Emerging Methods for Early Detection of Forest Fires

**Problem statement:**

* In earlier times fires were detected with the help of watching towers or using satellite images.
* Satellites collect images and send it to the monitoring authority which will decide by seeing images that it is a fire or not.
* But this approach was very slow as the fire may have spread in the large areas and caused so much damage before the rescue team came.
* In the watching tower method, there was a man always standing on the tower who would monitor the area and inform if there was fire.
* This method was also slow because before the man got to know about the fire it may have spread in the inner parts of forest, also it always requires a man who must be present there.
* Since, we know that some areas, especially forest areas are large so it is practically impossible to put a man in every part of forest from where they can monitor the forest area.
* So, both these approaches of watching towers and satellite images failed to detect fire as early as possible to reduce the damage done by fire Problems in fire detection:
* There were mainly two problems in fire detection as discussed:
* (a). Judging criteria for the fire: Edge is set, on the off chance that the worth is more noteworthy than edge, it is a fire, else not.
* So, this problem was removed by using machine learning techniques by many researchers.
* (b). Connection of nodes: Traditional systems used cables to connect alarm with the detectors.
* Cable was mainly of copper. But copper wire may be costly or it can suffer from fault in the mid-way.
* So, this problem was removed using wireless sensor networks.
* So, with the advancement in technology researchers find an efficient method to detect forest fire with the help of Wireless Sensor Network.
* Fire can be identified by conveying sensor hubs in timberland regions by which they illuminate about fire.
* Conveying sensor hubs in the timberland regions means placing sensors in every part of the forest and mostly in the prone areas where risk of 9 catching fire is more. With the use of wireless sensor networks, now it is easy to detect the fire in large areas as soon as possible.