78HsQxUqAYOQXQAg6+/Nsj90h34TcRIASBUUWFatWJev0xDjIqcaZn
gKXPt9Bcb/4IxeK7wipjU+j84sdKL96AnqqKhrsGJCcNVIKi9oUaWojKKIuo4IMEcm6k6bZogj5A9ulazVU3j
jGPFNGbI7/5RkqfnYQKw4NorLnU6lGC4YohFK+nLlnkVqarOB5dOAvuKglA8dakMNVyfYZBOcuAbOTI
FWDsuqEO7e5+e2PsP7BLQORY0WgVxKkjkjJvMagg6a4xLNwqVqIk/AiKSXJMAxJnVEghRIJfXoniPC
hmQ1ZBNp+W5KCDlgYzmdgVqlgpqWkL91h8xoGRrbkwwNfgCrNU52RRS2YvnzsbnEJ67kGQvWbeSEkt
VHE9+ew3y4nlKIYIU0NriSibSj/6x9yk7fByZj98lff68KBD7tmxJjSPHU8sAaUWUUBPFaK22uQTf9DIPf
YLEy1NtZ1SaVD6PAP1A+9Dj09BmfbNjhbN0NPjqOxfzfz/G0my2Onf1WCyDMzYIFzeQVWscHsGtJz15N

```

1astmNL87Gbcna32bGqffAk5KbCQ5BdKzTYvEV8CXi7fhqSTG3BiXA02i+x7puwRcikgIoOtXObp5idKDr  
 4HVAsLJi8SzY5y8yyHYhLGLCuzLk9GzBqkNg0hv34noh5/YTFwnIjdOdzmC8JY8/E+YDFN95CByLx+Gu  
 3U/XCx24PK/yRddvQx/+D2pWSRvdyhg1s12gg59Chl9mDKW1MzAO3cE1rWvobr6oHKPin4N8QocCUAk  
 TORIbGZnoCd+I3NN8IwicqRdTSQqotNtBMgFw6qQH1JufoDcrNz7tPRzBfz3JehZI8BifODDeHUZNXAjJF  
 RtUNVipGyilNiWkmse6MvGjoaxnNTyN0NFV7172S3sstxML9nxBRL7I00c+my8BhmvwqZRJV0vMKoSt  
 CDgQsQV+xbNq1OmYoZLo6PzeGi+fwFJbz1IhJBeawAAAABJRU5ErkJggg==)

no-repeat;background-size:18px 18px;padding-right:22px}.va\_tt  
 .vastt::before{content:"";background:url(  
 1irY+ieoiKXYKZaniI3WIoqg4AMfhaAcCMJ93q2vwkXODz6WnZnf7swQEuu0w6D1Wn7y4cOJO/sLL8c  
 H8ps1ernCdYCueCoJm03iAyaLGWa3SsztDFg028BoBvnfdw4IW+r+hTgtLVUX67ZcBcjCKV0HEl/h0epT2c  
 gT8lBAlyjt+KNNsHMLU3yhUUebH+xGwWx+JRjOKdutUk+53wZVCPLGvnj/f2ZCFchXh6RjDwYS1dnF  
 LHo8XvZIMNVuE7PyD1SScATcHyqhuNevQt8H62BZHiaf6ZtXqegAAAABJRU5ErkJggg==)}

no-repeat;background-size:contain;padding-right:20px}.va\_tt  
 .vasfb::before{content:"";background:url(/rp/zvtkyPveEhrXqHA-euzAa983fpQ.png)  
 no-repeat;background-size:contain;padding-right:20px}.vcmt\_ctt.vasyt::before{background-size:15px  
 15px;padding-right:19px}.vcmt\_ctt.vasig::before{background-size:15px  
 15px;padding-right:19px}.vcmt\_ctt.vastt::before{background-size:contain;padding-right:17px}.vcmt\_ctt.vasf  
 b::before{padding-right:17px}.mm\_vrc{padding:24px 32px}@media screen and  
 (max-width:1022px){.mm\_vrc{margin:0}}@media screen and  
 (max-width:766px){.mm\_vrc{margin:0}}.mm\_vrcc{padding:0 0 32px 0;margin-bottom:0}.mm\_vrcc  
 h2{padding-bottom:20px}.mm\_vrcc h2 a{font-family:"Segoe  
 UI",Arial,Helvetica;font-size:20px;color:#000;line-height:18px}.mm\_vrcc .b\_overlay  
 .btn{z-index:3}.mm\_vrcc .vrhc{z-index:2}.mm\_vrcc .mc\_vtvc\_th .cico{padding-bottom:0}#dg\_c  
 .mm\_vrc,#dg\_c .mm\_vrcc{padding:8px 16px 0 16px}#dg\_c .mm\_vrcc .mc\_vtvc{width:100%}#dg\_c  
 .mm\_vrcc a:hover{text-decoration:underline}.isvctrl .mm\_vrcc  
