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## NANOSTRUCTURED AZO-POLYSILOXANIC FILMS FOR BIOLOGICAL APPLICATIONS

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### Abstract

The paper presents a new class of azo-polysiloxanes capable to generate nano-structured surfaces, used as cell support. The major advantage of this class of materials is the high flexibility induced by the presence of polysiloxane in the main chain. The possibility to obtain nano-structured surfaces using continuously laser irradiation technique is investigated. Two types of materials are presented, azo-polysiloxanes and azo-polysiloxanes modified with adenine. The presence of the adenine into the polymeric structure aims to increase the 3D relief stability on one hand and to induce a different chemical signal toward the cells membrane, on the other hand. Stable or unstable relief surfaces were obtained as a function of the polymer chemical structure and the total substitution degree. The preliminary cell culture tests effectuated in the case of azo-polysiloxanes have shown good adhesion properties of the film surfaces. The geometric characteristics of the surface can induce specific cellular response, the result being an increase or decrease of the cell number on the structured surface, reported to the plane one.

*Key words:* azo-polysiloxane, adenine, cell culture, nano-structured surfaces

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