**SUPPLEMENTARY INFORMATION**

**Hydrothermal Co-liquefaction of Biomass and Plastic Wastes into Biofuel: Study on Catalyst Property, Product Distribution and Synergistic Effects**

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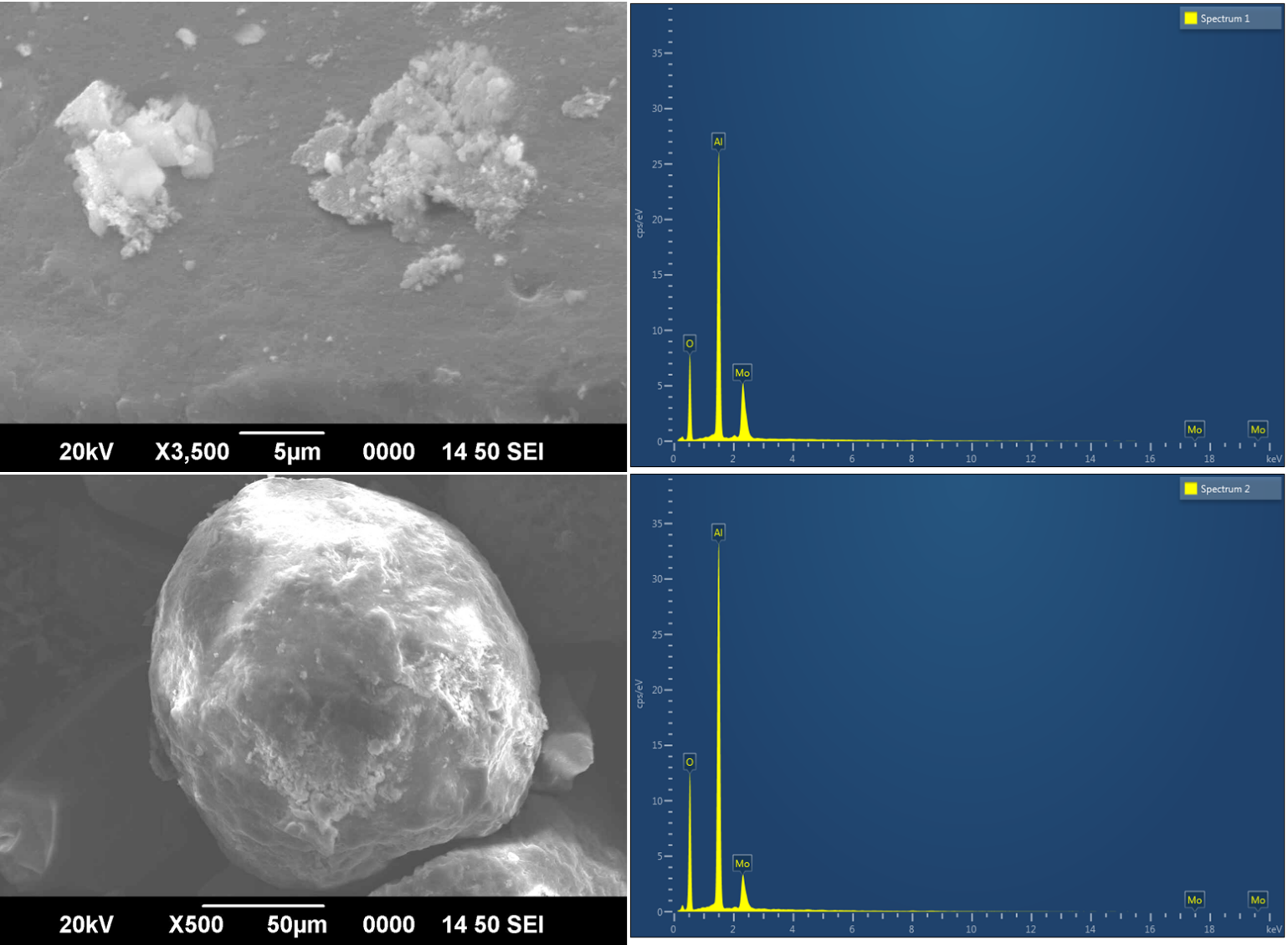
