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**Amines modified fibers obtained from natural *Populus Tremula* and their rapid biosorption of Acid Blue 25**

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**Abstract**

The development of low-cost solid sorbents with high sorption capacities has gained a major interest. In the current study, amines modified natural fibers were prepared via the hydrothermal method by using ethylenediamine and hydrazine as modifiers and fibers obtained from natural *Populus Tremula* as raw materials. Unmodified and amines modified fibers were characterized and were employed in batch mode experiments for the biosorption of Acid Blue 25 (AB25) as a pollutant model from water samples. The studied fibers were proven to be a lignocellulosic fiber with a 12% lignin content in addition to a high content of cellulose (60%). The coordinating sites were 0.578 and 0.647mmol.g<sup>-1</sup> for the ethylenediamine-fiber and the hydrazine-fiber. The registered adsorbed amounts of AB25 follow the order: ethylenediamine-fiber (67mg.g<sup>-1</sup>) >hydrazine-fiber (48mg.g<sup>-1</sup>) > unmodified fiber (22.33mg.g<sup>-1</sup>). The fitting of the experimental data to theoretical equations reveals that the biosorption complies well with the pseudo-second-order for the amines

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