S/No	Samples	Flue Gases before Scrubber (%) ppm				Temperature, T (^oC)	Flue Gases after Scrubber (%) ppm				Temperature, T (^oC)
		CO	CO_2	NO_X	SO_X		CO	CO_2	NO_X	SO_X	
1	100%PL	320	50	150	224	168	108	7	21	13	105
2	75%PL + 25%TE	338	63	168	315	205	176	12	34	40	134
3	50%PL + 50%TE	340	70	175	351	286	180	25	38	52	170
4	25%PL + 75%TE	362	78	184	356	305	190	27	47	58	185
5	100%TE	330	67	90	230	212	115	3	23	85	128
6	100%PA	210	41	6	108	130	98	15	00	3	100
7	75%PA + 25%PL	264	51	13	140	180	109	19	2	9	145
8	50%PA + 50%PL	291	70	16	175	215	138	21	4	25	190
9	25%PA + 75%PL	320	79	21	206	230	160	35	5	28	201
10	100%WO	450	85	10	90	250	170	61	1	63	175
11	75%WO + 25%PL	426	81	17	137	210	152	40	3	80	140
12	50%WO + 50%PL	382	72	25	215	183	103	25	16	130	108
13	25%WO + 75%PL	360	61	29	240	140	90	15	18	142	95

4.2 Flue Gas Analysis

The characteristics of CO, CO_2, NOx, and SOx formation were investigated using data from the furnace outlet to the scrubber inlet. Table 2 shows the final emission results in flue gas before and after the scrubber. The flue gas emission tests were carried out under natural induced air flow at the exit of the boiler. The details of the measurement system were introduced elsewhere (Chen, *et al*, 2010).

Prior to the scrubber, the concentrations of flue gases at the furnace outlet were higher. The temperature at the sampling ratio was the primary factor influencing the concentrations of the various gases. Also, too little air was supplied to the burner, and the oxygen is not enough to completely form CO_2 with all the carbon in the fuel. Instead, some oxygen combines with carbon to form carbon monoxide (CO). CO is a highly toxic gas associated with incomplete combustion and efforts must be made to minimize its formation. This effort goes hand-in-hand with improving fuel efficiency and reducing soot generation. As is well known, gases can be generated directly from waste as well as in the combustion system via the homogeneous (same sample) and heterogeneous (different samples) pathways (different compositions of samples).

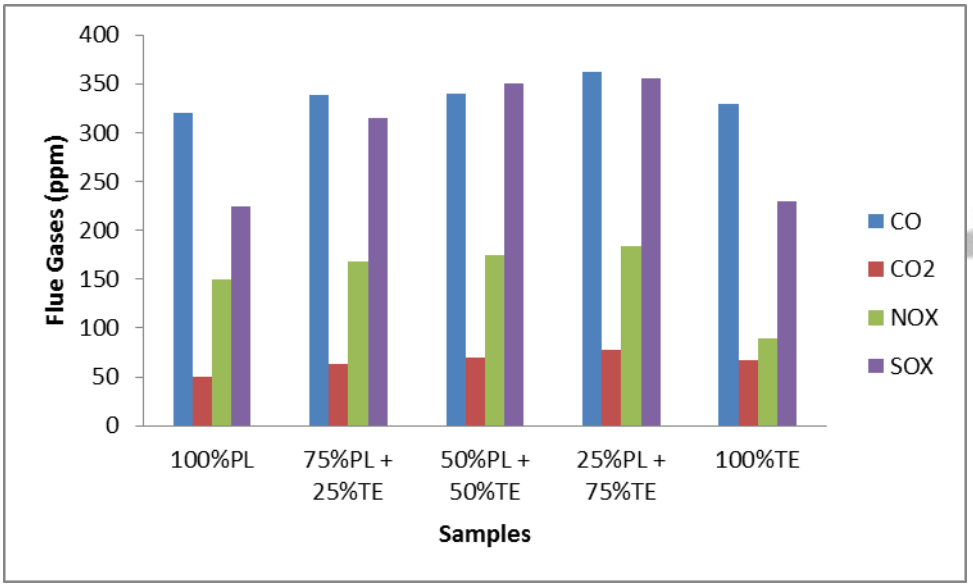

Figure 4: Flue Gases before Scrubber for plastic, textile and textile/plastic blends

