cathode induces efficient charge-separation leading to fast lithium-ion battery charging. The discovery that exposure of LMO to light lowers charge transport resistance can lead to new

Here the authors show that illumination of a lithium manganese oxide cathode can induce efficient charge-separation and electron transfer processes, thus giving rise to a new type of fast lithium-ion battery charging.

Photo-accelerated fast charging of lithium-ion batteries. It is shown that illumination of a lithium manganese oxide cathode can induce efficient charge-separation and electron transfer processes, thus giving rise to a new type of fast lithium-ion battery charging. Expand.

In this work, we probe the mechanism of photo-accelerated fast charging and show that Mn d-d electronic transitions occurring under red light illumination are largely responsible for the increased charging rate.

We report here that illumination of a spinel-type LiMn 2 O 4 cathode induces efficient charge-separation leading to fast lithium-ion battery charging. The discovery that exposure of...

Here we show that the charging rate of a cathode can be dramatically increased via interaction with white light. We find that a direct exposure of light to an operating LiMn2O4 cathode during charging leads to a remarkable lowering of the battery charging time by a factor of two or more.

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Researchers at Argonne National Laboratory have discovered a photo-excitation process that speeds up the charging of lithium-ion batteries. If commercialized, such technology could be a game changer for electric vehicles.

We find that a direct exposure of light to an operating LiMn 2 O 4 cathode during charging leads to a remarkable lowering of the battery charging time by a factor of two or more. This enhancement is enabled by the induction of a microsecond long-lived charge separated state, consisting of Mn 4+ (hole) plus electron.