Lighting-up marijuana residues to produce energy - the thermochemical pathway

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For more than a year now, marijuana has been legalized in Canada for medicinal as well as for recreational purposes. The most valuable part of the plant being the leaves and the flowers, the residual part of the plant (lignocellulosic-based) could be available as a very cheap residue. With the increasing interest towards the bioactive portions of the plants, a large amount of residual biomass is being produced and the Biomass Technology Laboratory has been putting significant efforts into paving the way towards the utilization of such residues in the energy sector. In light of this, we have been investigating the possibility to produce pellets, steam-exploded pellets, lignin pellets as well as advanced biofuel (ethanol) and biogas. In this presentation will be investigated the thermochemical potential of these residues. First the pellets will be tested for combustion, then by gasification, pyrolysis and finally liquefaction. From this work we hope to investigate the different angle by which this biomass could be taken advantage of both to reduce GHG emissions as well as to cope for part of the demand in fossil fuel from the industrial and transportation sector.