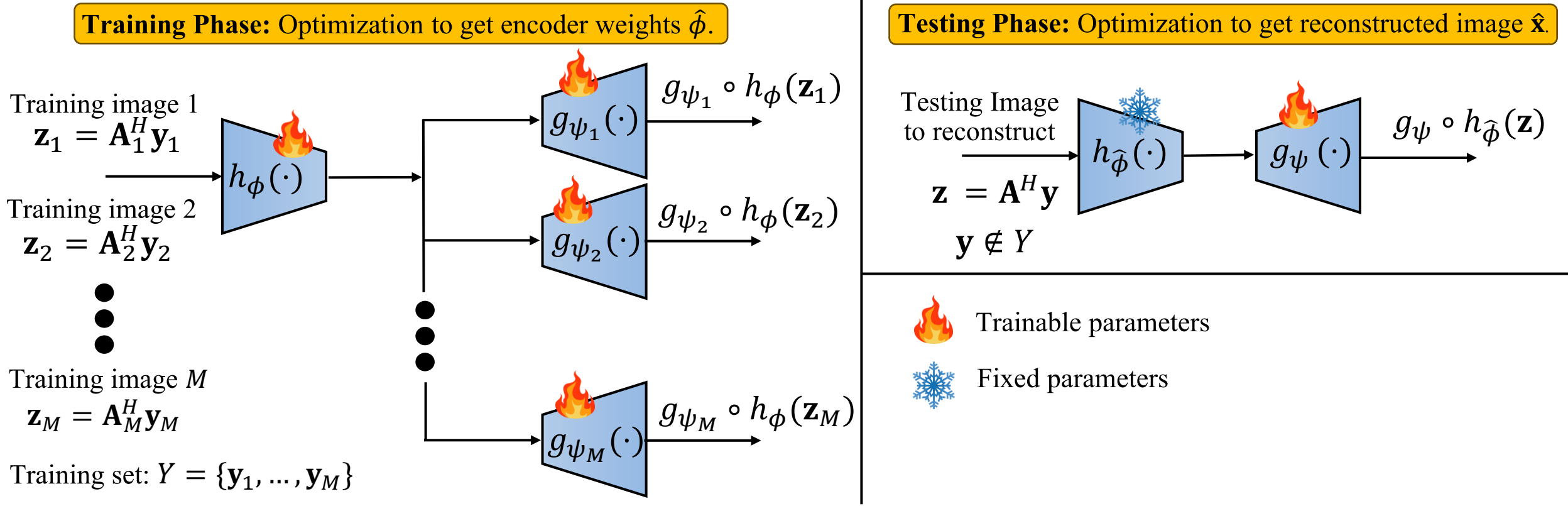
Training Phase: Optimization to get encoder weights $\hat{\phi}$.
Training image 1
$\mathbf{z}_1 = \mathbf{A}_1^H \mathbf{y}_1$
Training image 2
$\mathbf{z}_2 = \mathbf{A}_2^H \mathbf{y}_2$
Training image M
$\mathbf{z}_M = \mathbf{A}_M^H \mathbf{y}_M$
Training set: $Y = \{\mathbf{y}_1, \dots, \mathbf{y}_M\}$
$h_\phi(\cdot)$
$g_{\psi_1}(\cdot)$
$g_{\psi_2}(\cdot)$
$g_{\psi_M}(\cdot)$
$g_{\psi_1} \circ h_\phi(\mathbf{z}_1)$
$g_{\psi_2} \circ h_\phi(\mathbf{z}_2)$
$g_{\psi_M} \circ h_\phi(\mathbf{z}_M)$
Testing Phase: Optimization to get reconstructed image $\hat{\mathbf{x}}$.
Testing Image to reconstruct
$\mathbf{z} = \mathbf{A}^H \mathbf{y}$
$\mathbf{y} \notin Y$
$h_{\hat{\phi}}(\cdot)$
$g_\psi(\cdot)$
$g_\psi \circ h_{\hat{\phi}}(\mathbf{z})$
Trainable parameters
Fixed parameters