CHAPTER VI

CONCLUSIONS

1. Let H be a Hilbert space, $T, S, K : H \longrightarrow H$ a non-expansive mapping satisfy the condition (A') with $F := F(T) \cap F(S) \cap F(K) \neq \emptyset$. Let $f : H \longrightarrow H$ an η_f-strongly monotone and k_f-Lipschitzian mapping, $g : H \longrightarrow H$ an η_g-strongly monotone and k_g-Lipschitzian mapping, $h : H \longrightarrow H$ an η_h-strongly monotone and k_h-Lipschitzian mapping. For any $x_0 \in H$, $\{x_n\}$ is defined by

$$\begin{cases} z_n = c_n x_n + (1 - c_n) K_h^{\alpha_n} x_n, \\ y_n = b_n x_n + (1 - b_n) S_g^{\beta_n} z_n, \\ x_{n+1} = a_n x_n + (1 - a_n) T_f^{\lambda_{n+1}} y_n, \ \ \forall n \geq 0, \end{cases} \tag{3.47}$$

where

$$\begin{aligned} T_f^{\lambda_{n+1}} x &= Tx - \lambda_{n+1} \mu_f f(Tx), \quad \forall x \in H, \\ S_g^{\beta_n} &= Sx - \beta_n \mu_g g(Sx), \quad \forall x \in H, \\ K_h^{\alpha_n} &= Kx - \alpha_n \mu_h h(Kx), \quad \forall x \in H, \end{aligned} \tag{3.48}$$

and $\{a_n\} \subset (0,1)$, $\{b_n\} \subset (0,1)$, $\{c_n\} \subset (0,1)$ and $\{\lambda_n\} \subset [0,1)$, $\{\beta_n\} \subset [0,1)$, $\{\alpha_n\} \subset [0,1)$ satisfying the following conditions:

(i) $\alpha \leq a_n$, $b_n \leq \beta$, $c_n \leq \gamma$ for some α, $\beta, \gamma \in (0,1)$,

(ii) $\sum_{n=1}^{\infty} \lambda_n < \infty$, $\sum_{n=1}^{\infty} \beta_n < \infty$ and $\sum_{n=1}^{\infty} \alpha_n < \infty$,

(iii) $0 < \mu_f < 2\eta_f / k_f^2$, $0 < \mu_g < 2\eta_g / k_g^2$ and $0 < \mu_h < 2\alpha_h / k_h^2$.

Then $\{x_n\}$ converges strongly to a common fixed point of T, S and K.