



Batteries are a new type of energy storage product

Summary: From solid-state to graphene, new battery technologies are emerging to rival lithium-ion, promising safer materials, faster charging, lower costs and longer lifespans for devices and electric vehicles. Graphene-Based Batteries Future Potential: Revolutionize mobile devices and EVs with rapid charging Graphene-based batteries are emerging as a groundbreaking energy storage technology due to their unique material properties. Graphene, a single layer of carbon atoms arranged in a two-dimensional Summary: From solid-state to graphene, new battery technologies are emerging to rival lithium-ion, promising safer materials, faster charging, lower costs and longer lifespans for devices and electric vehicles. Most , from smartphones and tablets to and energy storage systems, rely on lithium-ion Breakthroughs in battery technology are transforming the global energy landscape, fueling the transition to clean energy and reshaping industries from transportation to utilities. With demand for energy storage soaring, what's next for batteries--and how can businesses, policymakers, and investors Columbia Engineering scientists are advancing renewable energy storage by developing cost-effective K-Na/S batteries that utilize common materials to store energy more efficiently, aiming to stabilize energy supply from intermittent renewable sources. Columbia Engineers have developed a new, more 9 New Battery Technologies to Watch Solid-State BatteriesLithium-Sulfur BatteriesCobalt-Free Lithium-Ion BatteriesSodium-Ion BatteriesIron-Air BatteriesZinc-Based BatteriesGraphene BatteriesHow Do They Work?Zinc-based batteries work much like lithium-ion batteries with zinc ions flowing from the battery's anode to cathode. This class of new battery technology includes zinc-bromine, zinc-manganese dioxide, zinc-air and zinc-ion batteries.How Will They Be Used?Zinc-based batteries could be used for solar energy storage because of their low rate of self-discharge. According to PV Magazine, a zinc-air battery storage system was installed in a 32-building community in Queens, New York, in . After receiving a \$400 million loan from the See more on builtin Occupation: Staff ReporterPublished: Feb 15, 2023Author: Jacob Biba#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 .b_ans.b_vidAns #serpvidans.vsacf .mc_vtvc,#b_results .b_ans.b_vidAns #serpvidans.vsacf .mc_vtvc_th,#b_results .b_ans.b_vidAns #serpvidans.vsacf .cico,#b_results .b_ans.b_vidAns #serpvidans.vsacf .mc_vtvc_htb,#b_results .b_ans.b_vidAns #serpvidans.vsacf .vrhc,#b_results .b_ans.b_vidAns #serpvidans.vsacf .vrhcp,#b_results .b_ans.b_vidAns #serpvidans.vsacf .vrhtc,#b_results .b_ans.b_vidAns #serpvidans.vsacf .vrhtpc{border-radius:var(--mai-smtc-corner-list-card-nested-default)}#b_results .b_ans.b_vidAns #serpvidans.vsacf .mmlist .mc_vtvc,#b_results .b_ans.b_vidAns #serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta{margin:0}#b_results .b_ans.b_vidAns #serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_channel,#b_results .b_ans.b_vidAns #serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_row_channel{color:var(--smtc-foreground-content-



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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 .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);height:a
