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Design of the Biotechnological System for the Cultivation of a Polysaccharide-Producing Microorganism and Metabolites Separation

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SUMMARY

This paper presents a design of the biotechnological system established for the cultivation of a polysaccharide-producing microorganism and the separation of the polysaccharide together with other metabolites. The strain used is a halophilic archaeon called *Haloferax mediterranei* (Mironescu et al., 2003). On designing the biotechnological system, some requirements are important: The recipients and the pipes must be resistant to the corrosion action of the cultivation substrate very rich in NaCl (125 to 150 g/l); A command and control system for pH, temperature and substrate and inoculum feeding is necessary; A system for monitoring dissolved oxygen and gases evacuated from the bioreactor (O_2 and CO_2) is demanded; The control of oxygen dissolved in the cultivation broth (DO_2) using agitation as manipulated variable is intended; the separation of EPS and of the other intracellular metabolites (carotenoidic pigments and poly-hydrohybutyrate PHB) has to be realised. Taking into account these requirements, the technical solution is presented in Fig.1.

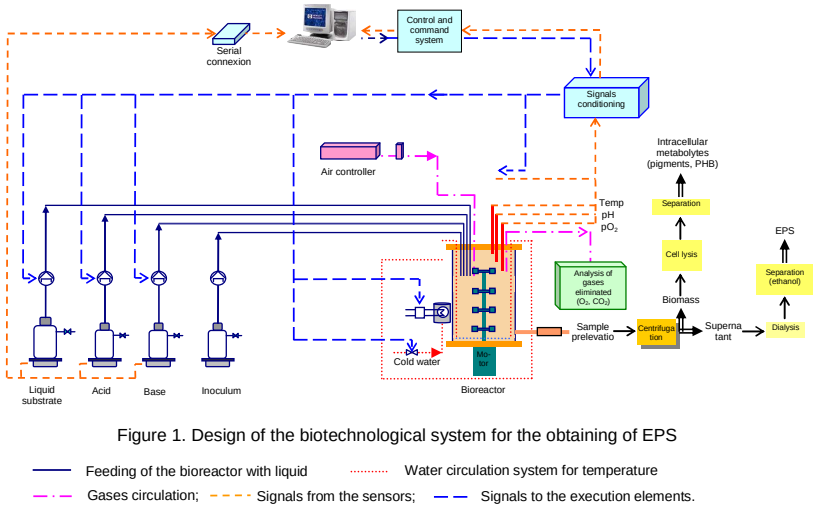

Figure 1. Design of the biotechnological system for the obtaining of EPS

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