

Figure S1. Inhibition percentage v. polymers percentage.

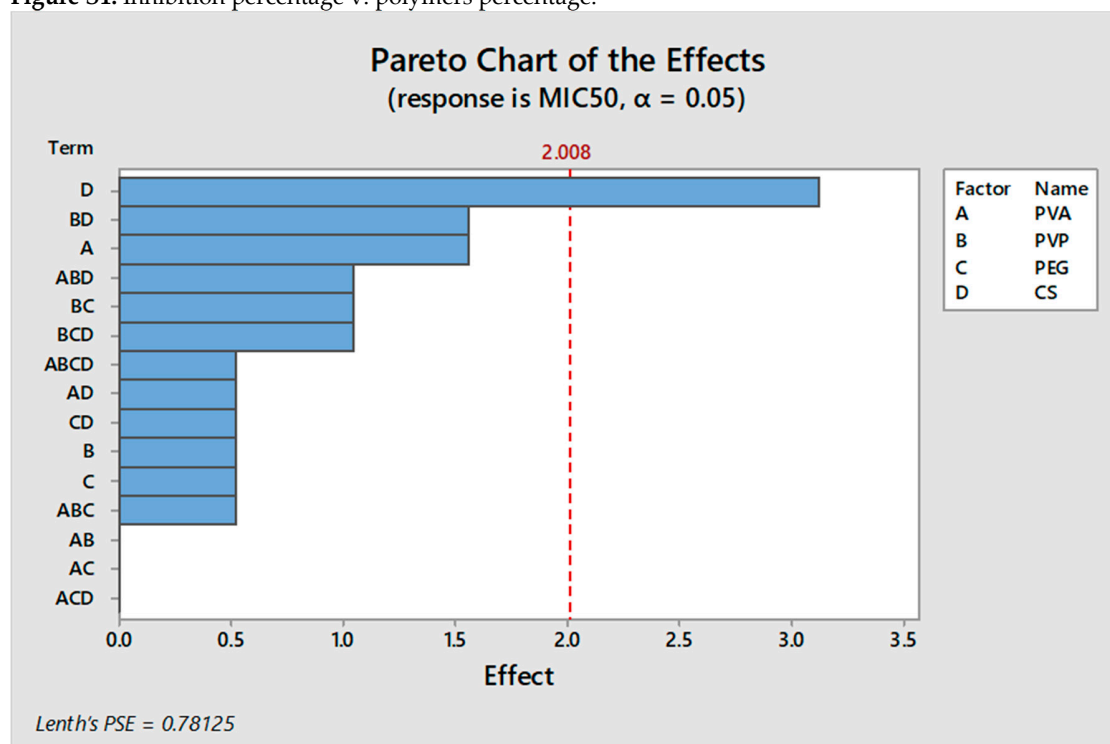
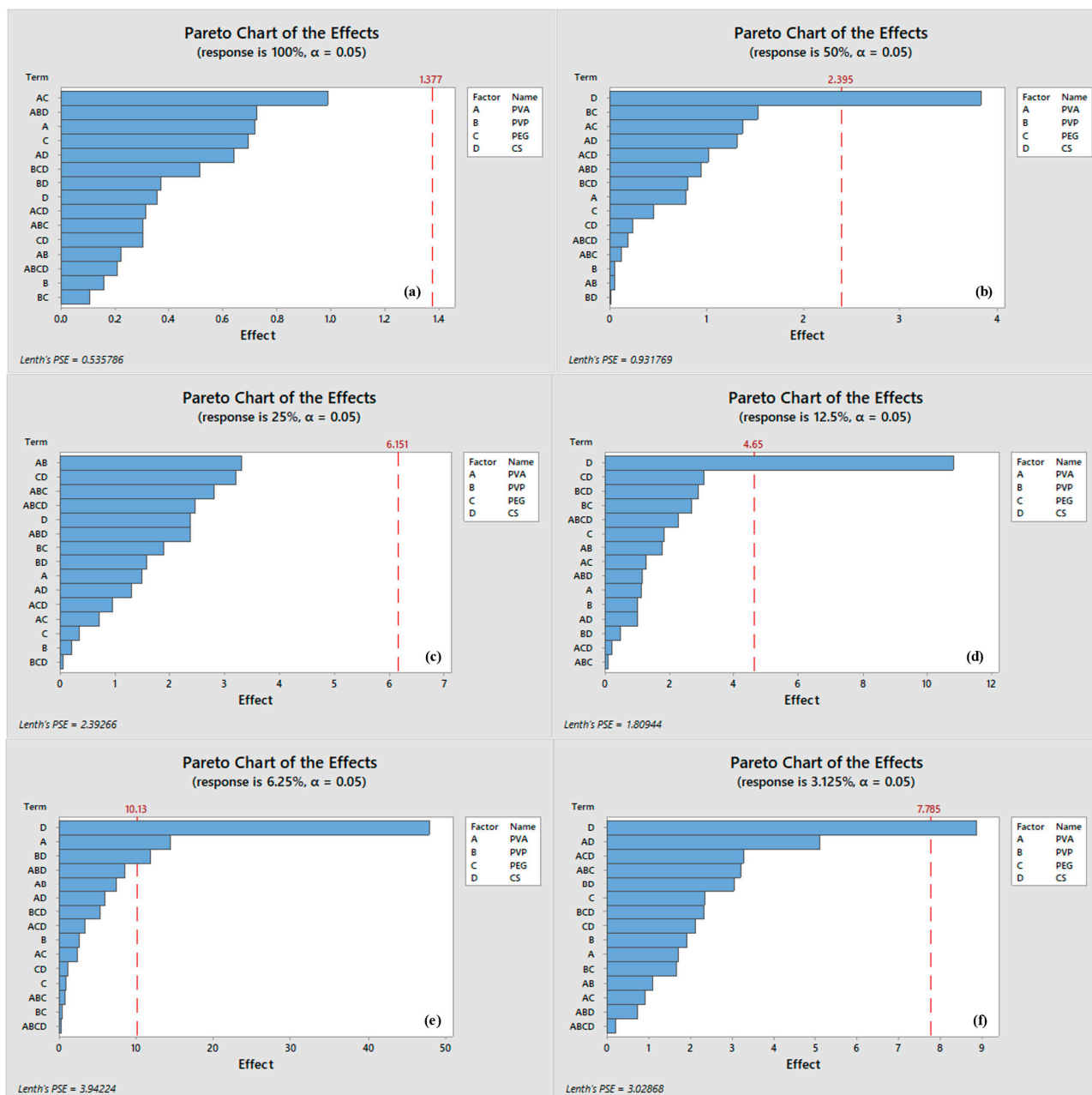
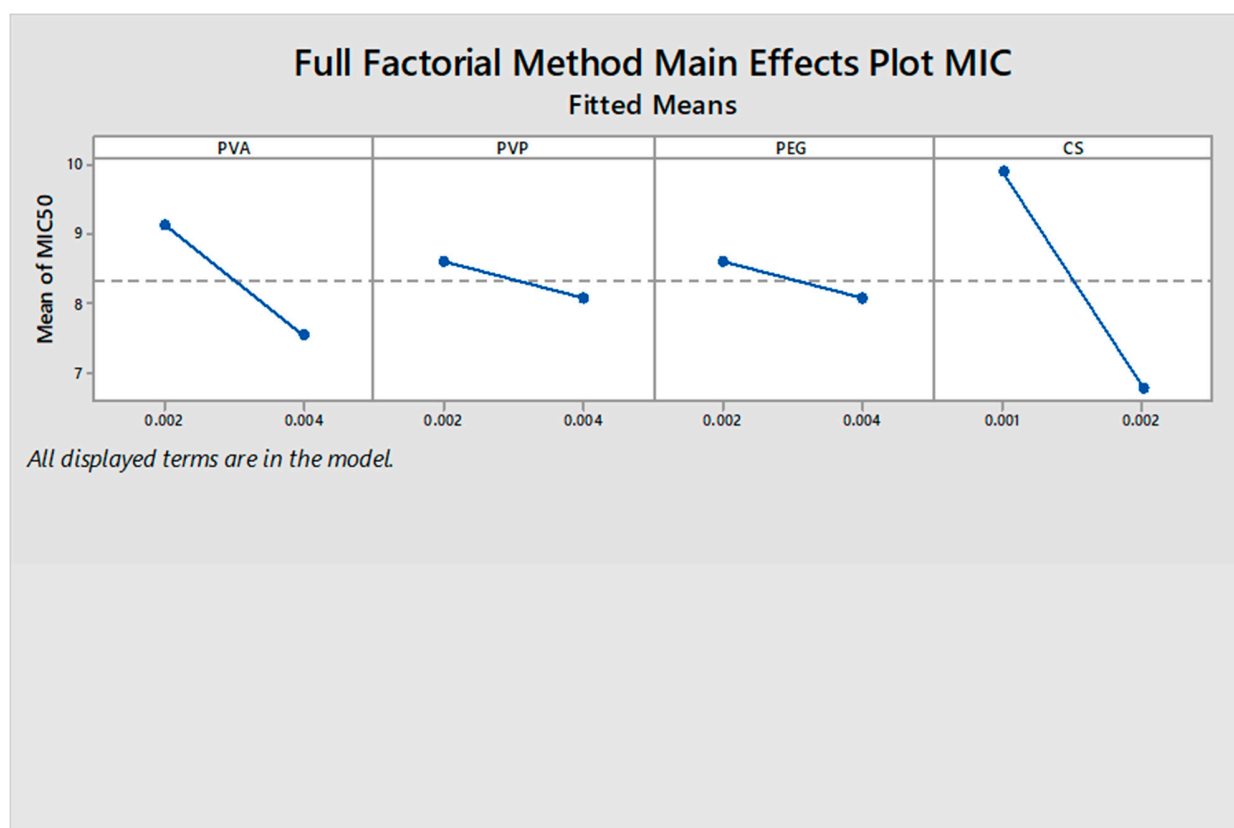


