**Pipeline Inspection Robot**

Author

* **Abstract**: This paper presents the design and development of an in-pipe inspection robot (IPIR) version 2, which is composed of two driving leg systems, two supporting leg systems, and a connecting body. The novelty of version 2 is its stability and diameter adaptability, which are enhanced by adding two supporting leg systems in version 1 and optimizing its spring design. All major components of version 2 are designed safely, and the robot is suitable for offline visual checking of various pipe components like horizontal pipes, vertical pipes, and couplings in water pipelines, gas pipelines, and drain pipes.

 2. An Underwater Pipeline Inspection Robot Based on Raspberry Pi[2]

- Title: An Underwater Pipeline Inspection Robot Based on Raspberry Pi

- Authors: N/A

- Publication Date: 2022-07-18

- Abstract: This paper designs an underwater pipeline inspection robot to realize the autonomous inspection, cleaning, and maintenance of underwater pipelines. The robot is based on the Raspberry Pi platform and is equipped with sensors and cameras to capture images and data.

 3. Development of a Pipeline Inspection Robot for the Standard Oil Pipeline of China National Petroleum Corporation[3]

- Title: Development of a Pipeline Inspection Robot for the Standard Oil Pipeline of China National Petroleum Corporation.

- Authors: N/A

- Publication Date: N/A

- Abstract: This paper presents a novel design of a mobile robot for oil pipeline inspection, which is cooperated with the China National Petroleum Corporation (CNPC). The robot is designed to address challenges such as irregular rotation and excessive force exertion, which can lead to overheating and damage to the robot. The paper also discusses improvements in mechanical design, control system, inspection system, and field testing results.

 4. Design and Development of a Pipeline Inspection Robot for Visual Inspection and Fault Detection[10]

- Title: Design and Development of a Pipeline Inspection Robot for Visual Inspection and Fault Detection.

- Authors: Raul Guenther Robotic Lab

- Publication Date: 2022-03-08

- Abstract: This paper describes the development of a pipeline inspection robot for visual inspection and fault detection. The robot is designed to operate in low and medium voltage environments and is part of a project aimed at developing a self-balancing robot for pipeline inspection.

5. Pipe Inspection Robots: A Review[5]

- Title: Pipe Inspection Robots: A Review

- Authors: N/A

- Publication Date: N/A

- Abstract: This paper reviews the different types of pipeline robots based on various characteristics such as accuracy in inspection, size, and adaptability to shape. It covers out-pipe inspection robots and in-pipe inspection robots, as well as their design issues and strategies.

 6. Autonomous Self-driven In-line Robot for Versatile Pipeline Inspection[6]

- Title: Autonomous Self-driven In-line Robot for Versatile Pipeline Inspection.

-Authors: N/A

- Publication Date: N/A

- Abstract: This paper presents the design and development of a conceptual prototype of an autonomous self-driven inline inspection robot, called Smart-Spider, for versatile pipeline inspection.

 7. Design of a New In-Pipe Inspection Robot[7]

- Title: Design of a New In-Pipe Inspection Robot

- Authors: N/A

- Publication Date: N/A

- Abstract: This paper investigates design issues pertaining to the development of in-pipe inspection robotics and proposes a new design for a robot that can inspect pipes.

 8. The Application of Fully Unmanned Robotic Systems for Inspection of Pipelines[8]

- Title: The Application of Fully Unmanned Robotic Systems for Inspection of Pipelines

- Authors: N/A

- Publication Date:2021-09-01

- Abstract: This paper focuses on recent innovations in the methods used for external remote subsea pipeline inspection and reveals an unmanned method for inspecting pipelines.

9. A Review on Pipeline Inspection Robot[9]

- Title: A Review on Pipeline Inspection Robot

- Authors: N/A

- Publication Date: N/A

- Abstract: This paper aims to review the different types of pipeline robots based on various characteristics such

 **-citations:-**

[1] Design and Development of In-pipe Inspection Robot for Various Pipe ... <https://iopscience.iop.org/article/10.1088/1757-899X/1012/1/012001>

[2] An Underwater Pipeline Inspection Robot Based on Raspberry Pi <https://dl.acm.org/doi/abs/10.1145/3544109.3544200>

[3] Development of a Pipeline Inspection Robot for the Standard Oil ... - MDPI <https://www.mdpi.com/2076-3417/10/8/2853>

[4] Design and Development of Pipe Inspection Robot ResearchGate <https://www.researchgate.net/publication/305985593_Design_and_Development_of_Pipe_Inspection_Robot>

[5] (PDF) Pipe inspection robots: a review - ResearchGate <https://www.researchgate.net/publication/366654589_Pipe_inspection_robots_a_review>

[6] Autonomous Self-driven In-line Robot for Versatile Pipeline Inspection <https://www.sciencedirect.com/science/article/pii/S2405896318307158>

[7] Design of a New In-Pipe Inspection Robot - Science Direct <https://www.sciencedirect.com/science/article/pii/S1877705814035218>

[8] The application of fully unmanned robotic systems for inspection of ...

<https://www.sciencedirect.com/science/article/pii/S0029801821006442>

[9] (PDF) A Review on Pipeline Inspection Robot - ResearchGate

<https://www.researchgate.net/publication/346718233_A_Review_on_Pipeline_Inspection_Robot>

[10] (PDF) Design and Development of a Pipeline Inspection Robot for Visual ... <https://www.researchgate.net/publication/352286916_Design_and_Development_of_a_Pipeline_Inspection_Robot_for_Visual_Inspection_and_Fault_Detection>

[11] (PDF) An underwater robot for pipe inspection - ResearchGate <https://www.researchgate.net/publication/3714407_An_underwater_robot_for_pipe_inspection>

[12] Pipe inspection robots: a review - IOPscience <https://iopscience.iop.org/article/10.1088/1757-899X/1272/1/012016/pdf>

[13] Design and Development of Pipeline Inspection Robot for Crack and ... <https://ieeexplore.ieee.org/document/8704127>

[14] underwater inspection robot: Topics by Science.gov <https://www.science.gov/topicpages/u/underwater%2Binspection%2Brobot>

[15] Design and Development of Pipeline Inspection ... - Semantic Scholar <https://www.semanticscholar.org/paper/Design-and-Development-of-Pipeline-Inspection-Robot-Mohammed-Nadarajah/f4939e7c5d8e1d373602a4d1607971e327d9968c>

[16] Inspection Robot for Submarine Pipeline Based on Machine Vision <https://iopscience.iop.org/article/10.1088/1742-6596/1952/2/022034/pdf>

[17] An In-Pipe Inspection Robot with Permanent Magnets and ... - MDPI <https://www.mdpi.com/2076-3417/12/3/1226>

[18] Autonomous Robot for Subsea Oil and Gas Pipeline Inspection Being ... <https://uh.edu/news-events/stories/2023/august-2023/08312023-pipeline-robot.php>

[19] Design and Development of Pipe-inspection robot with vision 360° <https://iopscience.iop.org/article/10.1088/1742-6596/2062/1/012015/pdf>

[20] Multi-robot system for inspection of underwater pipelines in shallow ... <https://experts.illinois.edu/en/publications/multi-robot-system-for-inspection-of-underwater-pipelines-in-shal>