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(71)Name of Applicant :

1)Dr. SYED JAHANGIR BADASHAH

Address of Applicant :PROFESSOR IN ECE, SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY, (AUTONOMOUS) YAMNAMPET, GHATKESAR, HYDERABAD, TELAGANA, INDIA 501301.

2)Dr. P. VIKRAM

3)Dr. S P V SUBBA RAO

4)C SRI GOURI

5)E SHASHI BHANU

6)WASEEM AKRAM

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1) Dr. SYED JAHANGIR BADASHAH

Address of Applicant :PROFESSOR IN ECE, SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY, (AUTONOMOUS) YAMNAMPET, GHATKESAR, HYDERABAD, TELAGANA, INDIA 501301.

2)Dr. P. VIKRAM

Address of Applicant :ASSISTANT PROFESSOR IN ECE, SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY, (AUTONOMOUS) YAMNAMPET, GHATKESAR, HYDERABAD, TELAGANA, INDIA 501301.

3)Dr. S P V SUBBA RAO

Address of Applicant :PROFESSOR IN ECE, SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY, (AUTONOMOUS) YAMNAMPET, GHATKESAR, HYDERABAD, TELAGANA, INDIA 501301.

4)C SRI GOURI

Address of Applicant :III YEAR ECE STUDENT OF SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY, (AUTONOMOUS) YAMNAMPET, GHATKESAR, HYDERABAD, TELAGANA, INDIA 501301.

5)E SHASHI BHANU

Address of Applicant :III YEAR ECE STUDENT OF SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY, (AUTONOMOUS) YAMNAMPET, GHATKESAR, HYDERABAD, TELAGANA, INDIA 501301.

6)WASEEM AKRAM

Address of Applicant :III YEAR ECE STUDENT OF SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY, (AUTONOMOUS) YAMNAMPET, GHATKESAR, HYDERABAD, TELAGANA, INDIA 501301.

(57) Abstract :

Most inland water bodies which are sources of freshwater for people and animals alike are filled with certain aquatic plants which in some cases consume the major portion of the water and also affect the marine fauna. These plants overgrow covering all areas of the lake and are generally destructive to biodiversity. Most inland water bodies are the major source of local freshwater supply. Keeping these water sources perennial is vital for the communities that depend on them. Manual clearing of vast areas of lake infested with such fast growing plants is both dangerous and time consuming. Application of robotics to this problem can prove effective. The robot presented here travels on underwater terrain with wheels. Differential drive mechanism is employed. This robot employs a hydraulic slotted link mechanism for clamping the plants and a vertical chain sprocket based conveyor mechanism for uprooting. The proposed robot consists of DC motor based differential drive mechanism for mobility. The robot has a chain sprocket based vertical conveyor mechanism that will uproot the clamped stem of the underwater plant. The robot moves from the ground into the water body. The robot submerges as the depth increases slowly. There is a threshold water level depth below which the robot does not go. If the water level depth is more than the fixed threshold height then the robot is not operated at those regions.

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