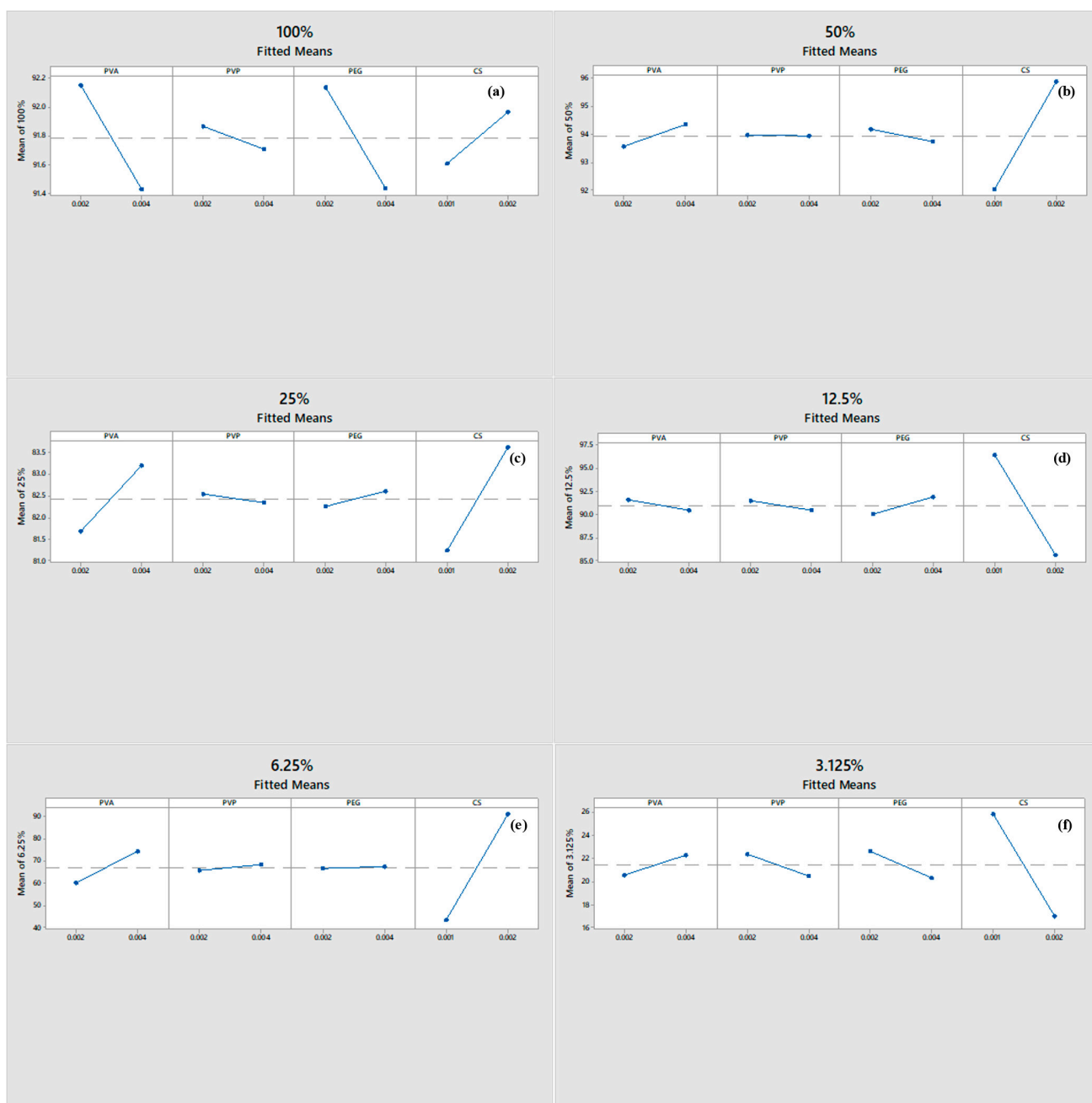
Figure S2. The Pareto chart of the effects of M1-M16 on MIC<sub>50</sub>.



