either K_4 or $K_2 \times K_3$. Obviously, $|V_S| = 4$ or 6. If $|V_S| = 4$, then $\langle V_S \rangle_{T^4} = K_4$. If $|V_S| = 6$, then it is not difficult to see that $\langle V_S \rangle_{T^4}$ contains a 3-factor which is isomorphic to $K_2 \times K_3$. This implies that G^4 has a 3-factor with the required propert-ty, which completes the proof.

Corollary. *Let G be a connected graph of an even order $\geqq 4$. Then G^4 contains at least three edge-disjoint 1-factors.*

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