

**Subarea POB3:** Organic and inorganic materials and carbon nanostructures for applications in electronics.

**Title of the presentation:** Fabrication and characterization of cellulose and silver nanowires based electroconductive composite paper.

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**Abstract:**

In recent times plastic foils or papers are in great demand to develop low cost, disposable, flexible and recyclable electronics. Paper exhibits great potential in fulfilling these demands either as substrate or active or an active component, however due to large surface roughness and porous structure hinders the use is limited. To overcome this problem researchers have used multiple coated paper to achieve highly smooth surface and exploring the potential use of paper as substrate for thermochromic and electrochromic displays, nonvolatile resistive memory devices, floating gate memory transistors, transistors, disposable radio frequency identification (RFID) tags, batteries, photovoltaic cells, sensing, diagnostic and pharmaceutical applications.

In our research we have developed electroconductive composite paper based on silver nanowires (AgNWs) and cellulose fabricated by vacuum filtration process. Cellulose is most abundant natural and renewable biopolymer source on Earth which acts as stabilizing and film forming matrix holding conductive material which is (AgNWs) in our case. Starting materials such as cellulose water suspension and (AgNWs) were fabricated in our lab. Scanning electron microscopy, ohm meter were used for the investigation of developed composite paper.