

2. The concentration of iodine in the spinning solution has an influence on the structure of electrospun non-woven material. Porous films with a lot of spots and stick nanofibres were electrospun from PVA solutions with a high concentration of iodine (B3,C2 and C3).
3. A mat with more thicker nanofibres was electrospun from PVA solution with iodine. The addition of iodine in the PVA solution has only a marginal influence on the electrospun nanofibre diameter.
4. In order to electrospun a PVA mat with a higher amount of iodine and fewer defects (spots, stick nanofibres), iodine should be dissolved in a higher amount of ethanol.



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# INSTITUTE OF BIOPOLYMERS AND CHEMICAL FIBRES

## LABORATORY OF ENVIRONMENTAL PROTECTION

The Laboratory works and specialises in three fundamental fields:

- **R&D activities:**
  - research works on new technology and techniques, particularly environmental protection;
  - evaluation and improvement of technology used in domestic mills;
  - development of new research and analytical methods;
- **research services** (measurements and analytical tests) in the field of environmental protection, especially monitoring the emission of pollutants;
- **seminar and training activity** concerning methods of instrumental analysis, especially the analysis of water and wastewater, chemicals used in paper production, and environmental protection in the paper-making industry.

Since 2004 Laboratory has had the accreditation of the Polish Centre for Accreditation No. AB 551, confirming that the Laboratory meets the requirements of Standard PN-EN ISO/IEC 17025:2005.



AB 388

Investigations in the field of environmental protection technology:

- Research and development of waste water treatment technology, the treatment technology and abatement of gaseous emissions, and the utilisation and reuse of solid waste,
- Monitoring the technological progress of environmentally friendly technology in paper-making and the best available techniques (BAT),
- Working out and adapting analytical methods for testing the content of pollutants and trace concentrations of toxic compounds in waste water, gaseous emissions, solid waste and products of the paper-making industry,
- Monitoring ecological legislation at a domestic and world level, particularly in the European Union.

A list of the analyses most frequently carried out:

- Global water & waste water pollution factors: COD, BOD, TOC, suspended solid (TSS), tot-N, tot-P
- Halogenoorganic compounds (AOX, TOX, TX, EOX, POX)
- Organic sulphur compounds (AOS, TS)
- Resin and chlororesin acids
- Saturated and unsaturated fatty acids
- Phenol and phenolic compounds (guaiacols, catechols, vanillin, veratrols)
- Tetrachlorophenol, Pentachlorophenol (PCP)
- Hexachlorocyclohexane (lindane)
- Aromatic and polyaromatic hydrocarbons
- Benzene, Hexachlorobenzene
- Phthalates
- Carbohydrates
- Glycols
- Polychloro-Biphenyls (PCB)
- Glyoxal
- Tin organic compounds

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