matched the test data well except for Impeller R1-4A. Paeng's and Backstrom's results are lower or higher than test data respectively by the difference value of about 0.05 and Stodola's and Staniz's result matching the test data are poorer than them. on the whole, the six correlations agree well with the Impeller of MFI-1, MFI-2, RD-100 and Compbel which have more blade number than the other impellers.

Comparing Figure 3 and Figure 2, the calculation results of the six correlations after α correction in Figure 3 are higher than the results without α correction in Figure 2, which results in higher than test data in almost all of the six correlations. Qiu's, Backstrom's and Stodola's equations agree well with test data relatively. But in general, all of the six correlations seems to provide better general agreement with the test value of the impeller which have "bigger" blade number Z.

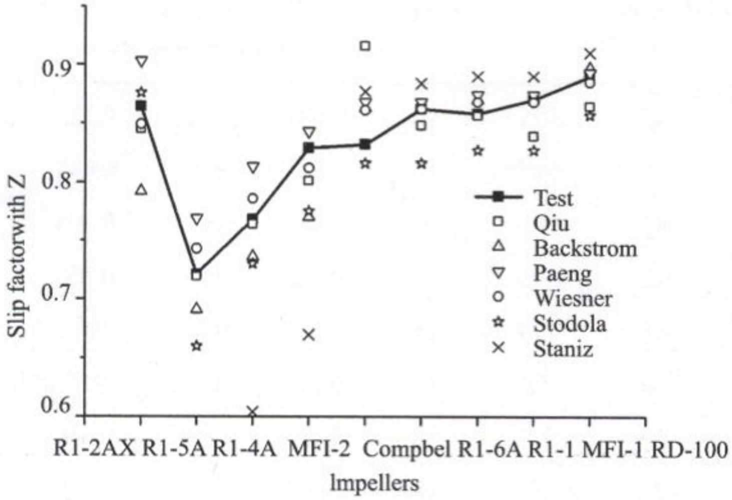

Fig 2. Slip factors comparation without α correction.

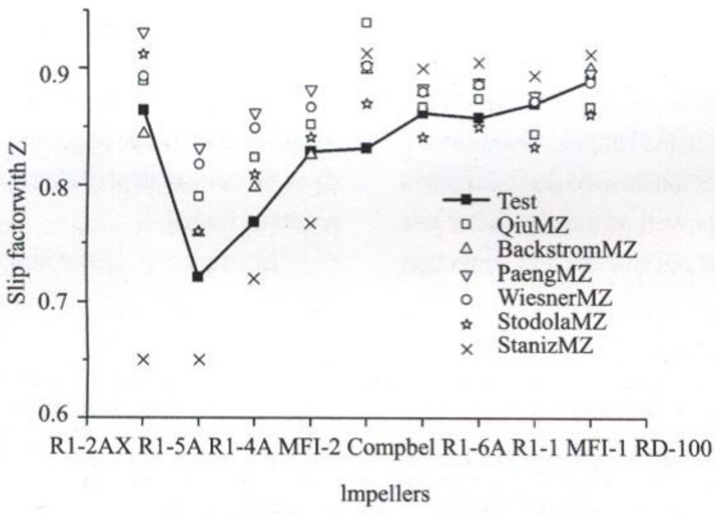

Fig 3. Slip factors comparation with α correction.

Based on the analysis above, the nine impellers have exit inclination angle $\alpha \geq 45^{\circ}$ which means more radial flow characteristics than of axial flow. So it's no need to correct with exit inclination angle while using the slip factor correlations for centrifugal impeller to mixed-flow impeller. it's also interesting to see that the more blade number Z the more consilient for the correlations to the impeller. For example, the six correlations agree better with the impellers which have $Z \geq 17$ than the impellers whch have Z number less than 17 in this case. It's seem that there are a control variable and a critical value exist.