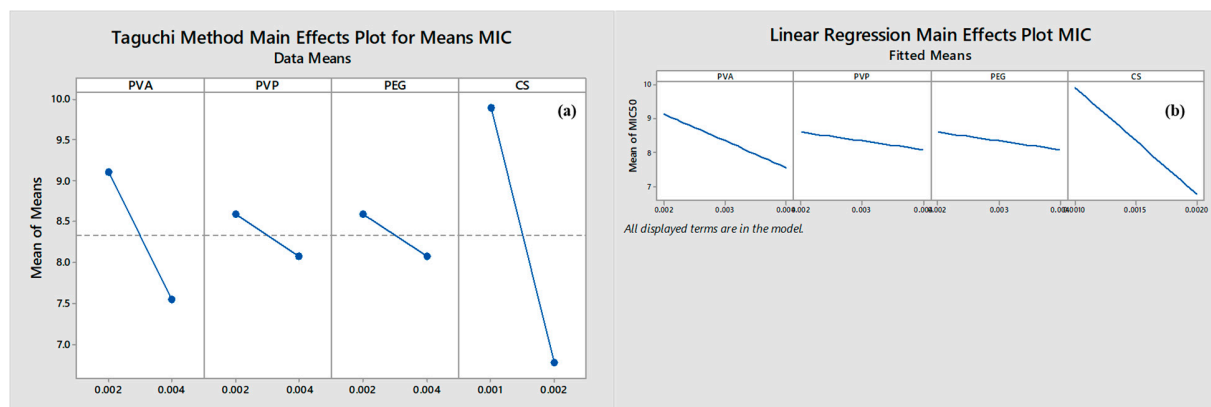
**Figure S3.** The Pareto chart of the effects of M1-M16 on inhibition percentage when the polymer blends with polymer percentage of (a) 100%, (b) 50%, (c) 25%, (d) 12.5%, (e) 6.25%, (f) 3.125%.



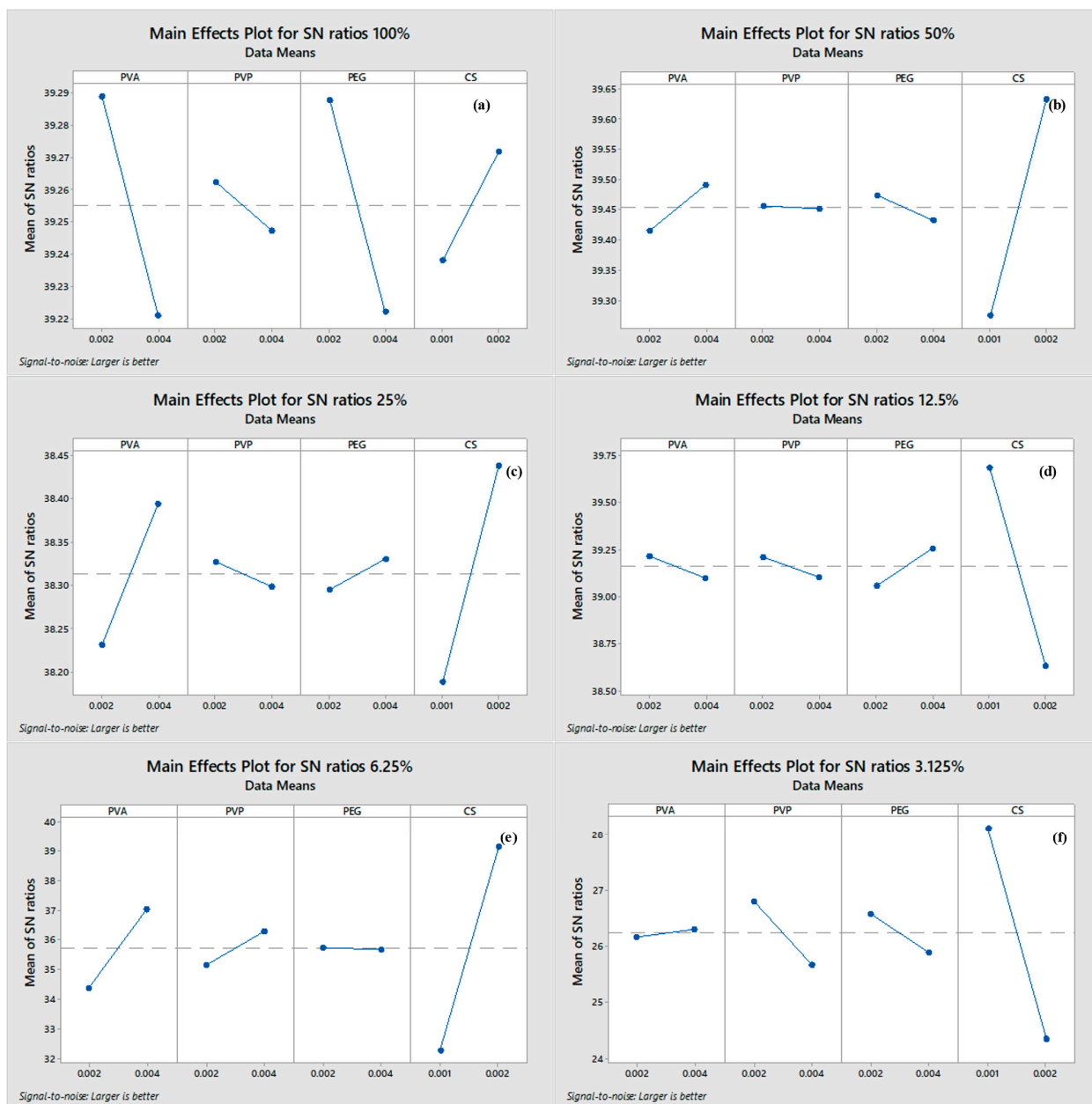
**Figure S4.** Main effect plots for means on MIC<sub>50</sub> for M1-M16 using 2-level factorial design methods.