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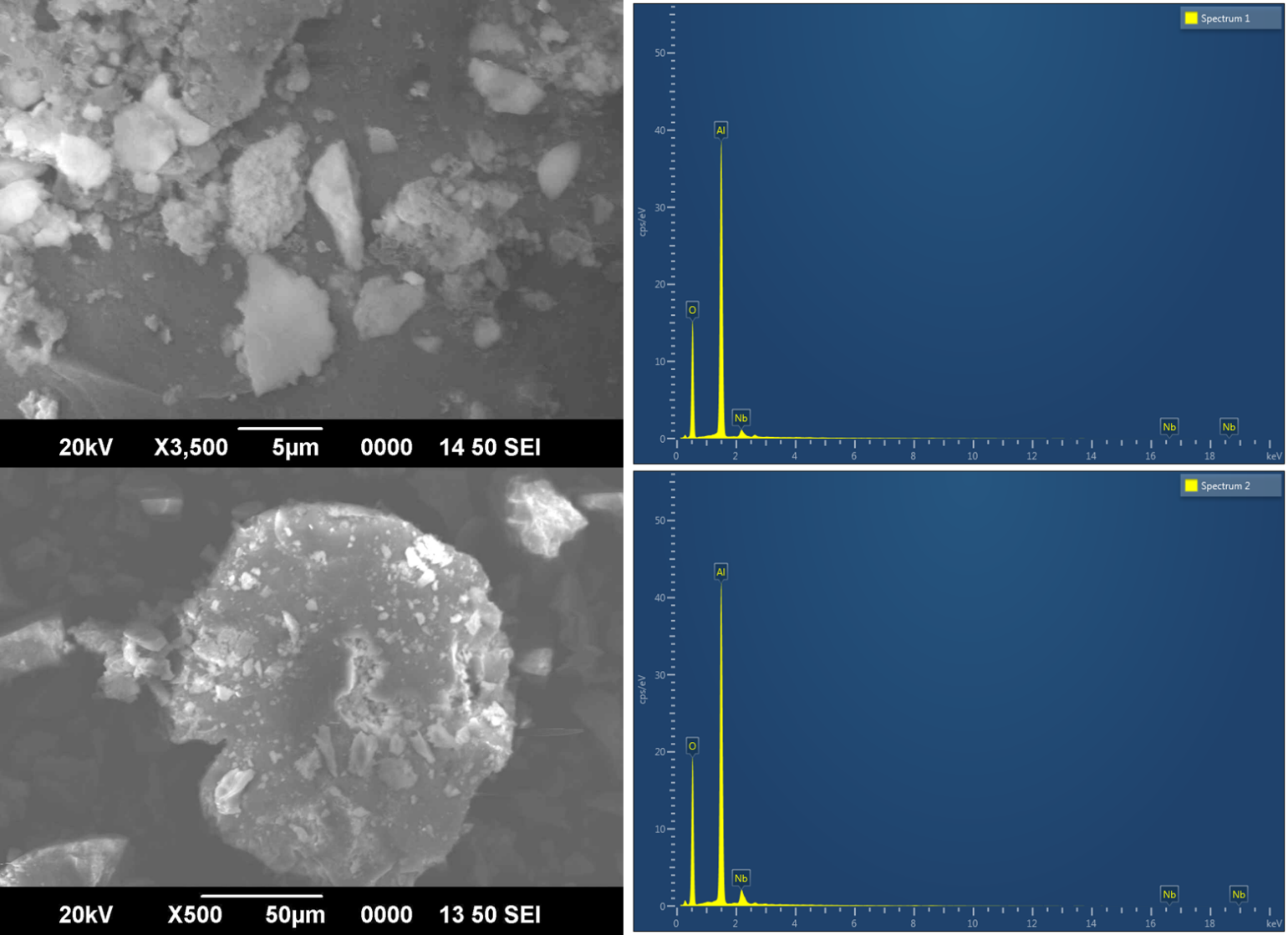
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**Calculations**

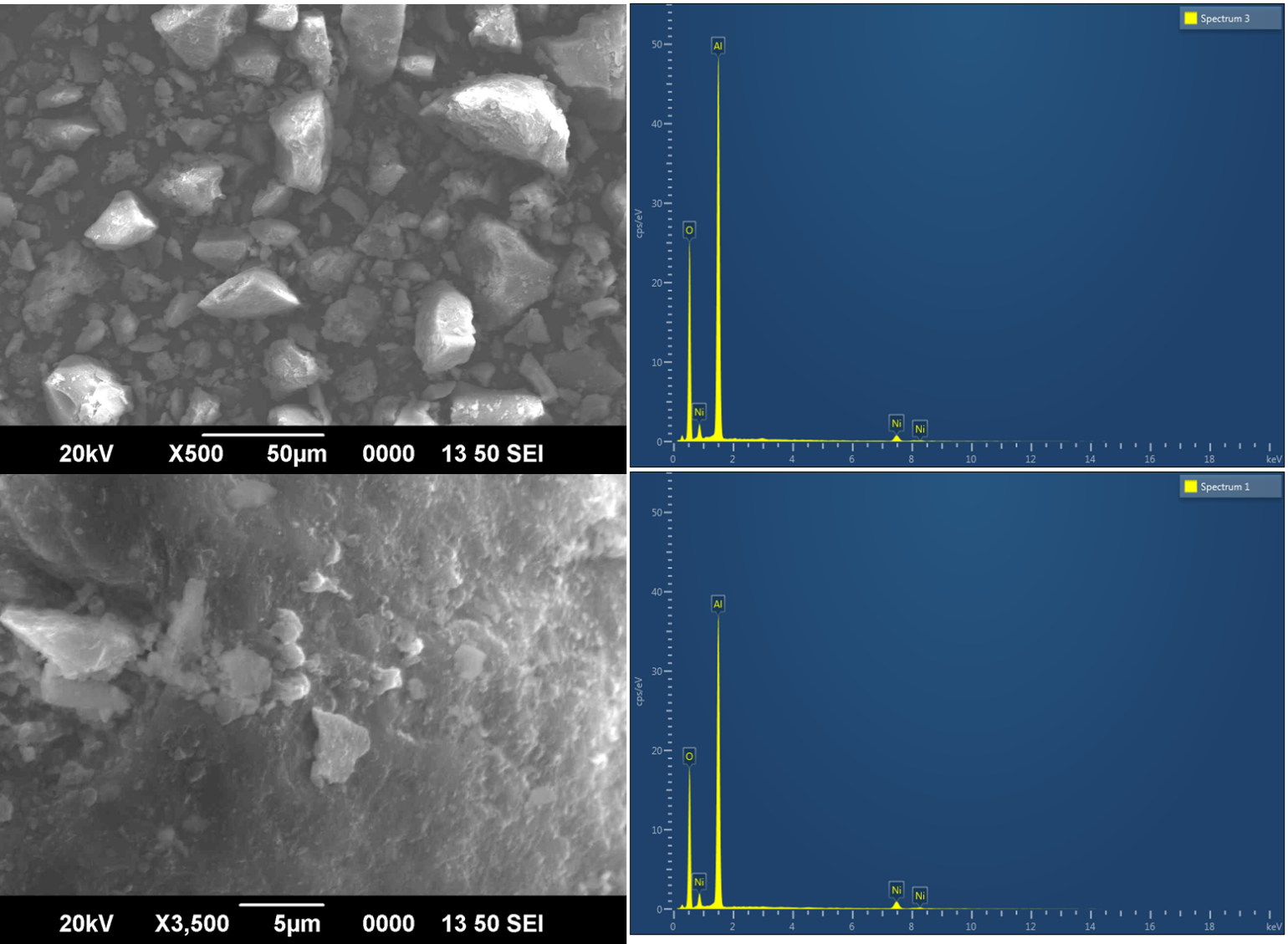
(0.363302\*C)+(1.087033\*H)-(0.100992\*O)



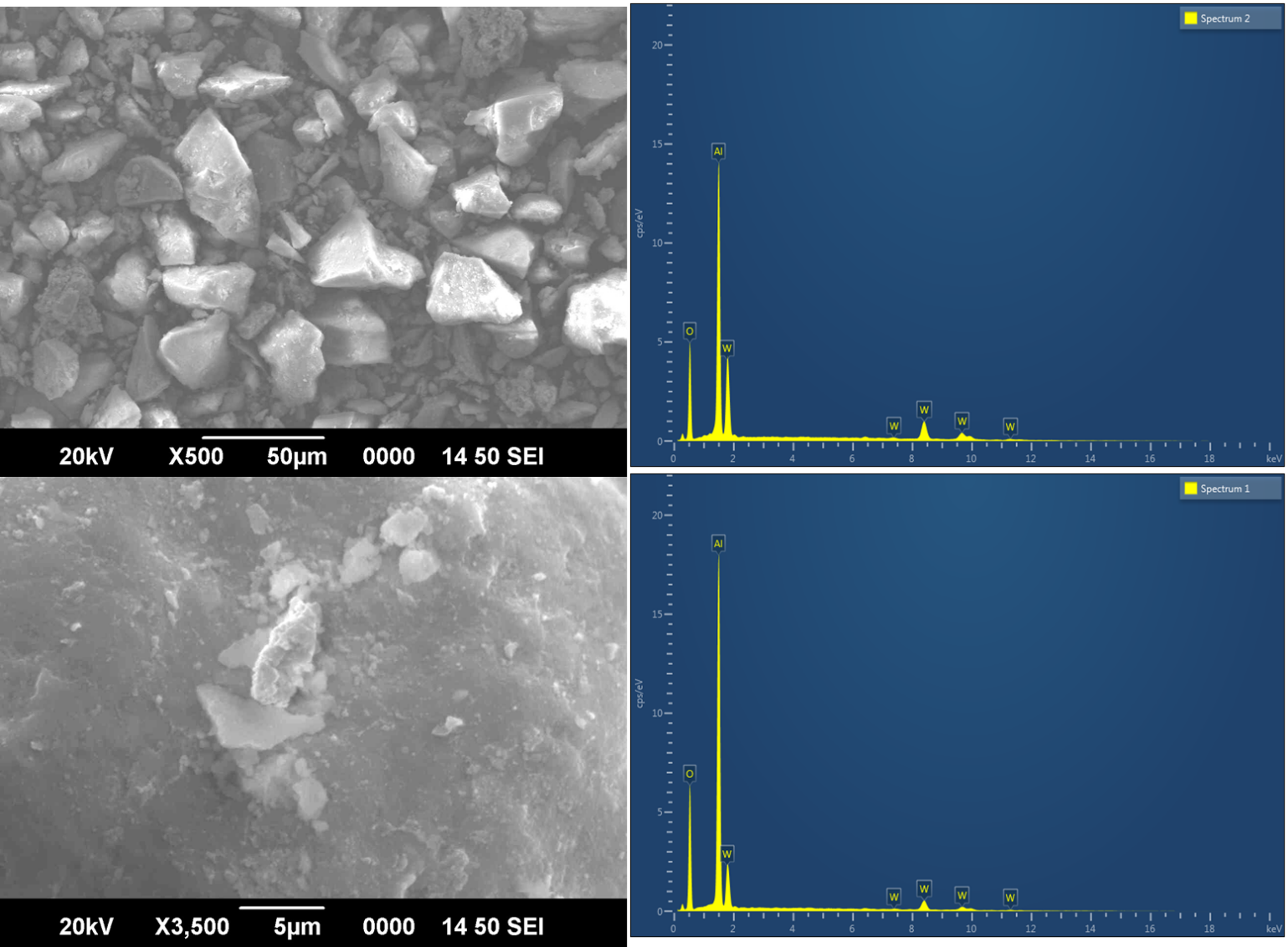