uto;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{color:var(--smtc-foreground-content-n
eutral-primary);height:var(--mai-smtc-padding-card-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,#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:var(--mai-smtc-padding-card-default)}.vsacf .b_title .mmtitle{font:var(--bing-
smtc-text-global-subtitle1-strong);margin-bottom:0}.vsacf .b_title .mmtitle
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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
.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:92
px;background:linear-gradient(180deg,var(--bing-smtc-background-ctrl-fade-on-image-stop-0)
0%,var(--mai-smtc-background-ctrl-on-image-rest) 100%)}#serpvidans.vsacf .va_tt a.vsb_tr_t{padding:0
var(--mai-smtc-padding-card-default);font:var(--acf-font-title-2-strong)}#serpvidans.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)}#serpvidans.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_vt
vc_title{white-space:normal;display:-webkit-box;-webkit-line-clamp:2;-webkit-box-
orient:vertical}#serpvidans.vsacf .b_module_expansion_control .b_btnContainer .b_CompactExpa
nsion{background-color:var(--bing-smtc-background-ctrl-neutral-rest);display:flex;justify-
content: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-foreground-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{conte
nt:"";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
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.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 .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.no
shadow{box-shadow:none}.mc_vtvc_con_rc{border-radius:6px;overflow:hidden;position:relative
}.mc_vtvc>a{color:#71777d;display:block;text-
decoration:none;width:100%}.mc_vtvc>a:focus::after{outline:2px solid #00a89d;width:100%;hei
ght:100%;content:"";outline-offset:-2px;position:absolute;top:0;left:0}.mc_vtvc_th{background-
color:#d5d5d5;position:relative}.mc_vtvc_th .cico{border-radius:0}.mc_vtvc_ban_lo,.mc_vtvc_ba
n_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;margin-top:-40px;padding:12px 8px;z
-index:1}.mc_vtvc_actc{right:16px;bottom:16px;position:absolute;display:inline-block;z-
index:1}.mc_vtvc_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-b
ottom: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;botto
m:0;left:0;right:0}.mc_vtvc_ht{width:100%;padding:0 16px;line-height:16px;color:#fff;text-decor
ation:underline;word-break:break-word;box-sizing:border-box;vertical-align:middle;text-align:cen
ter}.mc_vtvc_th_live_b{background-color:#c80000;color:#fff;display:inline-block;padding:2px
8px;font:11px/14px Arial;border-radius:2px;text-
transform:uppercase;height:15px;width:26px;position:absolute;left:8px;top:110px}.isvctrl .isv
.mc_vtvc_ban_up{left:0;right:initial}.mc_vtvc_ban_lo,.mc_vtvc_ban_up{right:0}.vt_text.b_lRigh
t.b_lLeft{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%;background:rgba(0,
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0,0,.7);position:absolute;top:0;bottom:0;left:0;right:0;display:table}.mc_vtht{width:100%;padding:0 16px;line-height:16px;color:#fff;text-decoration:underline;word-break:break-word;box-sizing:border-box;vertical-align:middle;text-align:center;display:table-cell}.vt_text.b_lRight.b_lLeft{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:contain;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:none}.