**Figure S5.** Main effect plots for means on inhibition percentage for M1-M16 polymer percentage of (a) 100%, (b) 50%, (c) 25%, (d) 12.5%, (e) 6.25%, (f) 3.125% using by 2-level factorial design methods (left to right).

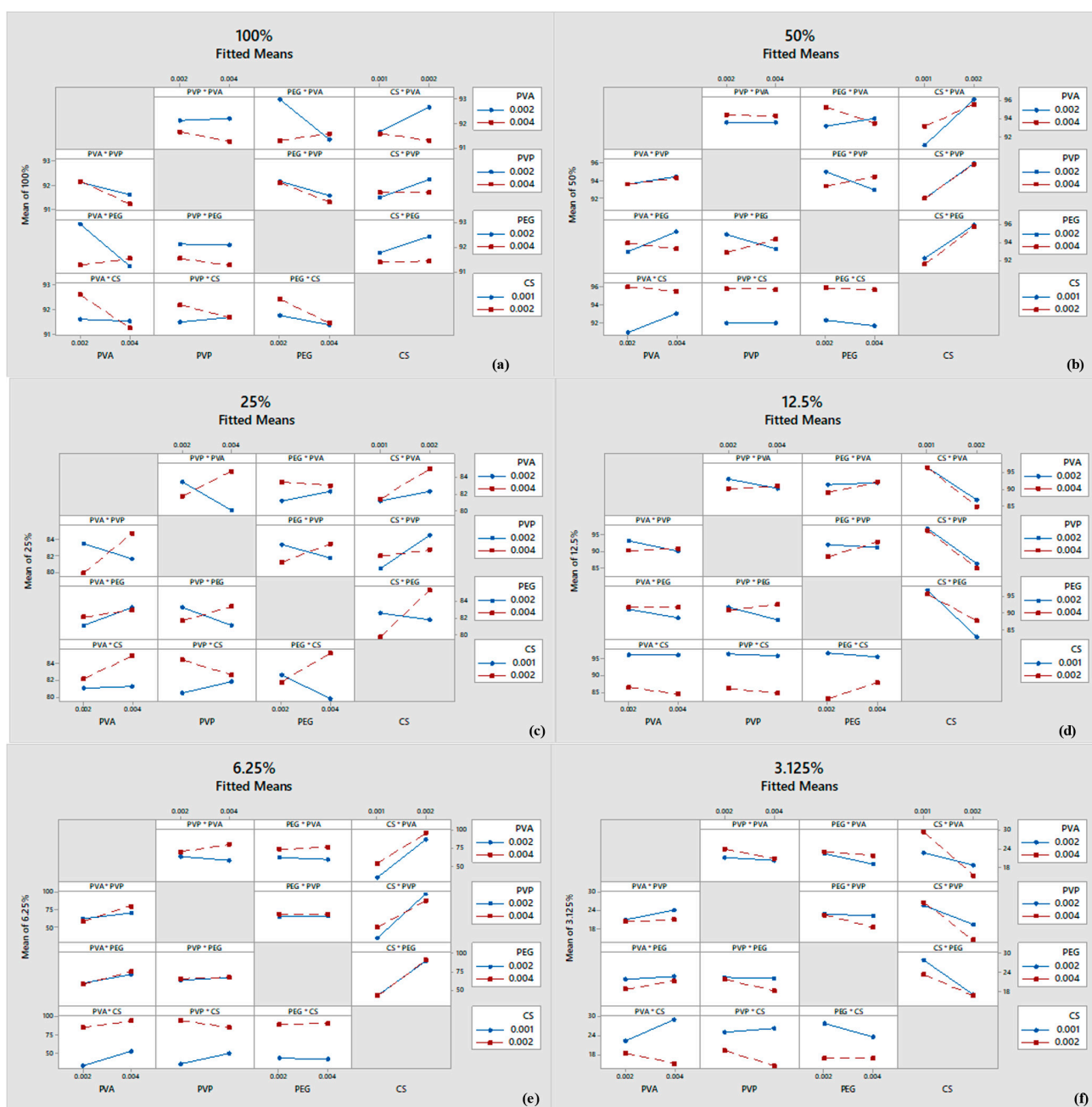


**Figure S6.** Main effect plots on MIC<sub>50</sub> for M1-M16 using by (a) Taguchi methods main effect plots for means, (b) Linear regression.