 .slide{overflow:visible}.mm\_vrc{padding:16px 100px 0 160px}.mm\_vrc .b\_overlay  
 .btn.bigrounded.next{right:-44px}.mm\_vrc .b\_overlay .btn.bigrounded.prev{left:-44px}.mm\_vrc .b\_overlay  
 .btn.bigrounded .cr>div,.mm\_vrc .b\_overlay .btn.bigrounded  
 .cr>div:hover{box-shadow:none;border-radius:0;margin:0;background-position:16px  
 9px;background-size:12px  
 22px;background-color:transparent;background-image:url(/rp/rKVnxf6wkboxI0Db2Au3IVC5Sog.svg)}.mm\_  
 vrc .b\_overlay .btn.bigrounded .cr>div{opacity:.7}.mm\_vrc .b\_overlay .btn.bigrounded  
 .cr>div:hover{opacity:1}.mm\_vrc h2  
 a{font-family:"Arial",Helvetica,Sans-Serif;font-style:normal;font-weight:500;color:#111}.mm\_vrc  
 h2{display:inline-block;padding-bottom:16px}.mm\_vrc>div{position:relative;padding-bottom:32px}.mm\_vrc  
 .see\_more{position:absolute;right:0;top:3px}.mm\_vrc  
 .see\_more>a{font-family:"Arial",Helvetica,Sans-Serif;font-style:normal;font-weight:normal;font-size:16px;li  
 ne-height:18px;color:#000}#vsb\_more{padding:16px 0 4px 160px;color:#111}#vsb\_vid\_cat .mm\_vrc h2  
 a::after{display:inline-block;margin-left:12px;content:"";background-image:url(/rp/rKVnxf6wkboxI0Db2Au3

## Compositions related to solar power generation

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IVC5Sog.svg);background-size:7px 14px;width:7px;height:14px;opacity:.7}#vsb_vid_cat .mm_vrc h2
a:hover::after{opacity:1}.mm_vrc .mm_vrc_sub{display:inline-block;margin-left:24px}.mm_vrc
.b_hList{position:absolute;height:20px;top:3px;overflow:hidden}.mm_vrc
.b_hList>li{padding-right:24px;padding-bottom:0}.mm_vrc .b_hList a{font:normal 13px/20px
"Arial",Helvetica,Sans-Serif;color:#111}.mm_vrc .mc_vtvc_tot .mmsts
.mc_vtvc_meta{display:none}.vsb_tr_chd .mc_vtvc .mc_vtvc_meta { padding: 10px 10px 10px 10px; }
.vsb_tr_chd .mc_vtvc .mc_vtvc_meta_w { height: 190px; margin-top: -0px; } .vsb_tr_chd .mc_vtvc
.mc_vtvc_title { height: 150px; line-height: 15px; margin-bottom: 0px; margin-top: 0px; } .vsb_tr_chd
.mc_vtvc .mc_vtvc_meta_block_area { height: 20px; } .vsb_tr_chd .mc_vtvc .vtmu, .vsb_tr_chd .mc_vtvc
.vtpl { bottom: 198px; } .vsb_tr_chd .mc_vtvc_th_dock { height: 190px; } .vsb_tr_chd .mc_vtvc_th_dock {
height: 60px; }.tr_bt .mc_vtvc_th
img{height:auto;width:100%}.grad_b{position:absolute;width:100%;top:30%;bottom:0%;background:linear-
gradient(180deg,rgba(48,44,39,0) 0%,#302c27 100%)}.mc_vtvc_th_dock{width:100%;background:#302c27}.mc_vtvc_tot
.mc_vtvc_th{background-color:transparent}.vsadc .grad_b{top:81.8%}.mc_vtvc_tot