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%22%20height%3D%22%20viewBox%3D%220%200%22%20fill%3D%22none%22%20xmlns%3D%22http%3A%2F%2F.w3%2F2000%2Fsvg%22%3E%0D%0A%20%20%20%20%3Crect%20width%3D%22%20height%3D%22%20rx%3D%22%20fill%3D%22black%22%20fill-opacity%3D%220.6%22%2F%3E%0D%0A%20%20%20%20%3Cpath%20d%3D%22M14.%.1923C13.%.209.62986%.%.%.4997V20.5C12%.%.%.%.8073L22.%.3073C23.%.%.%.%.6926L14.%.1923Z%22%20fill%3D%22white%22%20fill-opacity%3D%220.9%22%2F%3E%0D%0A%3C%2Fsvg%3E)}.mmlist .mc_vtvc{margin:10px 1px 0 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;color: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.mmlist .mc_bc{padding:2px 8px;line-height:14px;border-radius:2px;font-weight:normal}.mc_vtvc: hover .mc_vtvc_title{text-decoration:underline}.mc_vtvc_meta{box-sizing:border-box;display:inline-block;line-height:18px;position:relative;width:100%}.mc_vtvc_meta_block{bottom:0;position:absol
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ute;width:100%}.mc_vtvc_meta_row{line-height:16px;font-size:11px;height:17px;overflow:hidde
n;text-overflow:ellipsis;white-space:nowrap}.mc_vtvc_meta_row a{display:inline-
block}.mc_vtvc_meta_row a:hover{text-decoration:underline}.mc_vtvc_meta_block_area{positio
n:relative}.mc_vtvc_meta_block,.mc_vtvc_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:" > "}.mc_vtvc_kmt_title{lin
e-height:18px;padding-bottom:4px;font-weight:bold;color:#00809d;text-transform:uppercase;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-dec
oration:none}.mc_vtvc_meta_pubdate{color:#444;padding-bottom:3px}.mc_vtvc_meta_channel{
color:#444}.mc_vtvc_meta_w,.mc_vplvc_meta_w{position:relative}.mc_vtvc_meta_bg_w,.mc_v
plvc_meta_bg_w{height:100%;width:100%;overflow:hidden;position:absolute;top:0}.mc_vtvc_m
eta_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{t
op:0}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{top:0}.emptySt
yleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebugg
ingPurpose{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(
X//////////9/gMdvAAACnRSTIMAETNEVWwImbvuo4D1oAAAAB9JRE
```




Batteries are a new type of energy storage product

```
FUCB1jmMoABKuaQcSqQhCxKgFGgLhNQlkpQAwA8zkLyQAl6F0AAAAASUVORK5CYII=
)).mc_bc_w{height:18px;padding:8px;text-align:right}.mc_bc{background-
color:rgba(0,0,0,.75);padding: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);opacit
y:1}.mmsi{height:16px;width:16px;position:relative;top:5px;padding-right:var(--smtc-gap-betwee
n-content-xx-small)}.vrhdata{display:none}.mmgrid>div{width:197px;display:inline-
block;margin-right:8px;margin-bottom:8px;box-shadow:0 0 1px rgba(0,0,0,.05);position:relative
;vertical-align:top;overflow:hidden;white-space:normal;border-radius:6px}.vsarr
.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:.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:.9px){#serpvidansrr
.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
```



Batteries are a new type of energy storage product

```