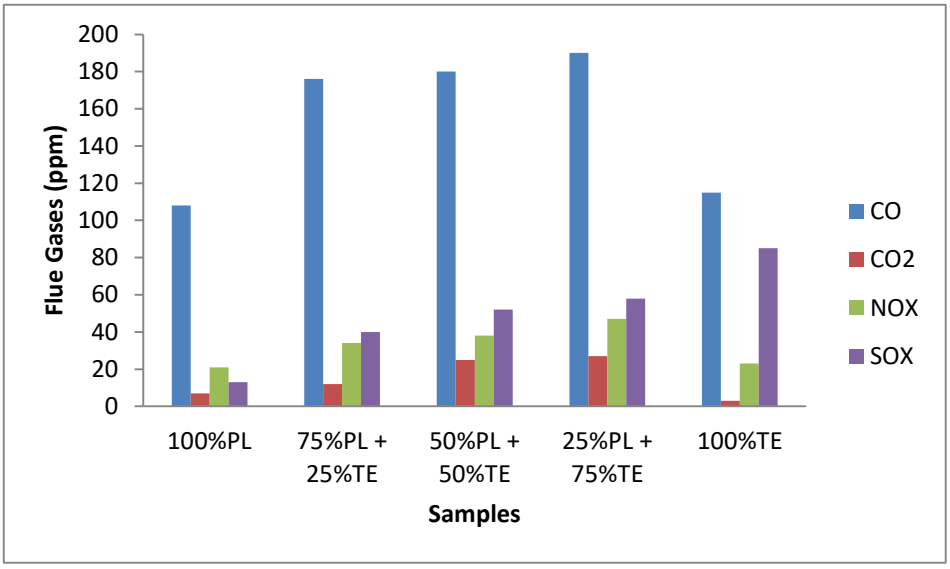

Figure 5: Flue Gases after Scrubber for plastic, textile and textile/plastic blends