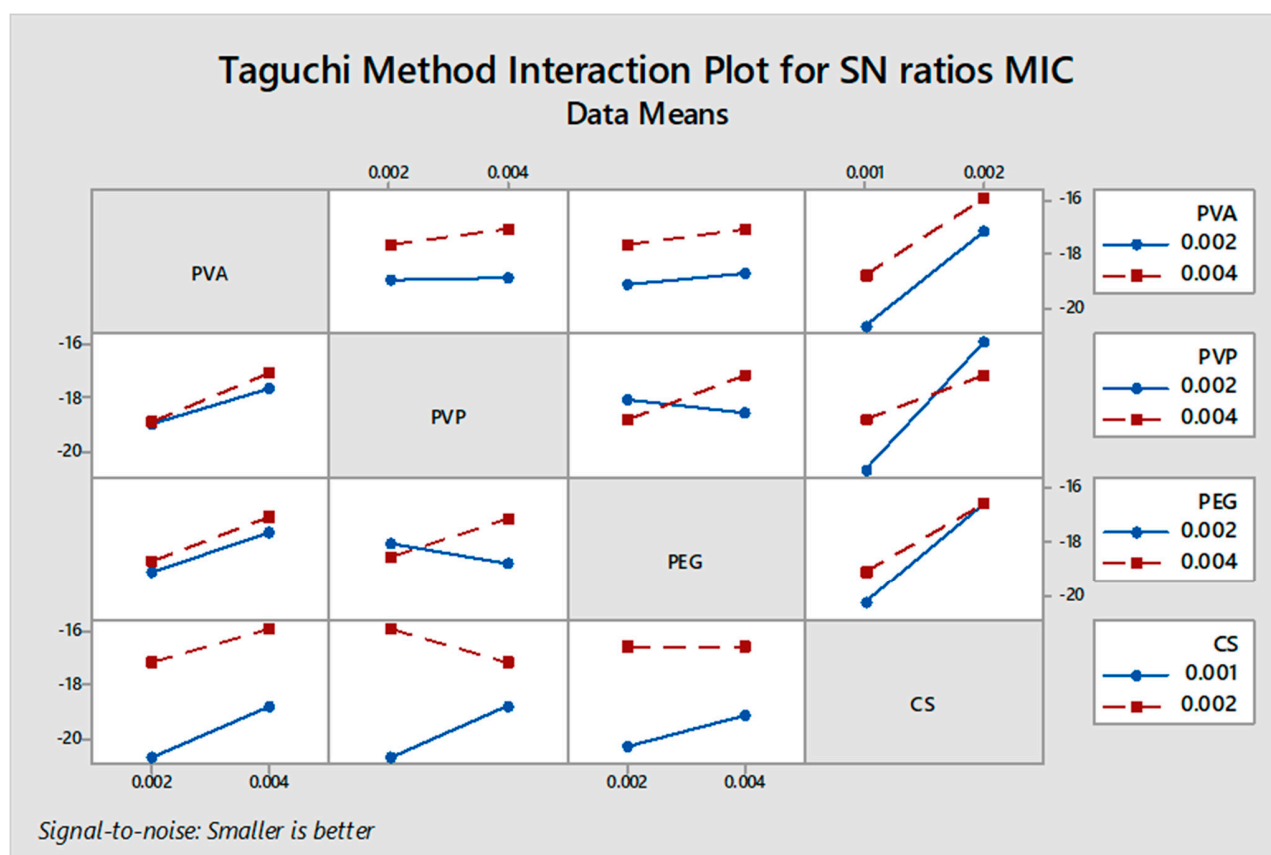
**Figure S7.** Main effect plots for S/N ratios on inhibition percentage for M1- polymer percentage of (a) 100%, (b) 50%, (c) 25%, (d) 12.5%, (e) 6.25%, (f) 3.125% using Taguchi methods (left to right).