.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-height:15px;height:15px;font-size:13px;color:#000;margin-bottom:20px;font-family:"Arial",Helvetica,Sans-Serif;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="M"] .pffvt,.vrhc line.nhvpv[data-tps="L"] .pffvt{display:inline-flex}.vrhc line.nhvpv .vrhc.pffv .vrhc{display:none}.vrhc line.nhvpv .vrhc.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);gap: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(--mai-smtc-foreground-ctrl-on-image-rest);font:var(--bing-smtc-text-global-subtitle2-strong)}.pffvi{mask:url(/rp/ui07wU6K7FR_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 .vrhc.pffv .vrhc{display:none}.hvpv.h5s .vrhc.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);gap:var(--smtc-gap-between-content-x-small);box-sizing:border-box}.pffvt{text-decoration:underline}.vrhcp .vrhol{position:absolute;width:100%;height:35px;max-height:35px;bottom:0;left:0;padding:0;background:none;display:block;z-index:9}.vrhcp .vrhol.hide,.vrhcp .vrhol .hide{display:none}.vrhot{white-space:nowrap;text-overflow:ellipsis;overflow:hidden;display:inline-block;position:absolute;max-width:240px;height:18px;line-
```




Batteries are a new type of energy storage product

```
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;heig
ht:18px;display:inline-block;cursor:pointer}.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}.vrhcp      .vrhol.npb{height:36px;max-
height:36px}.vrhol .vadda{width:22px;height:18px;padding:0;margin-right:0;margin-left:2px;bott
om:0;position:relative;display:inline-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;m
argin-left:1px;margin-right:1px;position:relative;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}.vol
MuteHandle{width:22px;height:18px}.vo{background:url(/rp/fFZxBXEIP9WYOO0jhTaElyLhE
VU.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}.vrhtc
.hide{display:none}.vrh_clc      .vt_vp,.vrh_clc      .vrhtc      .vrhi,.vrh_clc
.player_ol{cursor:pointer}.vrh_clc      .cico{border-
radius:0}.vrhtc{border:hidden;top:0;left:0;padding:0}.vrhc.mousefollow      .vrhtc,.vrhc.popout
.vrhtc{background-color:#999}.vrhtpc.load
.player_ol{background:url(/rp/J_o2maogFDeUOsovPjL-ofEuxJ4.gif)      center      center      no-
repeat}.vrhc line .vrhtc .vrhi,.vrhc.popout .vrhtc .vrhi,.vrhc.mousefollow .vrhtc .vrhi{position:abso
```



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```
lute!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.popout,.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
}.vrhcp{position:relative;top:0;left:0;display:table-row}.vrhcp
.vrhtc{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,.vr
hc: visited{color:#000;text-decoration:none}.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:#1d1b28;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 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;heigh
t:70px;overflow:hidden;color:#fff;text-overflow:ellipsis;display:-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-ima
```



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d+SGnJKQ7JFjsr3k/jmZkg/yQn7IE7lncAwjvElmRHlCskKzQMdjuOZWsrcWNS7hX+dmgQurN
QzxDS52YBQ6s1maTb3UCtNsOOToZwI7THkXAYAD0+9narVyTR9aGtVoqpyRRqtdzNXls7qC
CMqpWgXodqNVsrrkZ/ImiimMe6g4wHLqciQx6BzOXGwn93S7QaBQJF6Uy6B28Wq3y1HKS
ZC6uL7PAG1wFymaskg35FY/jX899Kfkxk6vE/JFIRrhvwXJEH8r5C8Iw8kmudGyzbH037nI6Q9
UnWu8i+eDnf38iamC7saVDkJG60Fv0CnB4IzftPhuMAAAAASUVORK5CYII=) no-
repeat;background-size:18px 18px;padding-right:22px}.va_tt .vasig::before{content:"";backgroun
d:url(
4AAAEsUIEQVR4Ad1UTWxUVRT+zn3vzbz5ozNtFQpRa2hDjC6qhKWICwjWTVmwMRKIM
SG44W9hXIGRRKPRUMMCEySgidHExFXjxkgJEU0ISEhEaltg0bZU7bTz99689+49nvem5SfT
hVt5yc3ce+ee7zvfD869wP/9o/sXm4bKxUaAfQ6bnVkt9GZNiAwuDPcmiM4MLDZwAKDmJ
NgJoKWGZO6ZzhPK0RHj44+O99GsGltuRhkzJkshwMF00ROwHM6hKzhCnjaREjFBCYmM
HcDWYYmJSQKgbIQgi7XlPXiEom9RKbCf1+X1gMF3USBZQjBk2sdPLY2h+6VTgJqSdYqyb
yVfWPgW9x4FeWxKiIhCY0FH9ZAI7L2yt9vP0BQ0s2dHZJ5hxB05zReObIWvQMF/Jdv+uwMr
