The force becomes

$$\vec{F} = \frac{-e^2}{r^2}\hat{r} + (-e)\vec{v} \times \vec{B}$$

$$= \frac{-e^2}{r^2}\hat{r} + (-e)\, v_\theta \hat{\theta} \times B_z \hat{k}$$

$$= \frac{-e^2}{r^2}\hat{r} + -e\, v_\theta B_z \hat{r}$$