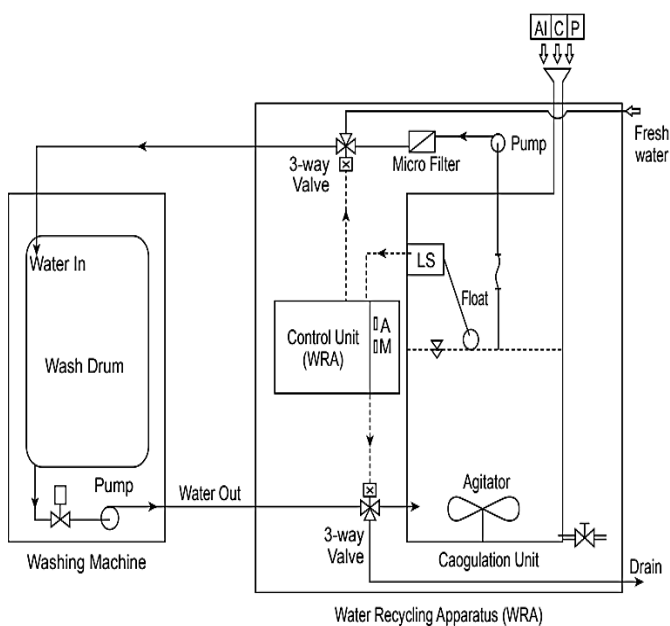




### Technology Images

**Fig.2: Illustrates components of an apparatus for washing machine rinse water treatment**



**FIG. 2**

### Experimental Results- Table 1

#### Characteristics of Treated water (washed water)

Parameters	Turbidity (NTU)	FC (CFU/100mL)
Rinse 1	21.4	4
Rinse 2	4.29	Nil
Rinse 3	2.35	Nil
Standard Limit for reuse	<5	Nil

Various treatment trails can be used for treating the wash water to **achieve the water quality required for reusing the water**. (Experimental result shown in Table)

### Key Features / Value Proposition

#### ❖ Technical Perspective

1. Proposed system includes the control system which is characterized by causing the **treatment module to inject** requisite one of the **flocculating agent, the coagulating agent and disinfecting agent** into the storage tank in a **predetermined sequence and quantities** determined based on a turbidity or fecal contamination level of the water based on the input received from the **water quality sensor**, to produce **treated water**. (Refer Process flowchart shown in **Fig. 3**)
2. The chemical treatment method includes **coagulation, flocculation, disinfection followed by micro filtration**, which makes the apparatus a fully **automated control system**.

#### ❖ Industrial Perspective

1. **Cost-effective & user-friendly** apparatus; & applicable to any **brand** washing machines.

#### ❖ User Perspective

1. Efficiently **reuse** of the **treated wash/rinse water** from washing machine.
2. **Reduces demand for fresh/soft water and avoids the use of hard water**.

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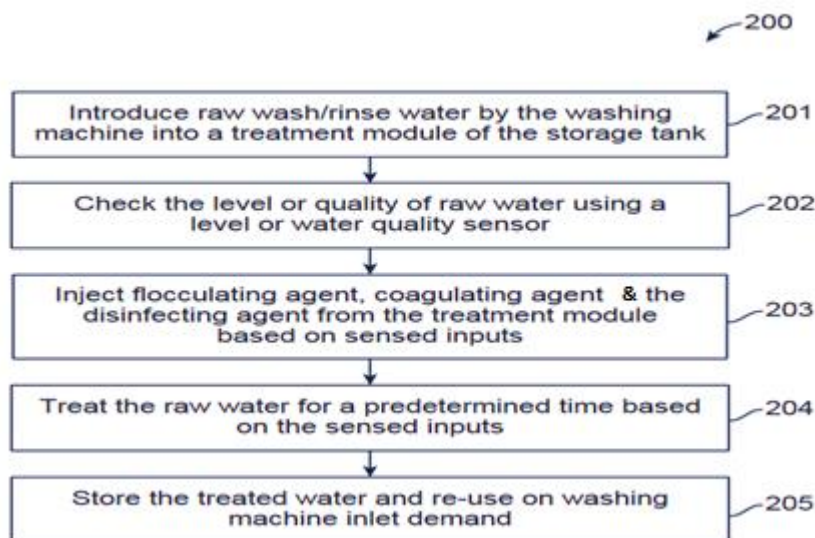
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### Functional Flowchart

**Fig.3: Illustrates Functional Process flowchart of Proposed System**



**FIG. 3**

### Typical Application of Technology

- Storage tank for treated water is at the base of the machine.
- Treated water, to the extent available in storage tank, is used for the wash cycle. Fresh water is used to top up as needed.
- Wash water is discharged in the drain.
- **Treated water**, to the extent available in storage tank, is used for **first rinse cycle**.
- Rinse water is discharged into (mostly empty) storage tank and treated in situ.
- Fresh water is let in for **Second (final) Rinse cycle**.
- **Rinse 2 water** is discharged into storage tank and treated.
- Occasionally, **storage tank** can be flushed out to drain to **remove the coagulated matter**.

### Benefits

- We need only **33% fresh water** with the remaining being treated water.
- Where soft water supply is limited and ground water is hard, limited requirement of soft water can improve wash quality.
- A **60L tank** at the base of the machine should be sufficient. Many users use a stand to raise the machine. Instead the storage tank can serve this purpose as well.
- The **water saver mode and storage tank** can be designed as an optional feature.

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