

# Gas and Bed Axial Composition in a Bubbling Fluidized Bed Gasifier: Results with Miscanthus and Olivine

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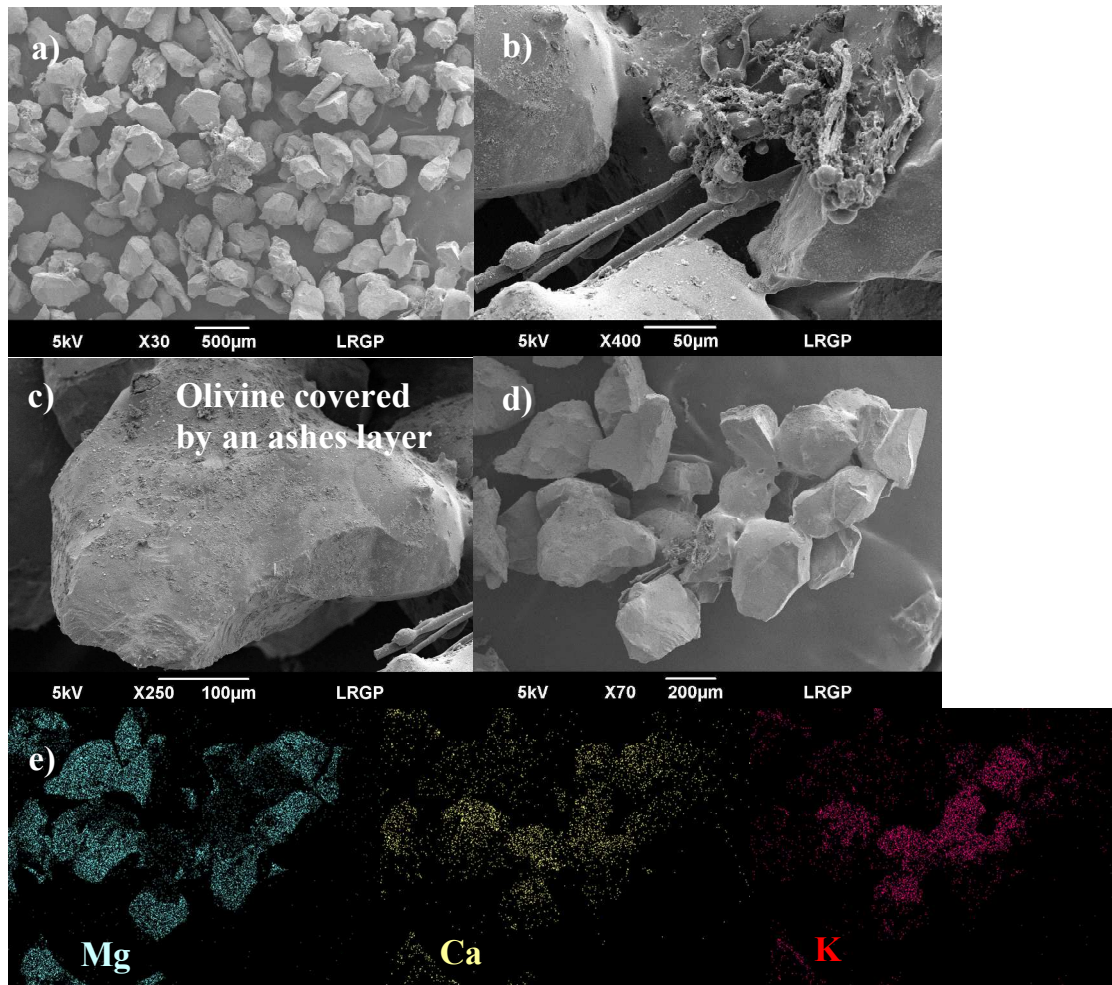
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## 15 **SUPPORTING INFORMATION**

Figure S1a shows a picture of olivine particles agglomerated after 75 min which are similar to the ones after 15 min, even if there is a higher fraction in agglomerates at 75 min (see figure 6) than at 15 min. Fused structures are still present (like a wire in figure S1b). The particles of olivine (figure S1c) are covered by a thicker layer of ashes than at 15 min (more signal from EDX, not shown). A typical agglomerate is presented in figure S1d and with its associated EDX mapping (figure S1e). Similarly to 15 min, the olivine particles (rich in Mg, used as a marker of olivine) are connected with a sticky molten ash rich in K, Si and Ca.

