

Home (<http://ipindia.nic.in/index.htm>) About Us (<http://ipindia.nic.in/about-us.htm>) Who's Who (<http://ipindia.nic.in/whos-who-page.htm>)  
 Policy & Programs (<http://ipindia.nic.in/policy-pages.htm>) Achievements (<http://ipindia.nic.in/achievements-page.htm>)  
 RTI (<http://ipindia.nic.in/right-to-information.htm>) Feedback (<https://ipindiaonline.gov.in/feedback>) Sitemap (<http://ipindia.nic.in/itemap.htm>)  
 Contact Us (<http://ipindia.nic.in/contact-us.htm>) Help Line (<http://ipindia.nic.in/helpline-page.htm>)

[Skip to Main Content](#)

[\(<http://ipindia.nic.in/index.htm>\)](http://ipindia.nic.in/index.htm)

[\(<http://ipindia.nic.in/inc>\)](http://ipindia.nic.in/inc)

## Patent Search

Invention Title	BLOOD PURIFICATION SYSTEM USING MICROCONTROLLER BASED DOMICILE DIALYZER FOR KIDNEY IMPAIRMENTS
Publication Number	34/2024
Publication Date	23/08/2024
Publication Type	INA
Application Number	202441062464
Application Filing Date	19/08/2024
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	BIO-MEDICAL ENGINEERING
Classification (IPC)	A61M1/14, A61M1/16, A61M1/36, G16H20/40, B01D61/24

### Inventor

Name	Address	Country	Nati
Elakia Manoharan	Assistant professor, PG & Research Department of physics, Marudhar Kesari Jain college for women, Vaniyambadi Tamil Nadu	India	Indi.
R.Soundharya	Managing Director, RV Biomed Service and solutions, Chennai	India	Indi.
KEERTHANA S	Assistant Professor, Dept of EEE, Sri Muthukumaran Institute Of Technology, Chikkarayapuram (Near Mangadu), Chennai	India	Indi.
RAMU V	Assistant Professor, Dept. of CSE(AI&ML),Kakatiya Institute of Technology and Science (KITS) Warangal Hanamkonda, Telangana	India	Indi.
Dr.J.Sampathkumar	Asst. Professor, Electronics and Communication Engineering, Mahendra College of Engineering, Salem, Tamil Nadu	India	Indi.
Dr. J. Rajalakshmi	Associate Professor, Biomedical Engineering, Velalar College of Engineering and Technology, Thindal, Erode	India	Indi.
Murali Yachamaneni	Assistant Professor, Electronics and Communication Engineering, Institute of Aeronautical Engineering , Hyderabad, Telangana,	India	Indi.
S.Yogeswari	Assistant professor, Mechanical department, Pandian Saraswati Yadav Engineering College, Sivagangai, Tamil Nadu	India	Indi.
M.Suganya Devi	Assistant Professor, Electronics and Communication Engineering, PPG Institute of Technology, Coimbatore	India	Indi.
E. VIJAYALAKSHMI	Lecture, Textile Technology, Thiagarajar Polytechnic College, Salem	India	Indi.
K.Kaaviyakanth	Assistant Professor, Department of Biomedical Engineering, PPG Institute of Technology, Coimbatore	India	Indi.

### Applicant

Name	Address	Country	Nat
KAAVIYAKANTH KAMARAJ	Department of BME, PPG Institute of Technology, Saravanampatti.	India	Indi
Elakia Manoharan	Assistant professor, PG & Research Department of physics, Marudhar Kesari Jain college for women, Vaniyambadi Tamil Nadu	India	Indi
R.Soundharya	Managing Director, RV Biomed Service and solutions, Chennai	India	Indi
KEERTHANA S	Assistant Professor, Dept of EEE, Sri Muthukumaran Institute Of Technology, Chikkarayapuram (Near Mangadu), Chennai	India	Indi
RAMU V	Assistant Professor, Dept. of CSE(AI&ML),Kakatiya Institute of Technology and Science (KITS) Warangal Hanamkonda, Telangana	India	Indi
Dr.J.Sampathkumar	Asst. Professor, Electronics and Communication Engineering, Mahendra College of Engineering, Salem, Tamil Nadu	India	Indi
Dr. J. Rajalakshmi	Associate Professor, Biomedical Engineering, Velalar College of Engineering and Technology, Thindal, Erode	India	Indi
Murali Yachamaneni	Assistant Professor, Electronics and Communication Engineering, Institute of Aeronautical Engineering , Hyderabad, Telangana,	India	Indi
S.Yogeswari	Assistant professor, Mechanical department, Pandian Saraswati Yadav Engineering College, Sivagangai	India	Indi
M.Suganya Devi	Assistant Professor, Electronics and Communication Engineering, PPG Institute of Technology, Coimbatore	India	Indi
E. VIJAYALAKSHMI	Lecture, Textile Technology, Thiagarajar Polytechnic College, Salem	India	Indi