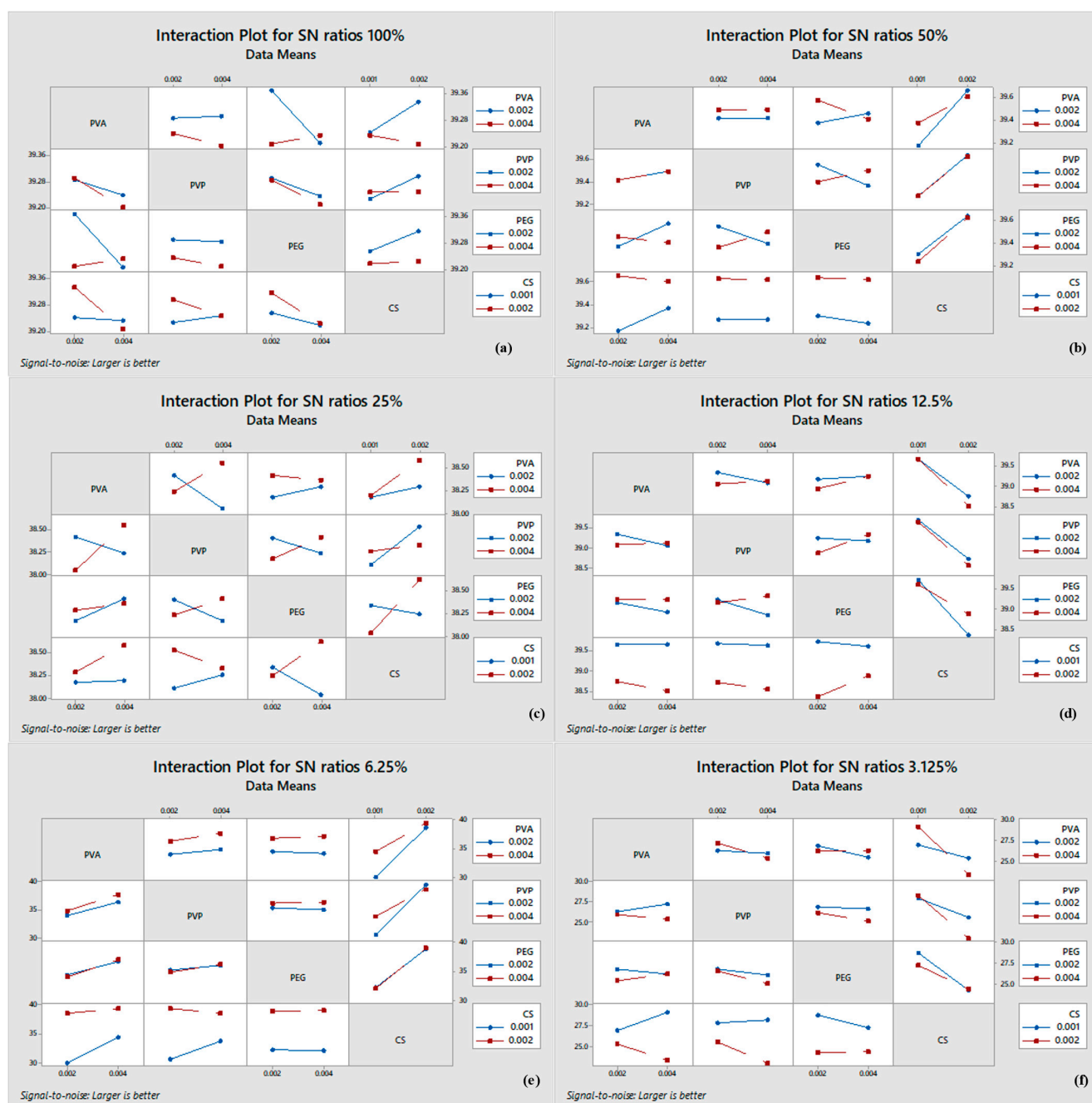


**Figure S9.** Interaction plots for means on inhibition percentage for M1- M16 with polymer percentage of (a) 100%, (b) 50%, (c) 25%, (d) 12.5%, (e) 6.25%, (f) 3.125% using by 2-level factorial design methods (left to right).

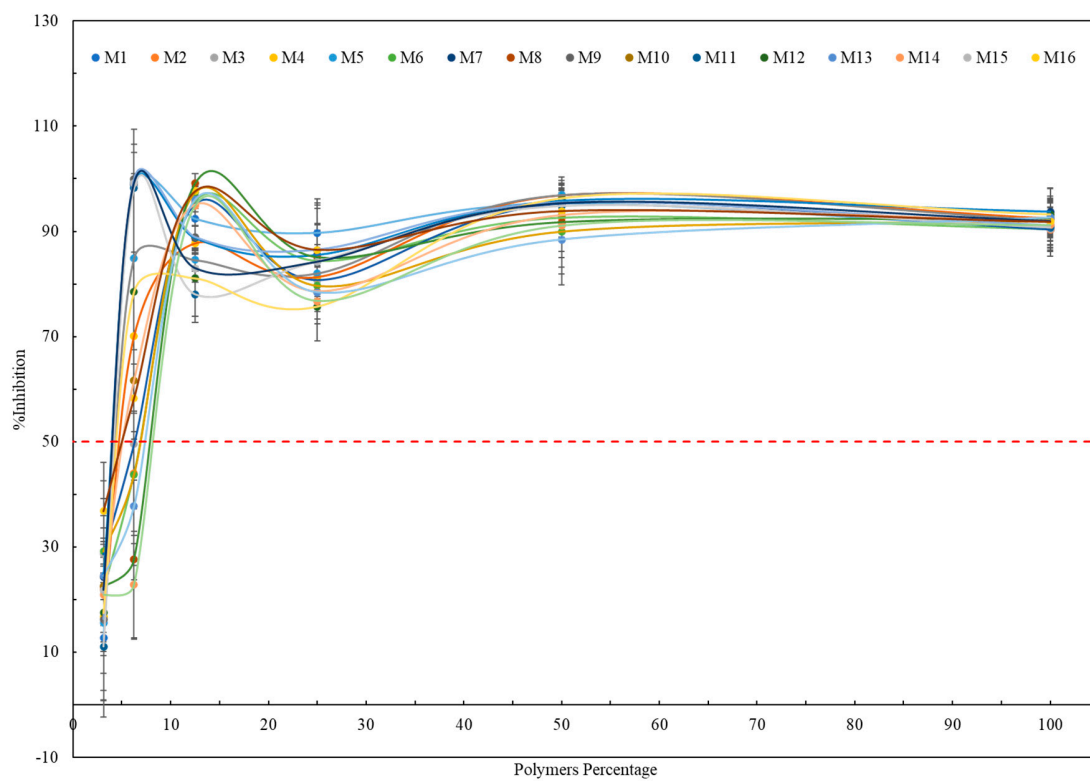




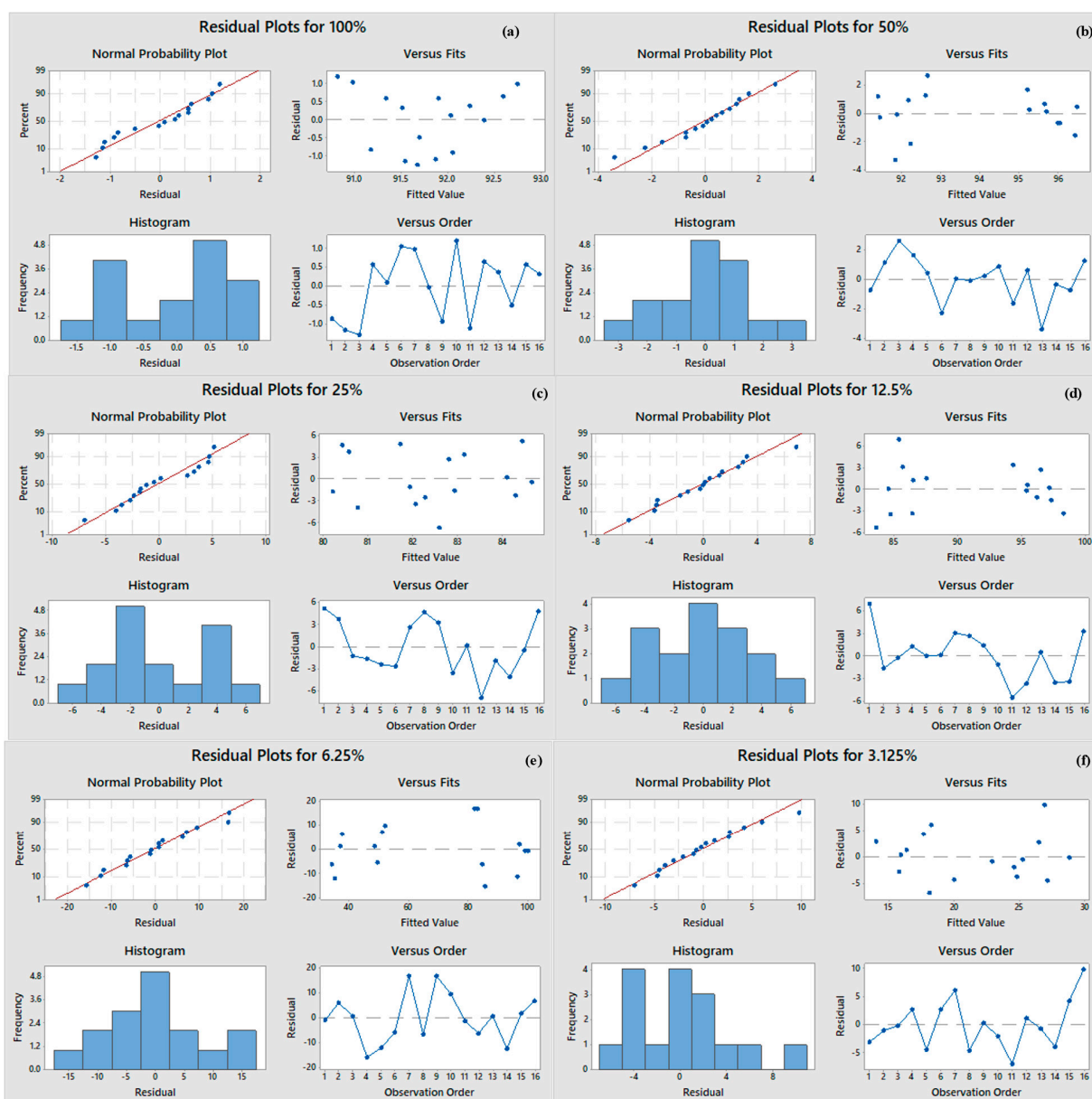
**Figure S10.** Interaction plots for means on MIC<sub>50</sub> for M1-M16 using Taguchi methods for S/N ratios.



