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Supporting Information

$Li_3Cr(MoO_4)_3$: A NASICON-type High Specific Capacity Cathode Material for Lithium Ion Batteries†

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The diffusion coefficient of Li ions (D) is calculated according to the following Eq. (1) and Eq. (2)

$$D=R^2T^2/2A^2n^4F^4C^2\sigma^2 \quad (1)$$

$$Z'=R_s+R_{ct}+\sigma\omega^{-1/2} \quad (2)$$

where R is the gas constant, T is the absolute temperature, A is the surface area of the cathode, n is the number of electrons per molecule during oxidization, F is the Faraday constant, C is the concentration of lithium-ion, σ is the Warburg factor which has a relationship with Z' as shown in Eq. (2), R_s is the resistance between the electrolyte and electrode, R_{ct} is the charge transfer resistance, and ω is angle frequency.

Table S1 Kinetic parameters of $Li_3Cr(MoO_4)_3$@C.

Sample	R_{ct} (Ω)	σ	D_{Li}^+($cm^2\ s^{-1}$)/EIS
$Li_3Cr(MoO_4)_3$@C	45	53	3.0×10^{-17}

R_{ct}: charge transfer resistance. σ: Warburg factor. D_{Li}^+: diffusion coefficient of Li^+ion.

Figure S1 (a) Crystal Structure and (b) BVS-DMs of $Li_3Cr(MoO_4)_3$.