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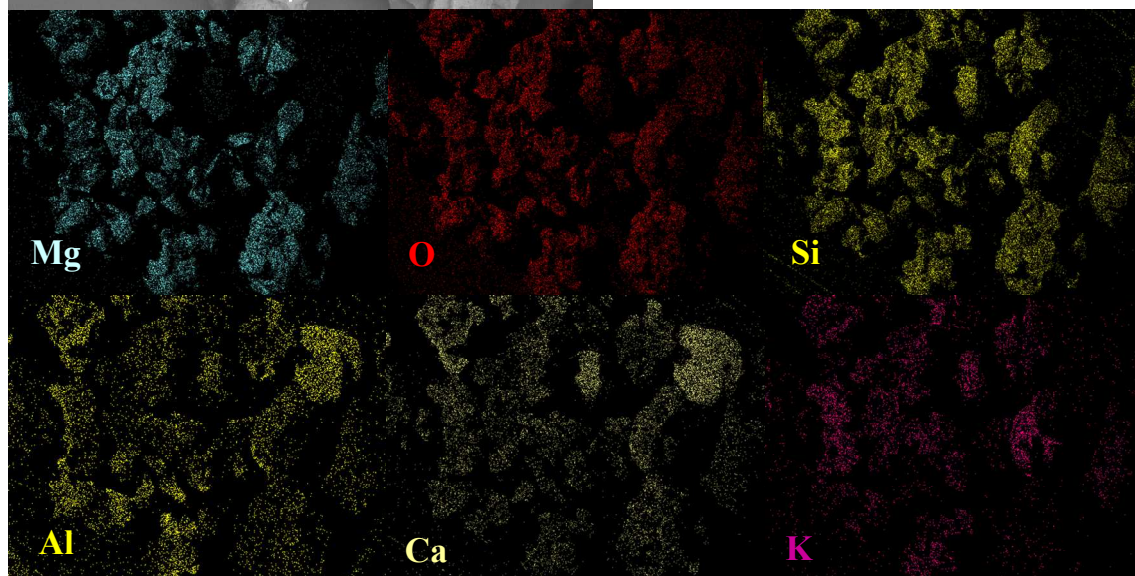
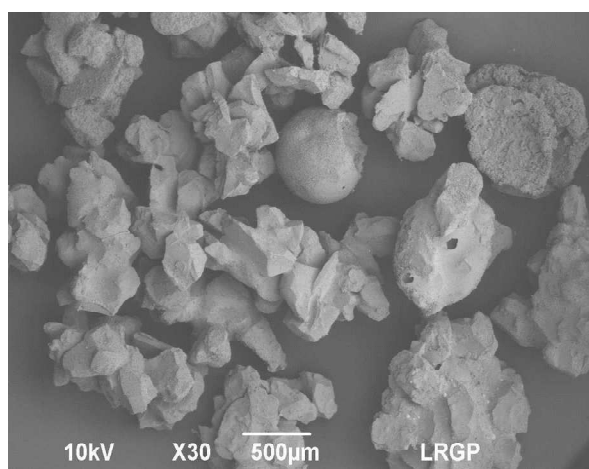
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**Figure S1.** SEM-EDX analysis of the bed material (test #7 at 896°C) sampled during the fluidization after 75min of gasification.

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Figure S2 shows SEM-EDX analysis of an agglomerate recovered after gasification at 896°C, complete defluidization and cooling of the bed. This agglomerate is sampled within the layer positioned at 0-10 cm from the grid. One can see a very heterogeneous morphology and composition of particles with some being rich in Ca and Al (on the upper right side), some other zones rich in K and a round particle (in the middle) rich in O, Si, Al, Ca and K. Mg is a good marker for some zones on the surface of olivine particles with a lower content in ashes.

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**Figure S2.** SEM-EDX analysis of the bed material (test #7 at 896°C) sampled after defluidization and cooling of the bed.