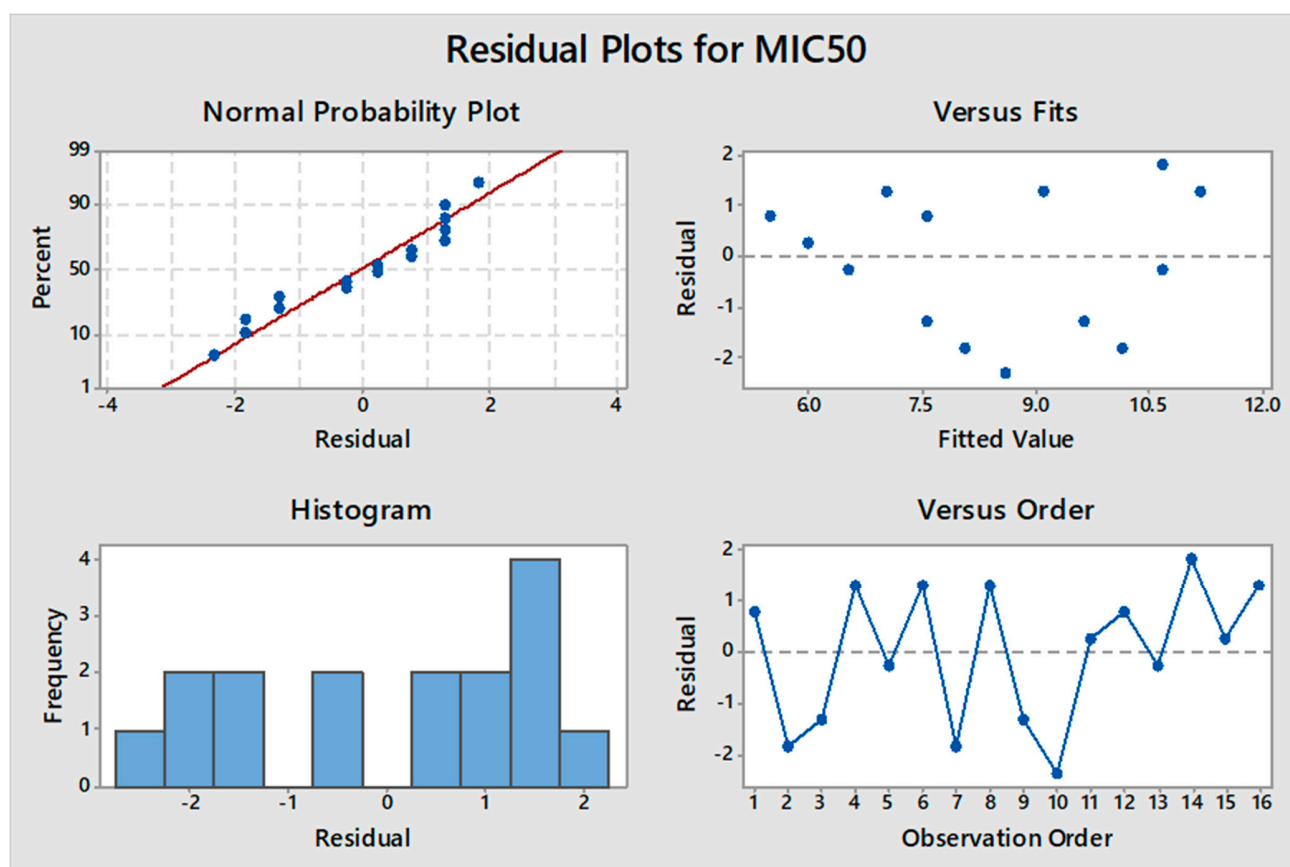
**Figure S11.** Interaction plots for S/N ratios on inhibition percentage for M1-M16 with polymer percentage of (a) 100%, (b) 50%, (c) 25%, (d) 12.5%, (e) 6.25%, (f) 3.125% using by Taguchi methods (left to right).



