

PORTABLE DRINKING WATER PURIFICATION DEVICE FOR EMERGENCY USE

Patent
Portable Water Filtration Device :
PI 2018703912



- Dimension: W14 x H25 cm
- Material: PVC
- Finishing: Clear Coated
- Dry Weight : <300 g

Patent
Filter Paper:
PI2015704571

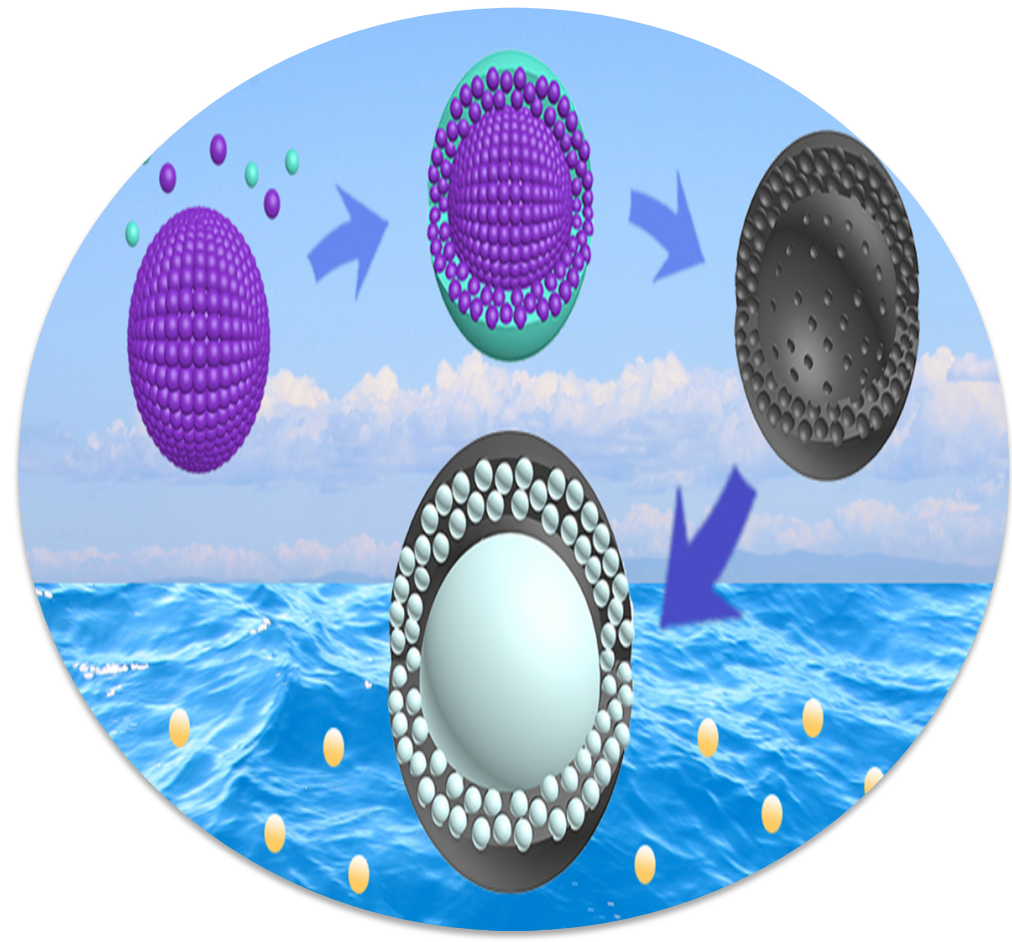


- **Chemical reduction method** using sodium borohydride
- Can be prepared by **2 hours**
- Particle size distribution of silver nanoparticles was between **5 and 31 nm**.

