14. Let $u = \tan x$, $du = \sec^2 x\, dx$.

$$\text{Area} = \int_0^{\pi/4} \frac{1}{\sin^2 x + 4\cos^2 x}\, dx = \int_0^{\pi/4} \frac{\sec^2 x}{\tan^2 x + 4}\, dx$$

$$= \int_0^1 \frac{du}{u^2 + 4}$$

$$= \left[\frac{1}{2}\arctan\left(\frac{u}{2}\right)\right]_0^1$$

$$= \frac{1}{2}\arctan\left(\frac{1}{2}\right)$$