rzzMxo1g4BsNI29q42gK/J6SzGB8bH9zf4E/PqJMUyN/A79ZxVpMSHFwGKMmGGSGuTXIZB
bvxi9BzYgm1+PK3vOJgQe7N4l3HsEuoFOIYht6Xu+E79+dAXTX40t1iCQodkRI2yxR6xiEpN
WfjBEsVmVTy6iY/d6rO5zURmvwCcHbQTdKnJJe3i875FkHV6c5G4uI0dNyva46Dz0EqX6u0G
FNPzRG1T78HsQxUqAYOQXQAg6+/NsJ90h34TcRIASBUUWFatWJev0xDjIqcaZngKXPt9Bcb
/4IxeK7wipjU+j84sdKL96AnqqKhrgJCCnVlKi9oUaWojKKIuo4IMecm6k6bZogj5A9uIazVU3jj
GPFNGbI7/5RkqfnYQKw4NorLnU6lGC4YohFK+nLlnkVqarOB5dOAvuKgladakMNVyfYZB
OcuAbOTIFWDsuqEO7e5+e2PsPt7BLQORY0WgVxKkjtJvmAgg6a4xLNwqVqIk/AiKSXJMJ
AxJnVEghRIJfXoniPChmQ1ZBNp+W5KCDlgYzmdgVqlgpqWkL91h8xoGRrbkwgNfgCrNU52
RRS2YvnzsbnEJ67kGQvWbeSEktVHE9+ew3y4nlKIYIU0NrISibSj/6x9yk7fByZj98lff68KBD7t
mxJjjSPHU8sAaUWUUQBPFaK22uQTf9DIPfYLEy1NtZ1SaVD6PAP1A+9Dj09BmfbNjhbN0N
PjqOxfzfz/G0my2Onf1WCyDMzYlFzeQVWscHsGtJz15N1astmNL87Gbcna32bGqffAk5KbCQ5
BdKzTYvEV8CXi7fhqSTG3BiXA02i+x7puwRcikgIoOtXObp5idKDr4HVAsLJi8SzY5y8yyHYh
LGLCuzLk9GzBqkNg0hv34noh5/YTFwnljdOdzmC8JY8/E+YDFN95CByLx+Gu3U/XC24PK/
yRddvQx/+D2pWSRvdyhg1s12gg59Chl9mDKW1MzAO3cE1rWvobr6oHKPin4N8QocCUAkT0
RiBgZnoCd+I3NN8IwicqRdTSQqotNtBMgFw6qQH1JufoDcrNz7tPrZBfz3JehZI8BifODDeHU
ZNXAjJFRtUNVipGyilNiWkmse6MvGjoaxnNTyN0NFV7l72S3sstxML9nxBRL7I00c+my8Bhm
vwqZRJVOMKoStCDgQsQV+xbNq1OmYoZL06PzeGi+fwFJbz1IhJBeawAAAABJRu5ErkJggg
g==) no-repeat;background-size:18px 18px;padding-right:22px}.va_tt .vastt::before{content:"";ba
ckground:url(
AABWdVznAAAA90IEQVR4AZWQu2sCQRDGJyYHCQdqPEKqSHr7NOZFyvQJiJ1YKYII1ir
Y+ieoiKXYKZaniI3WIoqg4AMfhaAcCMJ93q2vwkXODz6WnZnf7swQEUU0w6D1Wn7y4cOJ
O/sLL8cH8ps1ernCdYCueCoJm03iAyaLGWa3SztDFg028BoBvnfdw4IW+r+hTgLVUX67ZcBcj
CKV0HEl/h0epT2cgT8lBAlyjt+KNNsHMLU3yhUUebH+xGwWx+JRjOKdutUk+53wZVCPLG
vnj/f2ZCFchXh6RjDwYS1dnFLHo8XvZIMNVuE7PyD1SScATcHyqhuNevQt8H62BZHiaf6ZtX
qegAAAABJRu5ErkJggg==) no-repeat;background-size:contain;padding-right:20px}.va_tt



Batteries are a new type of energy storage product

```
.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.vasfb::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/rKVnxf6wkbxI0DbA2Au3IVC5Sog.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;line-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/rKVnxf6wkbxI0DbA2Au3IVC5Sog.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{posit
```




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```
ion: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_me
ta{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{background: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{backgro
und:#69423d}.vtdc_brown_g{background:linear-gradient(180deg,rgba(105,66,61,0) 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_gr
een_g{background:linear-gradient(180deg,rgba(50,79,50,0) 0%,#324f32 100%)).vtdc_orange{bac
kground:#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(119,64,119,0) 0%,#774077 100%)).vtdc_red{b
ackground:#811515}.vtdc_red_g{background:linear-gradient(180deg,rgba(129,21,21,0)
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{ba
ckground:#256868}.vtdc_teal_g{background:linear-gradient(180deg,rgba(37,104,104,0)
0%,#256868 100%)).cipt,.cipg,.cipa,.cipl,.ciptr,.ciplr{display:inline-block}.cipa,.cipl,.ciplr{cursor
:pointer}.vab{vertical-align:bottom}.vam{vertical-align:middle}.vat{vertical-align:top}.vabl{verti
cal-align:baseline}.vatt{vertical-align: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}.cipt,.cipl{margin-right:10px}.cipt .cico,.cipl .cico,.ciptr .cico,.ciplr .cico{border-radius:0}.
