

Table S1. Central composite design employed in the microwave roasting of the pecan nuts

Point Type	A: Power (W)	B: Time (min)
Factorial	200	2
Factorial	700	2
Factorial	200	5
Factorial	700	5
Axial	100	3.5
Axial	800	3.5
Axial	450	1
Axial	450	6
Center	450	3.5
Center	450	3.5
Center	450	3.5
Center	450	3.5
Center	450	3.5

Table S2. Constraints

Name	Goal	Lower Limit	Upper Limit	Lower Weight	Upper Weight	Importance
A:Power	is target = 700	200	700	1	1	3
B:Time	minimize	2	5	1	1	3
TCD	minimize	1430.97	2145.7	1	1	3
Hardness	is in range	24.24	33.88	1	1	3
TPC	maximize	1.11	1.82	1	1	3
DPPH	is in range	25.7	40.01	1	1	3

Table S3. Solutions

12 Solutions found

Number	Power	Time	TCD	Hardness	TPC	DPPH	Desirability
1	700.000	2.458	1824.164	28.750	1.328	34.405	0.585 Selected
2	700.000	2.466	1822.791	28.748	1.328	34.416	0.585
3	699.997	2.444	1826.520	28.752	1.329	34.384	0.585
4	699.996	2.487	1819.413	28.744	1.327	34.446	0.585
5	699.964	2.428	1829.309	28.755	1.329	34.360	0.585
6	700.000	2.496	1817.827	28.742	1.327	34.460	0.585
7	699.999	2.517	1814.342	28.737	1.327	34.491	0.585
8	699.925	2.405	1833.262	28.759	1.330	34.327	0.585
9	700.000	2.563	1806.841	28.724	1.325	34.557	0.585

10	699.995	2.661	1791.022	28.688	1.323	34.701	0.583
11	699.998	3.376	1687.819	28.043	1.303	35.741	0.554
12	699.999	3.621	1657.292	27.670	1.296	36.097	0.536