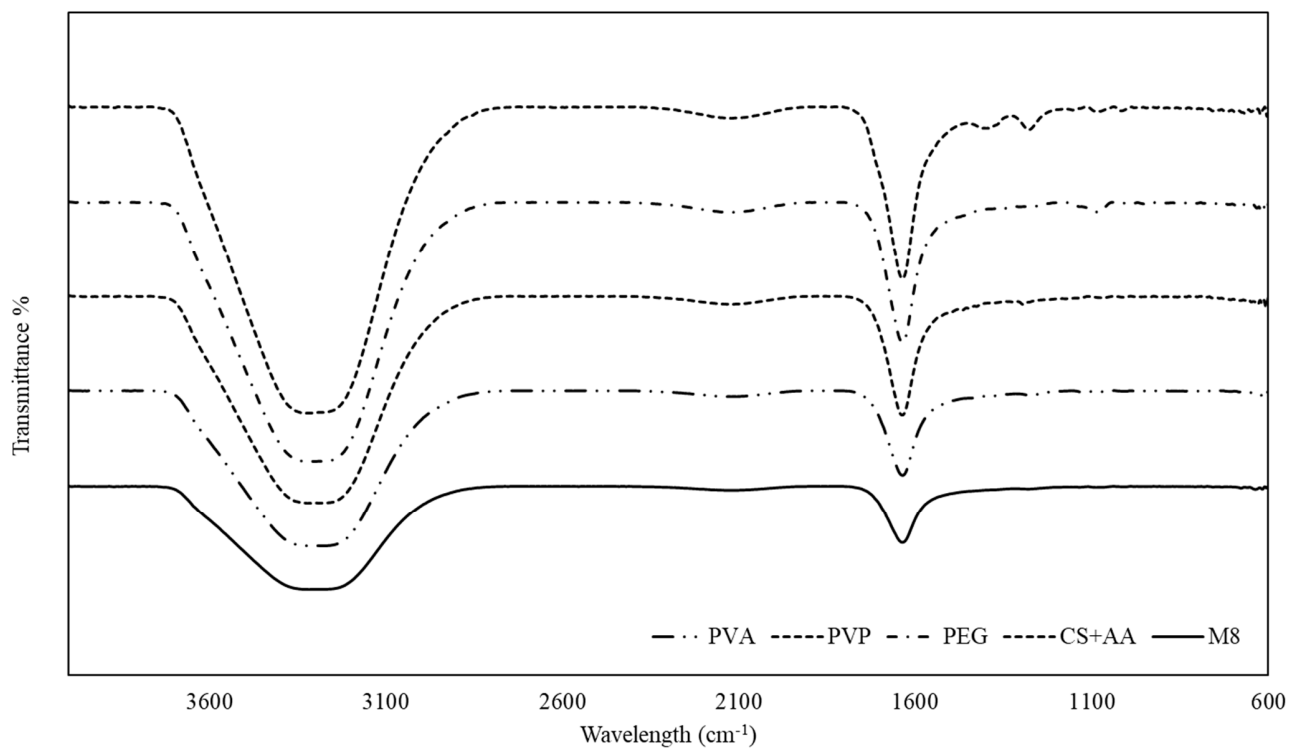
**Figure S12.** The relationship between inhibition percentage and polymers concentration with experimental fittings.



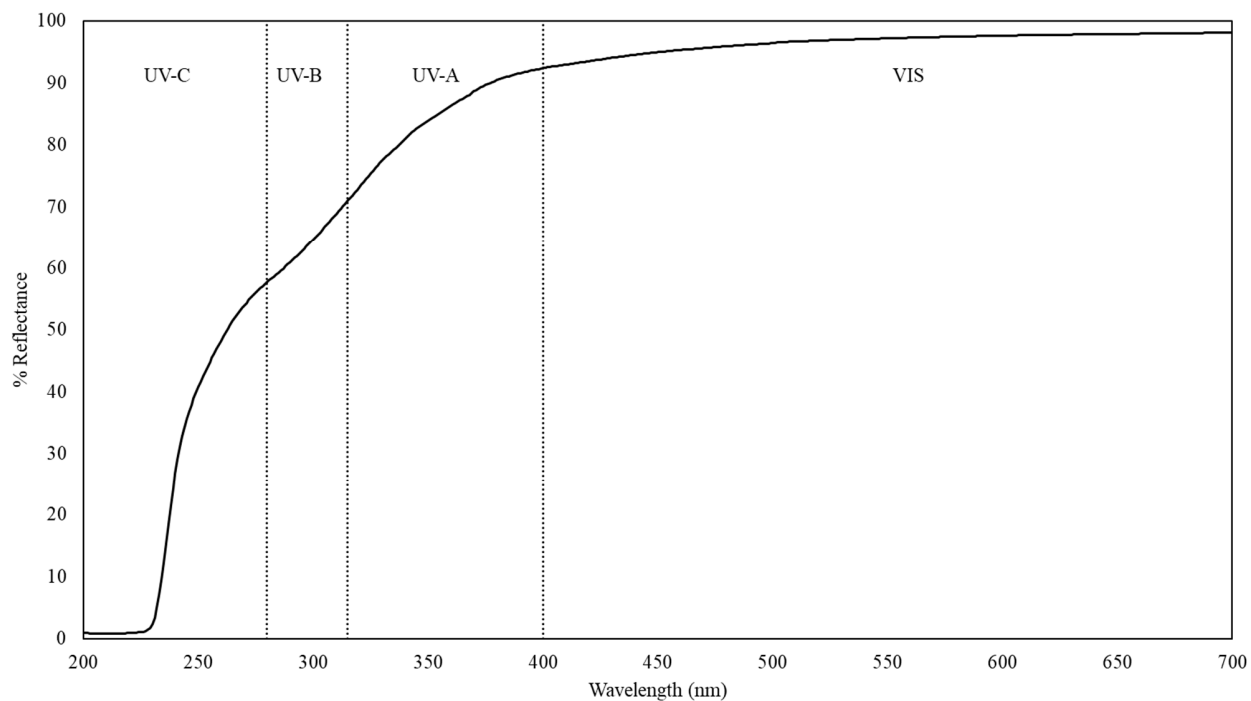
**Figure S13.** Residual plots of the linear regression of polymer blend concentration and inhibition percentage at different polymers percentage (a) 100%, (b) 50%, (c) 25%, (d) 12.5%, (e) 6.25%, (f) 3.125% (left to right).



**Figure S14.** Residual plots of the linear regression of polymer blend concentration and MIC<sub>50</sub>.



**Figure S15.** FTIR analysis of polymers.



**Figure S16.** Reflectance percentage of M8 from 200 nm to 700 nm.