**Abstract:**

Patients with kidney failure receives either surgery or dialysis from machines so that their kidneys can function normally. The dialysis membrane used, clears the blood of products such as urea, phosphorus and creatinine. The device also helps in removal of excess salt and water from blood. In existing hemodialysis machines about 120 litre dialysate is needed for blood cleansing. This makes the entire dialysis unit bulky and demands a constant supervision from the experts. Portable hemodialysis allows a ha portable system. The main focus of Portable dialysis unit is to reduce the size of the pump so that it can be worn. Ultrafiltration is a promising alternative for blood purification by use of microfilter material and catalytic processes. The unit can be used to provide constant dialysis throughout the day or at least for the whole night so that the patient himself be able to follow the dialysis at home. The unit concentrates on reduction in pressure of the pump. Also there should be provision of an excess storage with a capacity 200-250 ml to filter out toxic waste from body. The study aims to achieve handy home hemodialysis device to ensure an increase in mobility and employability which will reduce less nursing and reduced healthcare costs.

**Complete Specification**

Description:2.PREAMBLE :

Existing system:

In existing system in hemodialysis machine required four hours of Hemodiafiltration process an extra 30l of replacement fluid is infused directly to the patient.HDF is at least 1.5 times more expensive (ultrapure water in larger quantity) is required. In our Dialysis unit, we have a total of HD machines required (for negative patients, hepatitis C patients, and 1 machine for hepatitis B or HIV) and HDF machines.

Proposal system:

Portable hemodialysis is a modality of renal replacement therapy that can be safely and independently performed at home by end stage renal diseases (ESRD) Patients. Home portable dialysis can be performed at the convenience of the patients on a daily basis, every other day and overnight. It provides significant improvements in health outcomes and resources utilization, the adoption of home, or any other places. Effective low cost, and user-friendly for patients without the stress or lack of self-confidence. It is portable and easily handled by patients. These prototype is mainly designed for poor people in rural places.

Pros of hemodialysis:

It's easier to fit into your daily or weekly schedule. There are fewer restrictions on what you can eat and drink, especially for those doing daily or nocturnal treatment. You are in control of your own treatment and have more independence. Your health over time is likely to be better. Many patients say they feel better and have more energy.

- Three basic types of hemodialysis can be performed at home:

Conventional—three times a week for three to four hours or longer each time Short daily— five to seven times a week for about two hours each time Nocturnal—three times a week for three to four hours or longer each time

[View Application Status](#)



राष्ट्रीय मतदाता सेवा पोर्टल  
NATIONAL VOTERS' SERVICES PORTAL

Terms & conditions (<http://ipindia.gov.in/terms-conditions.htm>) Privacy Policy (<http://ipindia.gov.in/privacy-policy.htm>)

Copyright (<http://ipindia.gov.in/copyright.htm>) Hyperlinking Policy (<http://ipindia.gov.in/hyperlinking-policy.htm>)

Accessibility (<http://ipindia.gov.in/accessibility.htm>) Archive (<http://ipindia.gov.in/archive.htm>) Contact Us (<http://ipindia.gov.in/contact-us.htm>)

Help (<http://ipindia.gov.in/help.htm>)

Content Owned, updated and maintained by Intellectual Property India, All Rights Reserved.

Page last updated on: 26/06/2019