

## Manipulation of polymeric fibers obtained from IL

Mikk Antsov<sup>1</sup>, Triinu Taaber\*<sup>1</sup>, Sergei Vlassov<sup>1</sup>, Leonid Dorogin<sup>1</sup>, Uno Mäeorg<sup>2</sup>, Kristjan Saal<sup>1</sup>, Martin Järvekülg<sup>1</sup>, Rünno Lõhmus<sup>1</sup>

<sup>1</sup>Institute of Physics, University of Tartu, Estonia

<sup>2</sup>Institute of Chemistry, University of Tartu, Estonia

e-mail: mikk.antsov@ut.ee

In recent times the room temperature ionic liquids (RTIL) have been studied by many researchers [1,2] and have shown great potential in various applications [3,4] because of their great electrical, thermal and chemical properties. Polymerized IL's have shown a lot of interesting properties and applicability in many fields, such as polymeric electrolytes, microwave-absorbing, ionic conductive and porous materials etc.

In the present work polymerized fibers were studied by the cantilevered beam bending technique. [5] Fibers were directly drawn from the liquid by the electron beam irradiation method and were characterized immediately after formation. All mechanical measurement procedures were conducted inside the vacuum chamber of a scanning electron microscope (SEM) (Tescan VEGA II). The experimental setup consisted of a precise nanomanipulator (Smaract) with a sharp tip attached to it. The sharp tip was an atomic force microscope (AFM) cantilever tip (ATEC-CONT, Nanosensor) with tip radius of approx. 20nm. The formed fibers were attached to the sharp tip and were bent against an AFM cantilever with known stiffness. The elastic beam theory was used to calculate the mechanical properties of each individual fiber. The Young's moduli of the polymerized fibers were found to be in the same range as for commonly known polymers. The effect of the electron beam parameters on the formation of fibers was also discussed.

### References

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