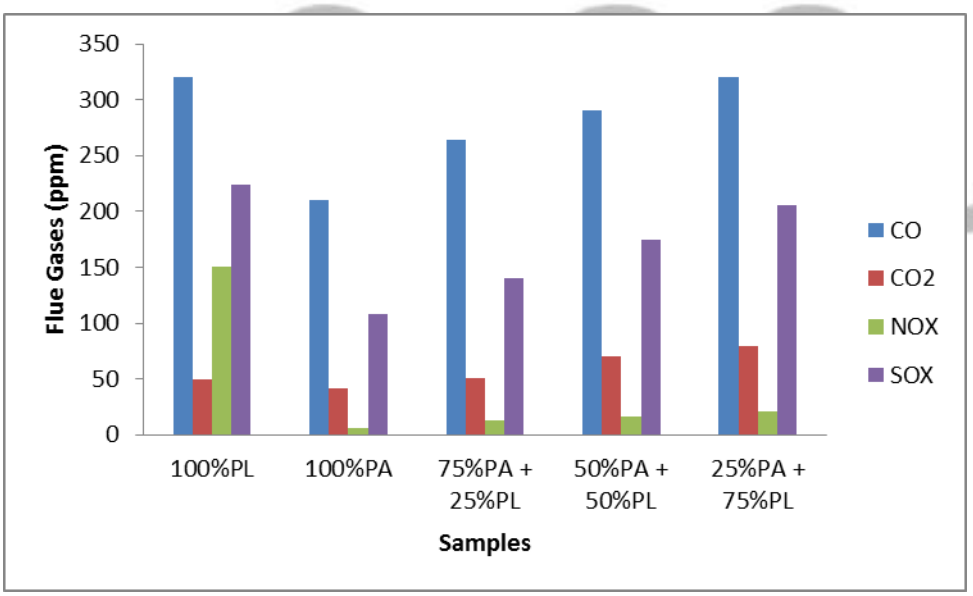

Figure 6: Flue Gases before Scrubber for plastic, paper and paper/plastic blends

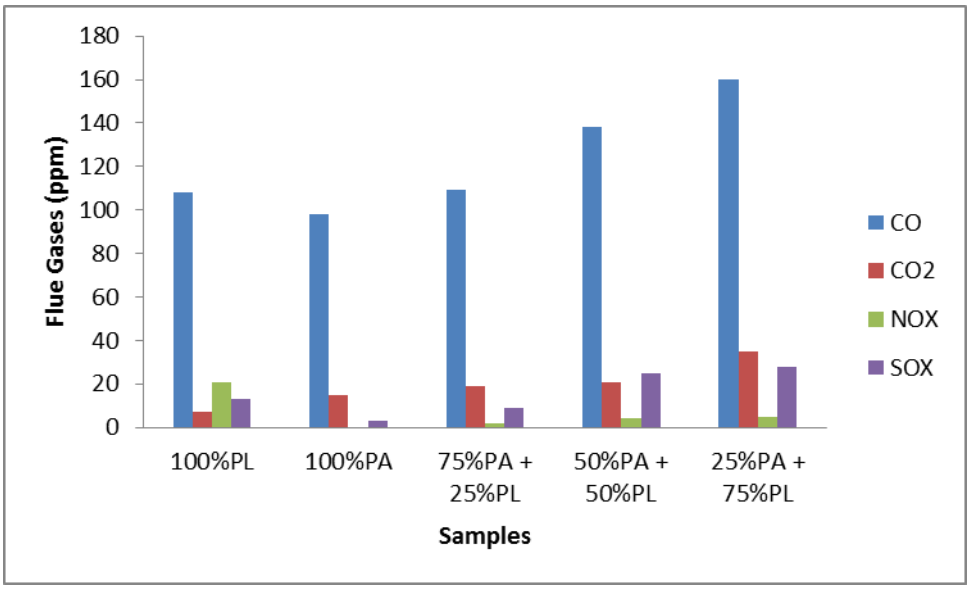

Figure 7: Flue Gases after Scrubber for plastic, paper and paper/plastic blends

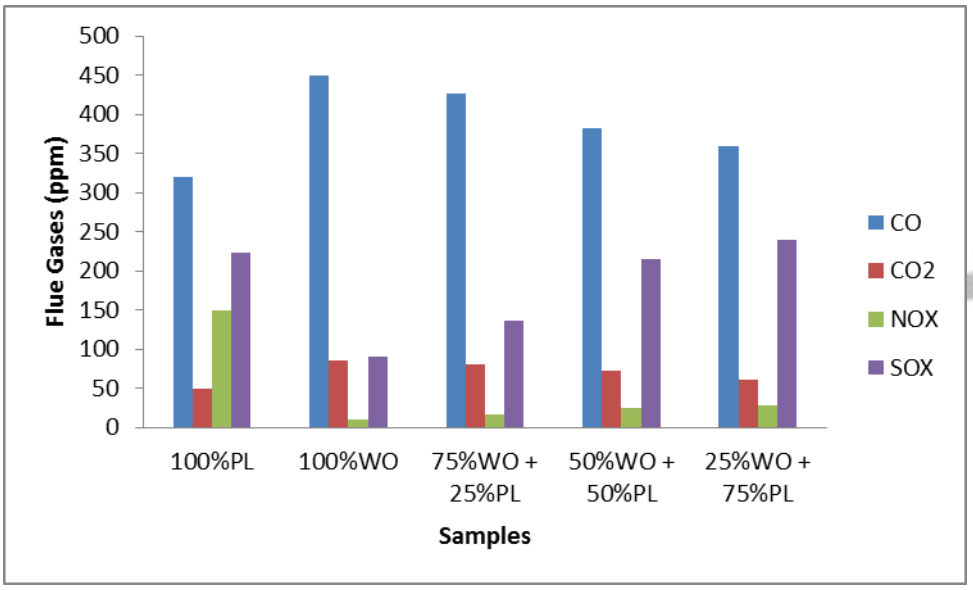

Figure 8: Flue Gases before Scrubber for plastic, wood and wood/plastic blends

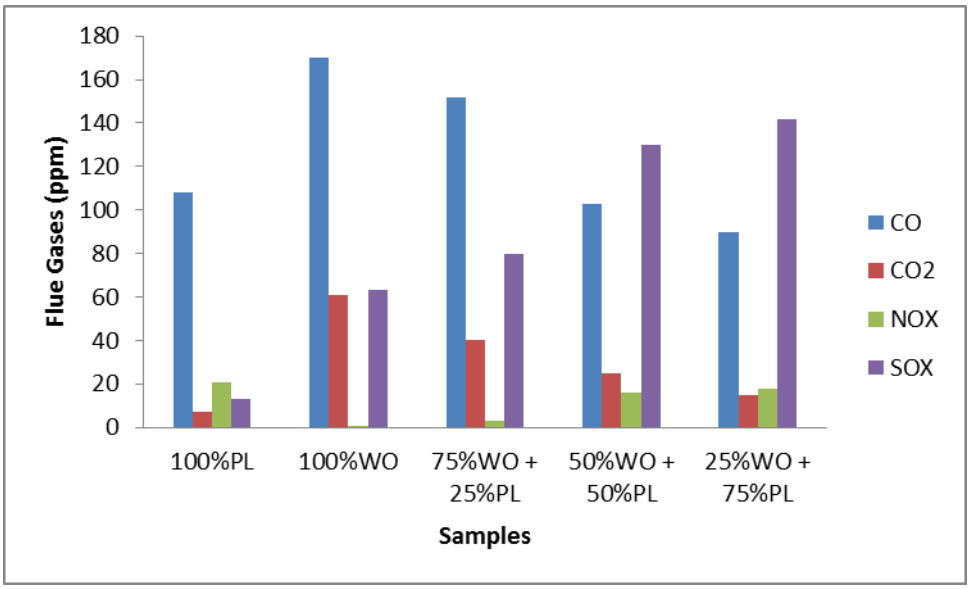

Figure 9: Flue Gases after Scrubber for plastic, wood and wood/plastic blends

5.0 CONCLUSION

The characteristics of CO, CO_2, NOx, and SOx formation were studied using data from the furnace outlet to the scrubber inlet, and the results show the final emission results in flue gas before and after the scrubber. Prior to the scrubber, flue gas concentrations at the furnace outlet were higher. The primary factor influencing the concentrations of the various gases was the temperature at the sampling ratio. During the high-temperature incineration of pure plastic waste, the most gases were released. The amounts of gases released in the heterogeneous samples are proportional to the amount of compounded plastic material, indicating that the more plastic there is, the more flue gases are released, and the scrubber was critical in reducing CO, CO_2, NOx, and SOx emissions.

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