**Fig. S1a.** SEM–EDAX of Mo/alumina catalyst



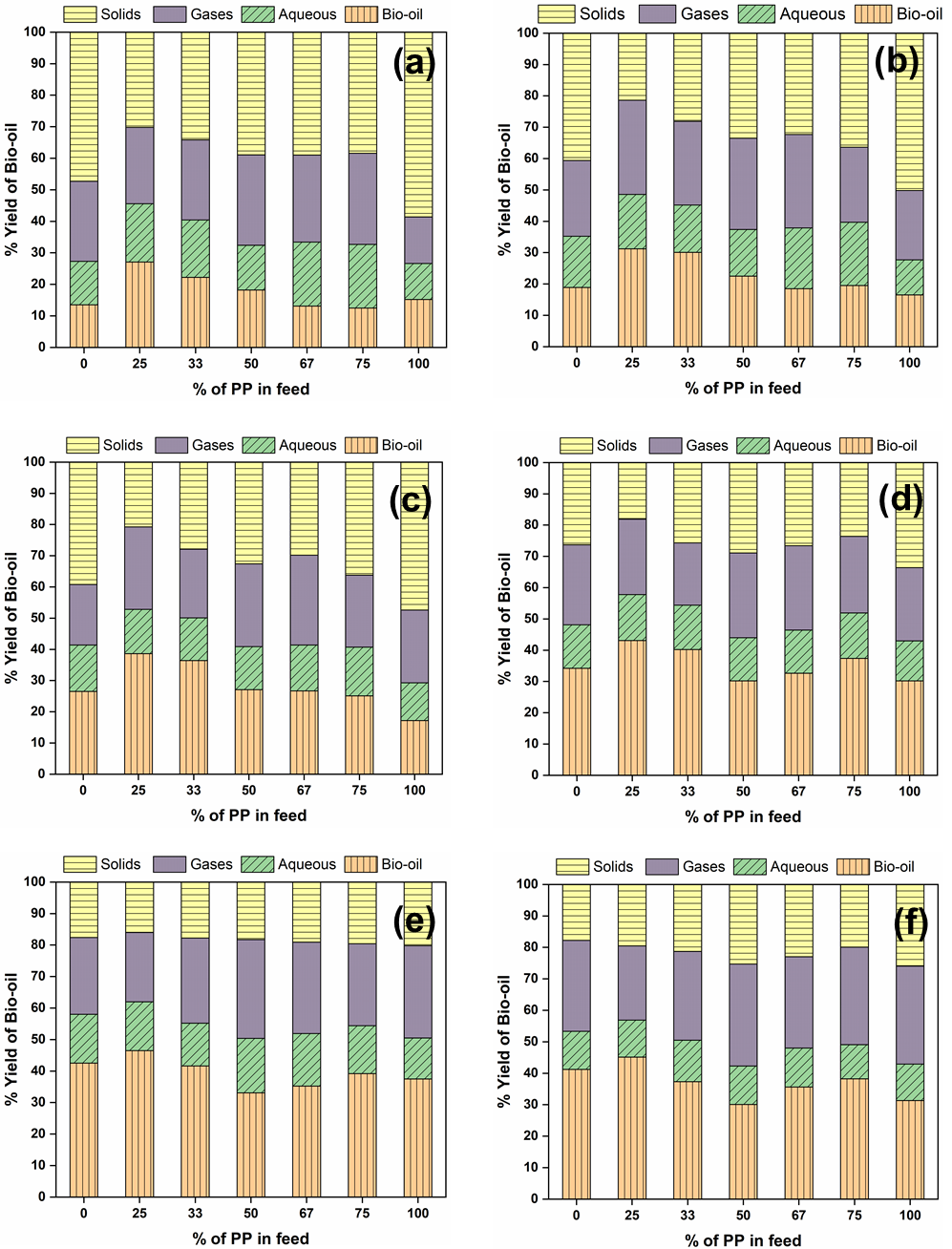
**Fig. S1b.** SEM–EDAX of Nb/alumina catalyst



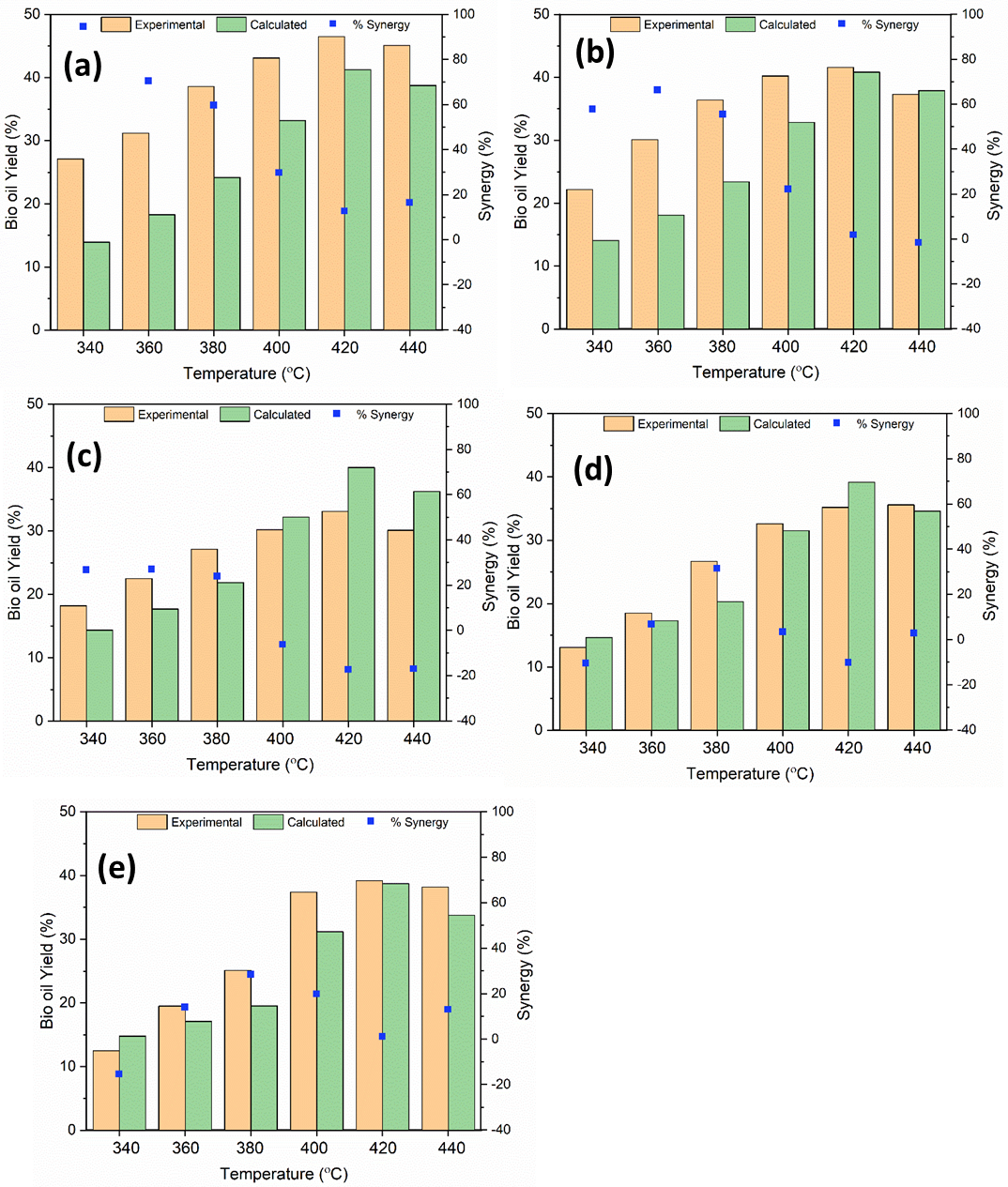
**Fig. S1c.** SEM–EDAX of Ni/alumina catalyst



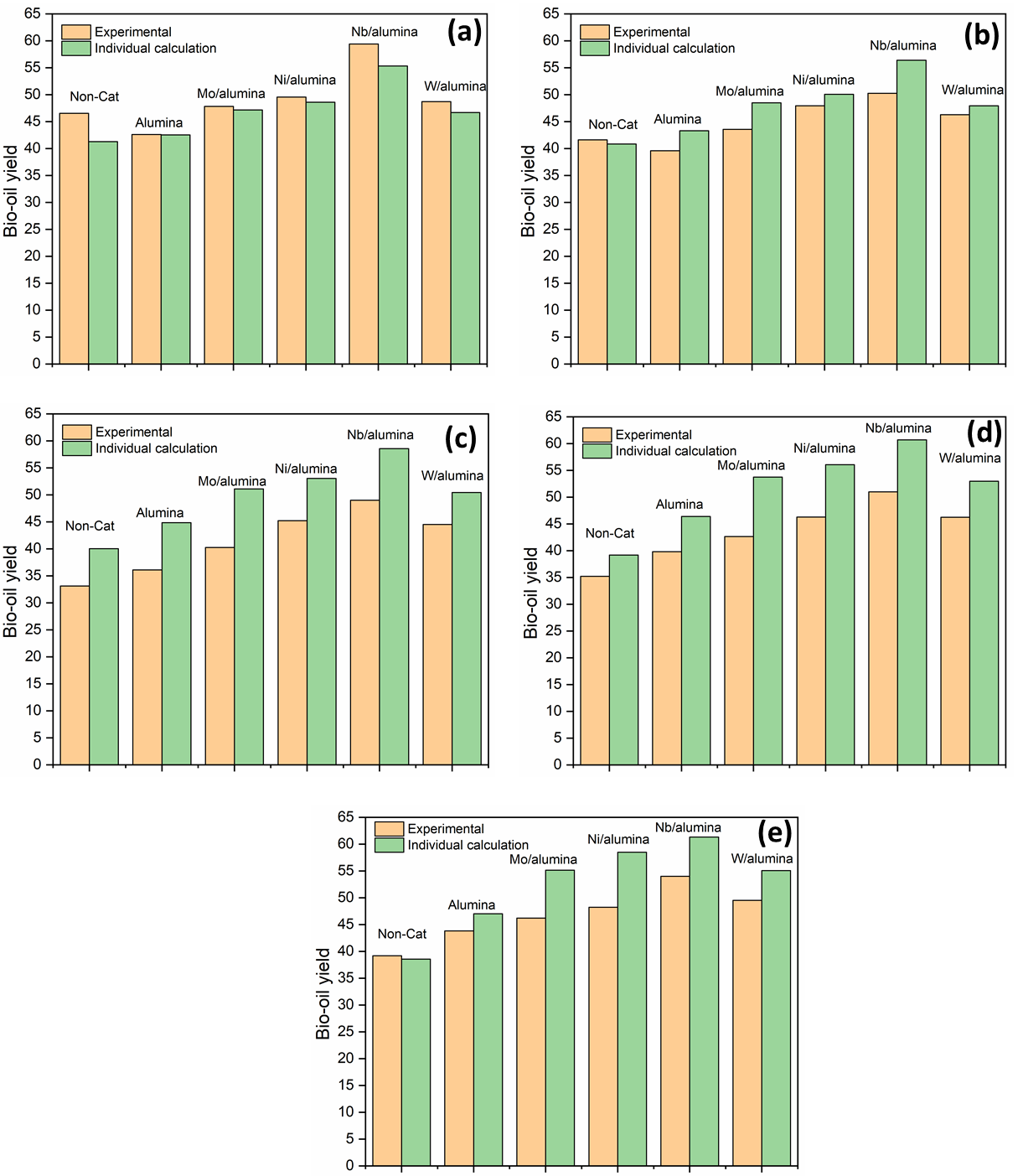
