

**Concept Question 4-2:** The s-domain circuit model for an inductor accounts for the initial current flowing through the inductor, but not the initial voltage across it. Is that an issue?

No. For an inductor, the Laplace transform of  $v = L \frac{di}{dt}$  is  $\mathbf{V}_L(\mathbf{s}) = \mathbf{sL I}(\mathbf{s}) - Li_L(0)$ . The initial voltage  $v(0)$  is irrelevant.