

Extended Data Table 3|Correlation coefficient in Step2

	ρ_{x_ij}			ρ_{y_ij}		
	$i=1$	$i=2$	$i=3$	$i=1$	$i=2$	$i=3$
$j=1$	1.0000	0.5249	-0.9114	1.0000	0.4038	-0.6807
$j=2$	0.5249	1.0000	-0.4465	0.4038	1.0000	-0.3141
$j=3$	-0.9114	-0.4465	1.0000	-0.6807	-0.3141	1.0000

ρ_{x_ij} represent the “time-invariant-linear” correlation coefficient parameter of two design variables (Methods, Eq.(4)). Through the ECP Transformation, the design variable is converted from x to y. ρ_{y_ij} represents the correlation coefficients of the design variables after the ECP transformation(Methods, Eq. (6)).