**Fig. S1d.** SEM–EDAX of W/alumina catalyst



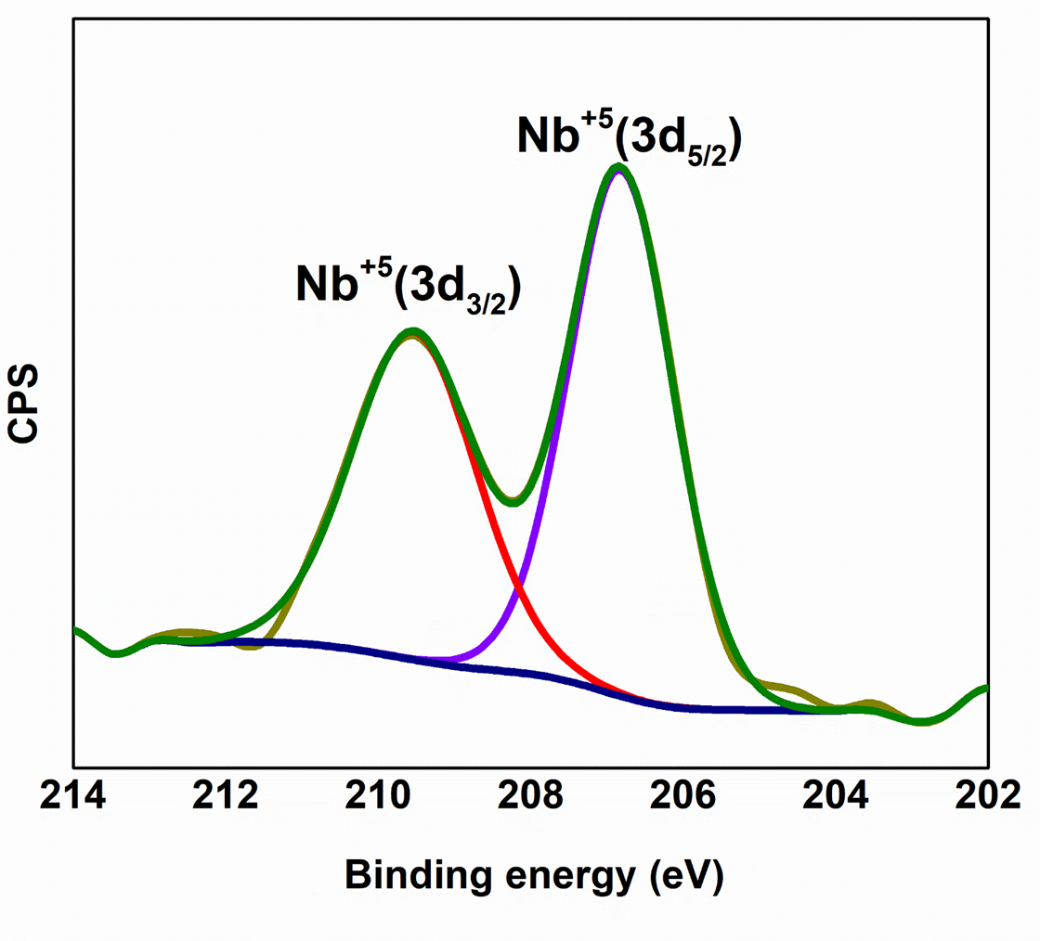
**Fig. S2.** The yield % of bio-oil, aqueous, gas and solid products obtained from the hydrothermal co-liquefaction of *Prosopis juliflora* (PJ) and with the addition of polypropylene (PP) in different percentage (25 %, 33 %, 50 %, 67 %, 75 %) at temperature of (a) 340 ˚C, (b) 360 ˚C, (c) 380 ˚C, (d) 400 ˚C, (e) 420 ˚C, and (f) 440 ˚C for 60 min (non-catalytic reactions).



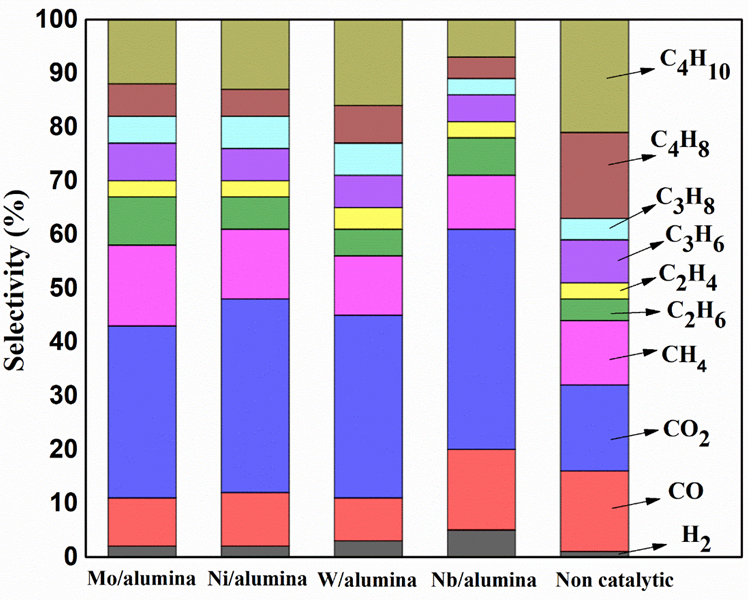
**Fig. S3.** Comparison of the obtained bio-oil yield (%) and the calculated (anticipated) bio-oil yield (%) obtained with different PP addition to PJ (a) 25 %, (b) 33 %, (c) 50 %, (d) 67 %, and (e) 75 % at temperature of 340 ˚C, 360 ˚C, 380 ˚C, 400 ˚C, 420 ˚C, and 440 ˚C for 60 min (non-catalytic reactions).



**Fig. S4.** Comparison of the obtained yield of bio-oil with the calculated anticipated yield from the hydrothermal co-liquefaction of *Prosopis juliflora* (PJ) and with the addition of polypropylene (PP) in different PP percentage of (a) 25 %, (b) 33 %, (c) 50 %, (d) 67 %, (e) 75 % at 420 ˚C for 60 min in the presence of catalysts.



**Fig. S5.** Deconvoluted spectra of Nb 3d region of Nb/alumina catalyst



**Fig. S6.** % Selectivity of products in gas for the hydrothermal liquefaction of 1:3 (PP: PJ) with non-catalytic and Mo/alumina, Ni/alumina, Nb/alumina, and W/alumina catalysts (Catalyst: feed= 1: 50, Temperature= 420 °C, time= 60 min).