.mc_vtvc_meta{line-height:15px;position:absolute;bottom:0%;background:transparent}.mc_vtvc_tot
.mc_vtvc_meta_row{line-height:16px;font-size:12px;height:16px}.mc_vtvc_tot
.mc_vtvc_meta_row,.mc_vtvc_tot .mc_vtvc_meta_row a{color:#dadada}.mc_vtvc_tot
.mc_vtvc_title,.mc_vtvc_tot .mc_vtvc_title a{color:#fff}.vsadc .mc_vtvc_tot
.mc_vtvc_title{line-height:18px}.vsadc .mc_vtvc_tot .mc_vtvc_meta_row,.vsadc .mc_vtvc_tot
.mc_vtvc_meta_row a{color:rgba(255,255,255,.7)}.vsadc
.mc_vtvc_meta_pubdate{padding-bottom:2px}.vtdc_default{background:#302c27}.vtdc_default_g{backgrou
nd:linear-gradient(180deg,rgba(48,2,39,0) 0%,#302c27 100%)}.vtdc_black{background:#111}.vtdc_black_g{background:linear-gradient(180deg,rgba(17,17,17,0)
0%,#111 100%)}.vtdc_blue{background:#3a4e74}.vtdc_blue_g{background:linear-gradient(180deg,rgba(58,78,116,0)
0%,#3a4e74 100%)}.vtdc_brown{background:#69423d}.vtdc_brown_g{background:linear-gradient(180deg,rgba(105,66,6
1,0) 0%,#69423d 100%)}.vtdc_grey{background:#464646}.vtdc_grey_g{background:linear-gradient(180deg,rgba(70,70,70,0)
0%,#464646 100%)}.vtdc_green{background:#324f32}.vtdc_green_g{background:linear-gradient(180deg,rgba(50,79,50,0)
) 0%,#324f32 100%)}.vtdc_orange{background:#8c5400}.vtdc_orange_g{background:linear-gradient(180deg,rgba(140,84,
0,0) 0%,#8c5400 100%)}.vtdc_pink{background:#a3394b}.vtdc_pink_g{background:linear-gradient(180deg,rgba(163,57,75,0)
0%,#a3394b 100%)}.vtdc_purple{background:#774077}.vtdc_purple_g{background:linear-gradient(180deg,rgba(119,64,1
19,0) 0%,#774077 100%)}.vtdc_red{background:#811515}.vtdc_red_g{background:linear-gradient(180deg,rgba(129,21,21,0)

```

# Compositions related to solar power generation

```

0%,#811515
100%)).vtdc_white{background:#464646}.vtdc_white_g{background:linear-gradient(180deg,rgba(70,70,70,0
)
0%,#464646
100%)).vtdc_yellow{background:#755b00}.vtdc_yellow_g{background:linear-gradient(180deg,rgba(117,91,
0,0)
0%,#755b00
100%)).vtdc_teal{background:#256868}.vtdc_teal_g{background:linear-gradient(180deg,rgba(37,104,104,0)
0%,#256868
100%)).cipr,.cipg,.cipa,.cipl,.ciptr,.ciplr{display:inline-block}.cipa,.cipl,.cipr{cursor:pointer}.vab{vertical-ali
gn:bottom}.vam{vertical-align:middle}.vat{vertical-align:top}.vabl{vertical-align:baseline}.vatt{vertical-alig
n:text-top;border-radius:0}.vatb{vertical-align:text-bottom}
evronDown12,
evronUp12{background:url(/rp/QKlTrqL25sGDqfRYQjkmWJWDeG8.png)
no-repeat;background-size:494px 58px;width:12px;height:12px} evronDown12{background-position:-372px
0} evronUp12{background-position:-372px -14px}@media(prefers-color-scheme:dark){#bpage.b_med
