

Signing Key:  $\widehat{\mathbf{s}} \xleftarrow{\$} D_s^m$

Verification Key:  $h \xleftarrow{\$} \mathcal{H}(R, D, m), \mathbf{S} \leftarrow h(\widehat{\mathbf{s}})$

Random Oracle:  $H : \{0, 1\}^* \rightarrow D_c$

Sign( $\mu, h, \widehat{\mathbf{s}}$ )

1:  $\widehat{\mathbf{y}} \xleftarrow{\$} D_y^m$

2:  $\mathbf{e} \leftarrow H(h(\widehat{\mathbf{y}}), \mu)$

3:  $\widehat{\mathbf{z}} \leftarrow \widehat{\mathbf{s}}\mathbf{e} + \widehat{\mathbf{y}}$

4: if  $\widehat{\mathbf{z}} \notin G^m$ , then goto step 1

5: output  $(\widehat{\mathbf{z}}, \mathbf{e})$

Verify( $\mu, \widehat{\mathbf{z}}, \mathbf{e}, h, \mathbf{S}$ )

1: Accept iff

$\widehat{\mathbf{z}} \in G^m$  and  $\mathbf{e} = H(h(\widehat{\mathbf{z}}) - \mathbf{S}\mathbf{e}, \mu)$