

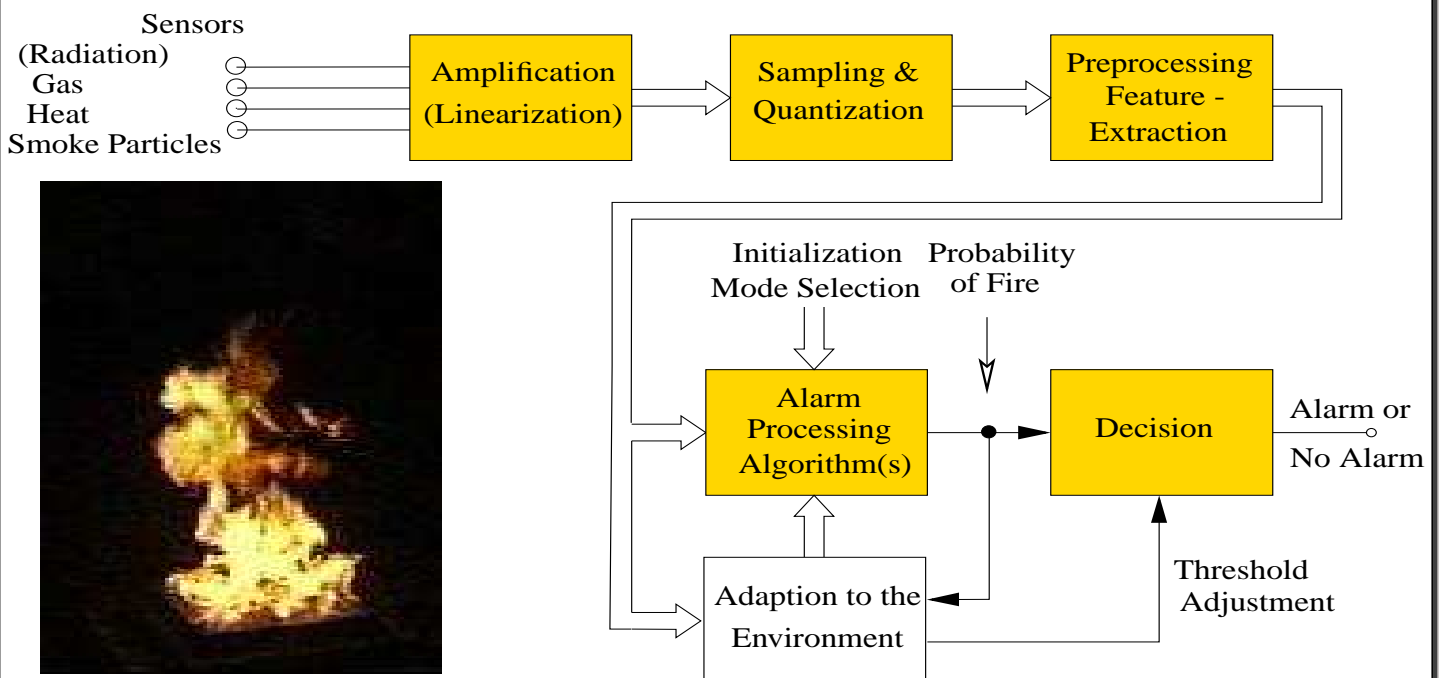
State of the art

- Most frequently used sensors: Optical smoke sensor and temperature sensor.
- Fire detectors show good detection capabilities.
- But false or unwanted alarms are an increasing problem. Only one out of 10 to 20 alarms are due to genuine fires.

Requirements for standard fire detectors

- Standard fire detectors should be cheap
- with very low power consumption,
- with reliable detection capabilities,
- with low false alarm rate, and
- with extremely long life time without maintenance.

Block circuit diagram of a fire detection algorithm



Pending problems

- Test laboratories do not check the false alarm behaviour of fire detectors.
- Fire detection systems are operating in fixed detection modes adjusted to match the installation environment. This may cause problems in varying environments.
- Inclusion of new sensors for other fire phenomena (like gas sensors) with the aim to reduce false alarms.

Work in progress

- Development of test procedures with the aim to test the false alarm behaviour by means of computer simulations.
- Development of fire detection algorithms adapting the detection behaviour to varying environments.
- Investigation of the suitability of gas sensors and development of reliable multisensor detection algorithms.