b_action>.cipt,b_action>.cipl{float:left}.ciptr,.ciplr{margin-left:10px}.sw_play{height:16px;widt
```



Batteries are a new type of energy storage product

h:16px}.not(.dc_aud_wrp)>.sw_play{background-image:url(
GgoAAAANSUUhEUgAAACAAAAAgCMAAAABEpIrGAAAAaVBMVEUAAAAAD58AFaQA
E6UAFKUAE6QAFKUAEqYAD58AE6QAE6UAFKQAEqUAD6QAE6MAE6QAD6cAE6QAF
aQAFKQAEqQAFKUAEqQAFKUAEqIAFKMAEqMAE6MAD58AE6UAE6UAE6IAFKYAFK
YAE6MaDJ//AAAAI3RSTIMAEGCfz//XyCQj79vMEDfIKAwok/vYL9gcHDPMM9QkK+fnz
HYYSkAAAEVSURBVHgBdZMFkuwweEPVv/ULx8nSMN7/jh/X1dUDKgjpYaTIZavqLUF6q2
rTo5o24aoaRVkH9MNOkk1DD3QW8AzV7M/zAtIDNGbyqKA5k9+d58OkKPukZFjmU0/0Qf6P
deXGVcDu3wBQphcXpxH+vlioyhtyHRwLrWQeICCEzHyZvunlBmLImo0WtsEQQnZU2jMFQ
wg5cFTCgiGEGF8CBUMMGReGdCpvnG/xaT7Ennc3RFyaOMZlOu7LXLf2Q8GL1tSyROMGx
3/O0aSzH1bEyznOUKYZcC/C+XVh2nJT6Yk+yd7giz3wV/LstS8NfvgTPCN0qVkofAk8A+thMs
nehzXQmqLmBVdqHXfZ97JPkPa3ldP6DeOGDIAP873EAAAAAEIftkSuQmCC);background-
size:16px 16px}#slideexp1_A1DBB5 .slide { width: 94px; margin-right: 20px;
}#slideexp1_A1DBB5c .b_slidebar .slide { border-radius: 6px; }#slideexp1_A1DBB5 .slide:last-
child { margin-right: 1px; }.b_sldrp .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_ecrd_imgsetgrid.l_ecrd_imgsetgrid_actionlink .l_ecrd_imgsetgrid_item .cico{border-
radius:0!important}.b_sldrp .slide.see_more{box-shadow:0 0 0 0 rgba(0,0,0,0)}.b_sldrp
.slide.see_more .carousel_seemore{border:0}.b_sldrp .slide.see_more: hover{box-shadow:0 0 0 0
rgba(0,0,0,0)}#slideexp1_A1DBB5c { margin: -4px; } #slideexp1_A1DBB5c .b_viewport {
padding: 4px 1px 4px 1px; margin: 0 3px; }#slideexp1_A1DBB5c .b_slidebar .slide[data-
mini="1"] { display:none; }Videos of Batteries Are A New Type of Energy Storage ProductWatch
video4:37How Battery Energy Storage Systems Work (BESS)saVRee43.3K viewsOct 9,
2024Watch video1:32:47An Introduction to Battery Energy Storage Systems and Their Power
System SupportEngineering Institute of Technology22.3K viewsApr 19, 2024Watch
video7:08Advantages of Battery Energy Storage Systems (BESS) for electrical grid stabilityInitial
Learn With Me11.9K viewsApr 19, Watch full videoShort videosbatteries are a new type of
energy storage product00:23The Rise of BESS: Exploring Battery Energy Storage
Systems00:53How Battery Energy Storage Systems (BESS) Work00:48MOST Powerful Battery!?