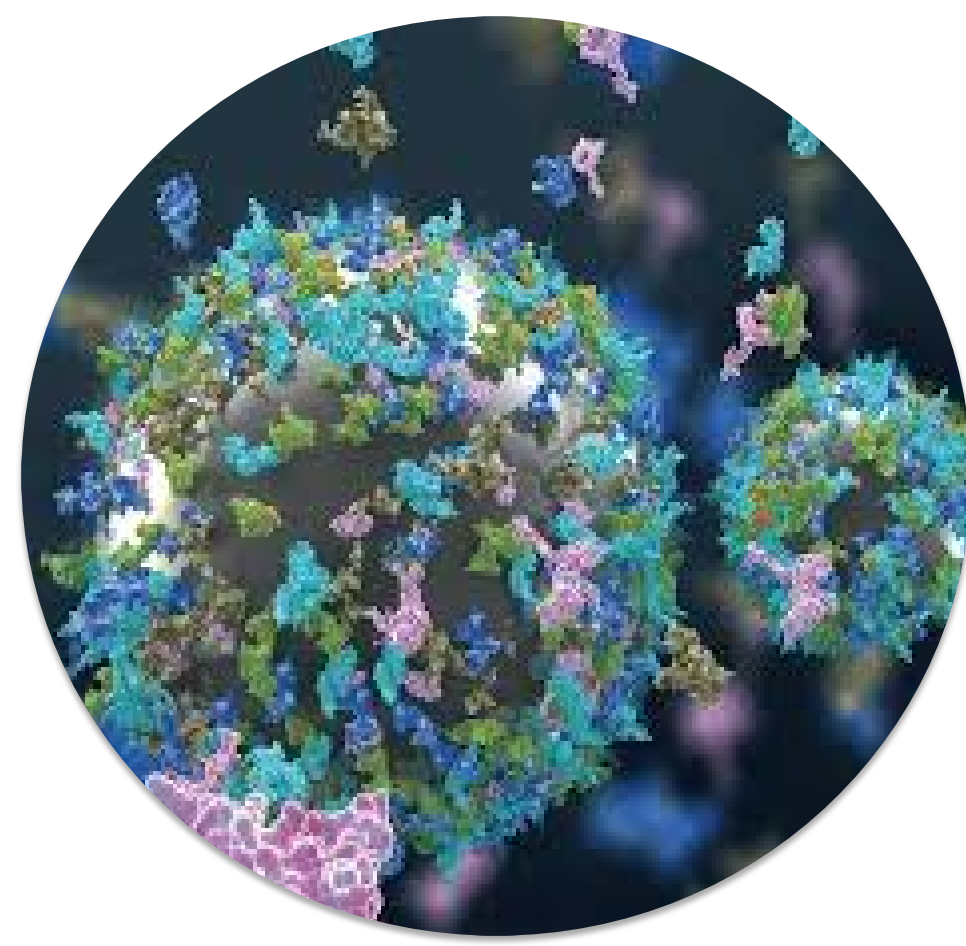
TABLE 1: PERFORMANCE OF EMERG NANO FILTER FOR SMALL SCALE USING FIELD SAMPLES

		pH	Temp (° C)	Turbidity (NTU)	E. Coli (cfu/100 mL)	Heavy metal (mg/L)	Human Health Risk
Low turbid	Tap water	6.5	24.3	4.4	NIL	All the heavy metals were in µg/L	Low
	Rainwater	6.3	24.0	5.2	NIL	All the heavy metals were in µg/L	Low
High turbid	River water	6.6	24.5	8.3	Present	All the heavy metals were In mg/L	High
Malaysia Drinking Water Quality Standard		6.5 - 9.0	-	5	0	mg/L	--
WHO Drinking Water Quality Standard		6.5 – 9.5	-	5	0	mg/L	-

INTRODUCTION OF TECHNOLOGY



Nanotechnology



Nanoparticle

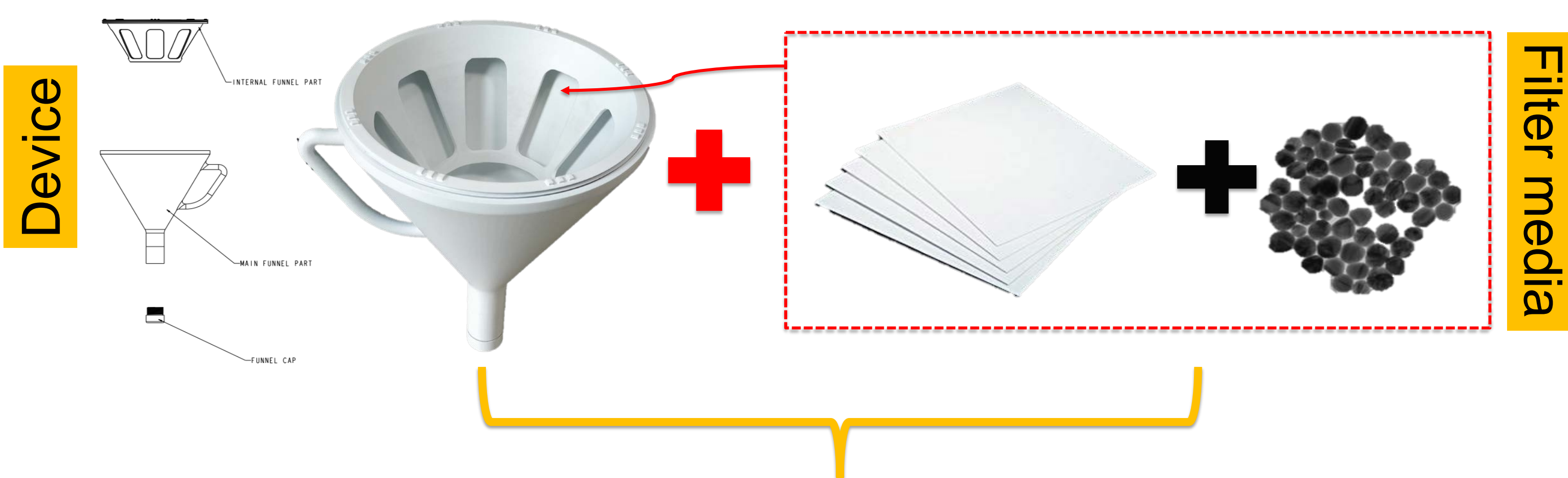


Material



Point-of-use water purification

INVENTION



- Less parts
- Easy arrangement
- Able to hold wet/dry filter material
- User friendly
- Flow of gravity filtration
- No additional energy needed

ADVANTAGE

- Suitable for any emergency use
- Low cost material
- No chemical addition
- Minimizes electricity usage
- Low energy input (no electricity/pump required)
- Non-toxic and easy to distribute
- Sustainable point-of-use water treatment

MARKET POTENTIAL

Suitable to be used by:

Industry

- Water industry company/ emergency water filter industries

Consumers:

- People in any emergency situation (disaster situation), relief centers
- People in remote places
- Non-Governmental Organization (Red Crescent Movement, MERCY)



Project Leader
Team members
Dept./Faculty
Email
Phone
Expertise: Environmental analysis, Health risk assessment

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