evronDown12{background-position:-386px 0}#bpage.b_med evronUp12{background-position:-386px
-14px}}#bpage.b_drk
evronDown12{background-position:-386px 0}#bpage.b_drk
evronUp12{background-position:-386px -14px}.cipr,.cipl{margin-right:10px}.cipr .cico,.cipl .cico,.ciptr
.cico,.ciplr
.cico{border-radius:0}.b_action>.cipr,.b_action>.cipl{float:left}.ciptr,.ciplr{margin-left:10px}.sw_play{heigh
t:16px;width:16px}:not(.dc_aud_wrp)>.sw_play{background-image:url(
goAAAANSUUhEUgAAACAAAAAAgCAMAAABEpIrGAAAAaVBMVEUAAAAAD58AFaQAE6UAFKUA
E6QAFKUAEEqYAD58AE6QAE6UAFKQAEqUAD6QAE6MAE6QAD6cAE6QAFaQAFKQAEqQAFKUA
EqQAFKUAEEqIAFKMAEEqMAE6MAD58AE6UAE6UAE6IAFKYAFKYAE6MaDJ//AAAAI3RSTIMAEG
Cfz+//XyCQj79vMEDfIKAWoK/vYL9gcHDPMM9QkK+fzHYYSkAAAEVSURBVHgBdZMFkuwwEPPV
k/ULx8nSMN7/jh/X1dUDKgjpyaTIZavqLUF6q2rTo5o24aoaRVkH9MNokk1DD3QW8AzV7M/zAtIDNGby
qKA5k9+d58OkKPukZFjmU0/0Qf6PdeXGVcDu3wBQphcXpxH+vlioyhtyHRwLrWQeICCEzHyZvunlBmLI
mo0WtsEQQnZU2jMFQwg5cFTCgiGEGF8CBUMMGReGdCpvng/xaT7Ennc3RFyaOMZIOu7LXLF2Q8GL
1tSyROMGx3/00aSzH1bEyznOUKYZcC/C+XVh2nJT6Yk+yd7giz3wV/LstS8NfvgTPCN0qVkofAk8A+th
MsnehzXQmqLmBVdqHXfZ97JPkPa3ldP6DeOGDIAP873EAAAAAEIFTkSuQmCC);background-size:16px
16px}#slideexp1_E03288 .slide { width: 94px; margin-right: 20px; }#slideexp1_E03288c .b_slidebar .slide {
border-radius: 6px; }#slideexp1_E03288 .slide:last-child { margin-right: 1px; }.b_sldr .slide{box-shadow:0 0
0 1px rgba(0,0,0,.05)}.b_cards .cico,.b_slidebar .slide .cico{border-radius:0}#b_content .b_wpt_container
.l_eprd_imgsetgrid.l_eprd_imgsetgrid_actionlink
.l_eprd_imgsetgrid_item
.cico{border-radius:0!important}.b_sldr .slide.see_more{box-shadow:0 0 0 0 rgba(0,0,0,0)}.b_sldr
.slide.see_more .carousel_seemore{border:0}.b_sldr .slide.see_more: hover{box-shadow:0 0 0 0
rgba(0,0,0,0)}#slideexp1_E03288c { margin: -4px; } #slideexp1_E03288c .b_viewport { padding: 4px 1px
4px 1px; margin: 0 3px; }#slideexp1_E03288c .b_slidebar .slide[data-mini="1"] { display:none; }Videos of
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Explained Next Generation Science11.2K viewsApr 13, 2023Watch full videoShort videoscompositions

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# Compositions related to solar power generation

related to solar power generation00:04 00:47 00:43 00:33 TikTok02:02 See allWatch full videoDepartment of EnergySolar Photovoltaic Cell Basics - Department of EnergyThere are a variety of different semiconductor materials used in solar photovoltaic cells. Learn more about the most commonly-used materials.

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