-Flywheel Energy Storage System00:45Na-ion Batteries Explained in 60 Seconds ? Future of
Energy Storage!00:12Innovative 11kwh Battery Pack for Renewable Energy Storage00:59Battery
Energy Storage Systems BESSSee allWatch full video.rcimgcol .cico { background: #f5f5f5; }
.b_drk .rcimgcol .cico, .b_dark .rcimgcol .cico { background: unset; }.b_imgSet .b_hList
li.square_m,.b_imgSet .b_hList li.tall_m{width:75px}.b_imgSet .b_hList
li.tall_mlb{width:113px}.b_imgSet .b_hList li.tall_mln{width:96px}.b_imgSet .b_hList
li.wide_m{width:128px}.b_imgSet.b_Card .b_hList li{padding-left:1px;padding-
right:9px}.b_imgSet.b_Card .b_hList li.tall_wfn{width:80px;padding-right:6px}.b_imgSet.b_Card
.b_hList li:last-child{padding-right:1px}.b_imgSet.b_Card .b_imgSetData{padding:0 8px
8px;height:40px}.b_imgSet.b_Card .b_imgSetItem{box-shadow:0 0 0 1px rgba(0,0,0,.05),0 2px



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3px 0 rgba(0,0,0,.1);border-radius:6px;overflow:hidden}.b_imgSet .b_imgSetData p
a{color:#444;outline-offset:0}.b_subModule .b_clearfix.b_mhdr .b_floatR
.b_moreLink,.b_subModule .b_clearfix.b_mhdr .b_floatR .b_moreLink:visited,.b_subModule>.b_
moreLink,.b_subModule>.b_moreLink:visited{color:#767676}.b_imgSet .cico.b_placeholder{dis
play:flex;justify-content:center;background-color:#f5f5f5;background-clip:content-box}.b_imgSet
.cico.b_placeholder a{display:flex}.b_imgSet .cico.b_placeholder a
img{width:48px;height:48px;margin:auto}@media(max-width:.9px){#b_context .b_entityTP
.b_imgSet li:nth-child(5){display:none}.b_imgSet .b_hList li.wide_m:nth-
child(3){display:none}}@media(max-width:.9px){#b_context .b_entityTP .b_imgSet li:nth-
child(4){display:none}.b_imgSet .b_hList li.wide_m:nth-child(2){display:none}}.rcimgcol
.b_imgSet{content-visibility:auto;contain-intrinsic-size:1px 124px}.rcimgcol{height:108px;paddi
ng-top:var(--smtc-gap-between-content-x-small);padding-bottom:var(--smtc-gap-between-content-
x-small)}.b_algo:has(.b_agh) .rcimgcol{padding-top:var(--smtc-gap-between-content-xx-
small)}.rcimgcol .b_imgSet{overflow:hidden}.rcimgcol .b_imgSet ul{overflow-x:auto;overflow-
y:hidden;white-space:nowrap;padding-left:var(--mai-smtc-padding-card-default)}.rcimgcol
.b_imgSet ul::-webkit-scrollbar{-webkit-appearance:none}.rcimgcol .b_imgSet
.b_hList>li{padding-right:var(--smtc-padding-ctrl-text-side)}.rcimgcol .b_imgSet .cico{border-
radius:unset}.rcimgcol .b_imgSet .b_hList>li:first-child .cico{border-radius:unset;border-top-left-r
adius:var(--smtc-corner-card-rest);border-bottom-left-radius:var(--smtc-corner-card-
rest);overflow:hidden}.rcimgcol .b_imgSet .b_hList>li:last-child .cico{border-radius:unset;border-
top-right-radius:var(--smtc-corner-card-rest);border-bottom-right-radius:var(--smtc-corner-card-
rest);overflow:hidden}.rcimgcol .rcimgcol .b_sideBleed{margin-left:unset;margin-
right:unset}.rcimgcol .b_imgclgovr{cursor:pointer}.rcimgcol .b_imgclgovr .cico
img: hover{transform:scale(1.05);transition:transform .5s ease}#b_content #b_results>.b_algo .b_c
aption:has(.rcimgcol){padding-right:var(--mai-smtc-padding-card-default);margin-right:calc(-1*va
r(--mai-smtc-padding-card-default));margin-left:calc(-1*var(--mai-smtc-padding-card-
default));padding-left:var(--mai-smtc-padding-card-default)}
sightsOverlay,#OverlayIFrame.b_mcOverlay sightsOverlay{position:fixed;top:5%;left:5%;bottom
:5%;right:5%;width:90%;height:90%;border:0;border-radius:15px;margin:0;padding:0;overflow:hi
dden;z-index:9;display:none}#OverlayMask,#OverlayMask.b_mcOverlay{z-index:8;background-
color:#000;opacity:.6;position:fixed;top:0;left:0;width:100%;height:100%}.wr_hlic,.wr_hli{margi
n-top:4px;color:#767676;display:block}.wr_hlic>.wr_hli,.wr_hli>*,.wr_hli
