





## Summary

# Lab-on-Paper technology



	<p><b>Target age</b></p> <p>Age 5 – 18 years old students</p> <p><b>Level of difficulty</b></p> <p><input checked="" type="checkbox"/> Easy    <input type="checkbox"/> Medium    <input type="checkbox"/> High</p>	
	<p><b>Key words:</b></p> <p><i>Versatility of paper; Hydrophilic/hydrophobic materials; Microfluidics</i></p>	
	<p><b>Abstract of the activity:</b></p> <p>In this toolkit there are three envelopes with three different activities to explore the Lab-on-Paper technology. These activities aim to help the students explore the properties and wide variety of applications of paper and learn about hydrophobic and hydrophilic materials.</p> <p>This toolkit is very comprehensive, and the activities can be carried out by participants from 5 to 18 years old. The deepening of the concepts inherent to the experiment must be done according to the age of the participants.</p>	

## Summary

### Learning Goals



- Critical raw materials and their substitution by renewable materials;
- Economic advantages of the development of microfluidics devices on paper;
- Definition of hydrophilic and hydrophobic materials;
- Microfluidics.

### Specific Abilities - *At the end of the activity the student will be able to:*



- Understand the difference between a hydrophilic and a hydrophobic material;
- Comprehend the versatility of paper uses and its advantages;
- Describe the principal steps of wax printing method;
- Identify the advantages of using microfluidics devices on paper.

### Cross-curricula Links- *Examples:*



- Ecology/Environment
- Physics
- Technology
- Social Sciences: human conditions, ethics
- Economics/Economy

### Prerequisites - *Knowledge and skills necessary for carrying out the activity*



- This toolkit has no prerequisites.

### Time requirement



1 h       10 min

**Instruments:** No additional instruments are needed

## Summary



### Learning and Teaching Support Materials - What you can find in the toolkit

1. Lab Procedures
2. Students' Cards
3. PowerPoint presentation for preparing a lesson (plus a short text)
4. Three envelopes with three different activities
5. Plastic pipettes
6. Aqueous food dye solutions
7. Paper holders

RM  
Ambassadors

### Authors

Ana Carolina Marques, FCT NOVA, [accm@campus.fct.unl.pt](mailto:accm@campus.fct.unl.pt)

João Pedro Veiga, FCT NOVA, [jpv@fct.unl.pt](mailto:jpv@fct.unl.pt)