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Chemical Hazards Impact on Efficiency of Energy Storage Battery and its Possible Mitigation's

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Abstract : Battery energy storage has a great role on storing energy harnessed from different alternative resources and greatly benefit the power sector by supply energy back to the system during outage and regular operation in power sectors. Most of the study shows that there is an exponential increase in the quantity of lithium - ion battery energy storage system due to their power density, economical aspects and its performance. But this lithium ion battery failures resulted in fire and explosion due to its having flammable electrolytes (chemicals) which can create those hazards. Hazards happen in these energy storage system lead to minimize battery life spans or efficiency. Identifying the real cause of these hazards and its mitigation techniques can be the solution to improve the efficiency of battery technologies and the electrode materials should have high electrical conductivity, large surface area, stable structure and low resistance. This paper asses the real causes of chemical hazards, its impact on efficiency, proposed solution for mitigating those hazards associated with efficiency improvement and summery of researchers new finding related to the field.

Keywords : battery energy storage, battery energy storage efficiency, chemical hazards, lithium ion battery
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