SOLAR CHIMNEY

REQUIREMENTS:

INTRODUCTION

Nowadays the kitchens are made modern and to reduce smoke inside the kitchen chimneys are used. The existing chimneys are used AC source which is more costly than DC. In this the solar panel is used as source. The normal exhaust fan runs manually without any rest and regulated with speed control system. In this proposed system the automation is used. The automatic ON/OFF control process of exhaust fan is made by microcontroller and smoke sensor. The smoke sensor detects the smoke more accurately and send required data to the exhaust module and fan gets operate. Then the smoke will exhaust to the outlet.

COST AND FEATURES

The chimney uses the solar energy as a power source. The sensor senses the smoke from the inlet and the signal will be send to the micro controller then the exhaust gets started which can absorb the smoke from the kitchen and then it is send to the carbon filter and then the smoke will exhausted into the atmosphere. The entire system works on DC source. From solar panels we get sufficient DC supply and it can be done at low cost

SWOT ANALYSIS

S-STRENGTH

- It operates in DC source
- Reduces the cost

W-WEAKNESS

- Requires more space for the solar panel
- Needs solar energy

O-OPPORTUNITIES

- Temperature measurements can be available in the future.

T-THREATS

- Requires more space inside the kitchen

4W's and 1'H

Who:

This can be used for all the cooks and the chefs who are cooking inside the room.

What:

Reduces the smoke by automatic sensing.

When:

This can be used while cooking the foods.

Where:

This can be used in all the homes, hotels and restaurants.

How:

It reduces the overall smoke and enhance the environment.

DETAIL REQUIREMENTS

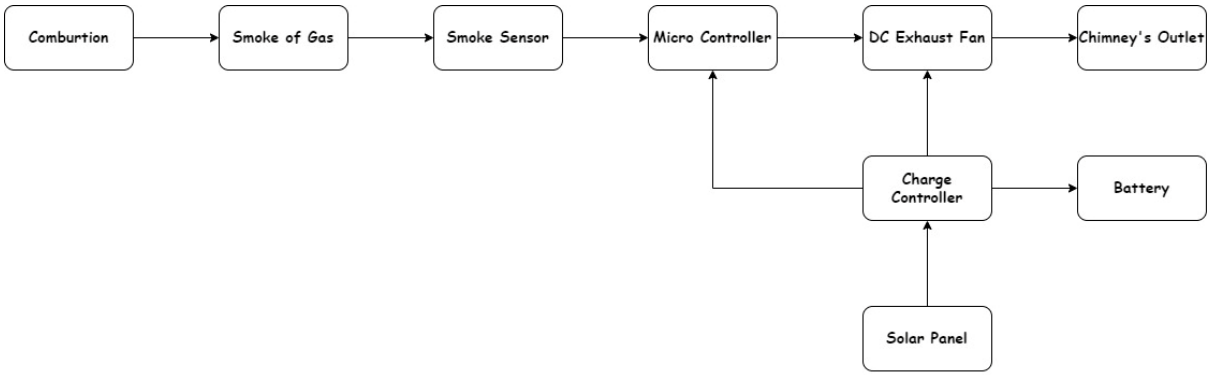
HIGH LEVEL REQUIREMENTS:

ID	Description	Status
HLR1	Smoke sensor	Implemented
HLR2	Carbon filter	Implemented
HLR3	Solar panel (20W/ 12V)	Implemented

LOW LEVEL REQUIREMENTS:

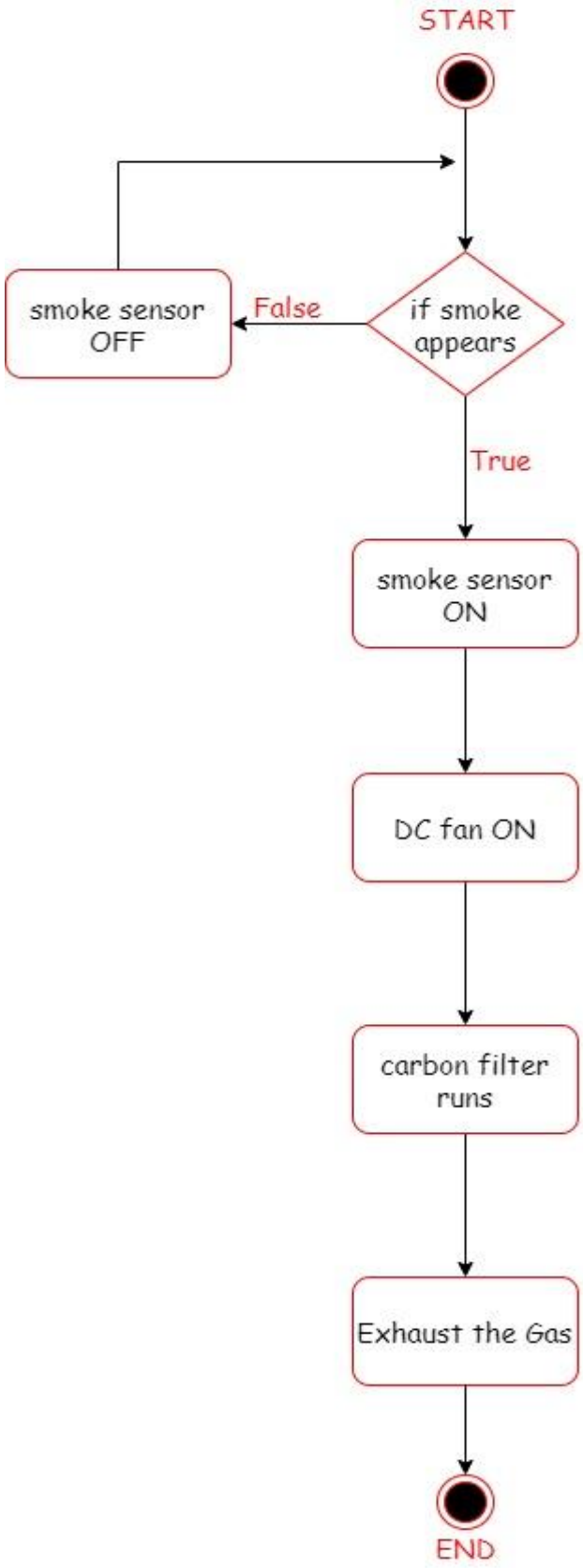
ID	Description	Status
LLR1	Micro controller	Implemented
LLR2	Battery (7.5 AH/ 12V)	Implemented
LLR3	Relay switch	Implemented
LLR4	DC fan	Implemented

BLOCK DIAGRAM:



BLOCK DIAGRAM OF SOLAR KITCHEN CHIMNEY

FLOW DIAGRAM



FLOW DIAGRAM OF CHIMNEY

MODEL SKETCH