

THE ROLE OF WATER IN THE CHEMISTRY OF TITAN'S ATMOSPHERE

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Electrical discharges are manners for synthesis of macromolecules and polymers, specially by glow discharge at low temperature. We report in this work the behaviour of chemical species by actinometric optical emission spectroscopy, produced by DC glow discharge in $N_2/CH_4/H_2O$ misture that simulates the atmosphere of Titan.

It is the largest moon of Saturn and its atmophere could be fellow to that of the Earth several billion years ago.

In our laboratory we studied under low pressure the Titan's atmosphere corresponding at altitude from 180 to 220 km. In this region we analised the gas phase and the solid material obtained and we report an heteropolymer that was analised by Infrared and Mass Spectroscopy.

In the gas phase were observed chemical species such as CH, NH, CN and OH responsables for the formation of solid material with cyclics and ramified organic compounds, alcohols, carboxilic acids; aromatic structures, amines, ketones and more complex structures. Such products may condense and fall as raindrops to the surface and ocean enriching them with important compounds for a pre-biotic environment.