li{display:inline}.wr_hli+.wr_hli::before{content:" | "}.wr_strike{text-decoration:line-
through}Department of EnergyBreaking It Down: Next-Generation Batteries - Department of
EnergyAs the nation transitions to a clean, renewables-powered electric grid, batteries will need to
evolve to handle increased demand and provide improved performance in a sustainable way. When
The Future of Energy Storage: Five Key Insights Breakthroughs in battery technology are
transforming the global energy landscape, fueling the transition to clean energy and reshaping
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industries from transportation to utilities. Top 10: Energy Storage Technologies | Energy Flow batteries store energy in liquid electrolytes held in external tanks. It is easy to increase the capacity of these batteries by enlarging tanks or boost their power by adding more cells. Sumitomo A Review on the Recent Advances in Battery Due to their low maintenance needs, supercapacitors are the devices of choice for energy storage in renewable energy producing facilities, most notably in harnessing wind energy. New Battery Breakthrough Could Solve Renewable Columbia Engineering scientists are advancing renewable energy storage by developing cost-effective K-Na/S batteries that utilize common materials to store energy more efficiently, aiming to stabilize Next-generation energy storage: A deep dive into experimental This review explores various experimental technologies, including graphene batteries, silicon anodes, sodium-sulphur and quantum batteries, highlighting their potential to New Battery Technologies That Will Change the FutureExplore the future of energy storage with emerging battery technologies. Discover innovations promising higher capacity, longer lifespan, and enhanced safety in power solutions. Battery technologies for grid-scale energy storage In this Review, we describe BESTs being developed for grid-scale energy storage, including high-energy, aqueous, redox flow, high-temperature and gas batteries. Battery 11 New Battery Technologies To Watch In We highlight some of the most promising innovations, from solid-state batteries offering safer and more efficient energy storage to sodium-ion batteries that address concerns Breaking It Down: Next-Generation Batteries As the nation transitions to a clean, renewables-powered electric grid, batteries will need to evolve to handle increased demand and provide improved performance in a sustainable way. When The Future of Energy Storage: Five Key Insights on Battery Breakthroughs in battery technology are transforming the global energy landscape, fueling the transition to clean energy and reshaping industries from transportation to utilities. Top 10: Energy Storage Technologies | Energy MagazineFlow batteries store energy in liquid electrolytes held in external tanks. It is easy to increase the capacity of these batteries by enlarging tanks or boost their power by adding A Review on the Recent Advances in Battery Development and Energy Due to their low maintenance needs, supercapacitors are the devices of choice for energy storage in renewable energy producing facilities, most notably in harnessing wind energy. New Battery Breakthrough Could Solve Renewable EnergyColumbia Engineering scientists are advancing renewable energy storage by developing cost-effective K-Na/S batteries that utilize common materials to store energy more Battery technologies for grid-scale energy storage In this Review, we describe BESTs being developed for grid-scale energy storage, including high-energy, aqueous, redox flow, high-temperature and gas batteries. Battery

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