Claims:

1. A system for establishing a peer to peer (P2P) interconnection between vessels to provide an optimized and efficient route for a vessel (1), the system comprising:

a collection unit (40) through which water containing micro-plastics (30) adhered to air bubbles (20) flows;

a first set of sensors (60) operationally coupled to the collection unit (40) and configured to generate a first set of data by periodically measuring an amount of the micro-plastics (30) flowing in the collection unit (40);

a second set of sensors (70) operationally coupled to the vessel (1) and configured to generate a second set of data by monitoring local environmental conditions;

a communication device communicatively coupled to the vessel (1) and configured to communicate the first set of data and the second set of data between other vessels in an aquatic environment;

a processing unit (90) coupled to the first set of sensors (60), the second set of sensors (70) and the communication device, wherein the processing unit (90) is configured to receive and analyze the first set of data, the second set of data and a communicated data received from the other vessels to predict the optimum route for efficiently collecting maximum amount micro-plastics (30) from the aquatic environment.

2. The system as claimed in Claim 1, further comprising:

an air bubble generation unit (10) coupled to the vessel (1) and configured to generate air bubbles (20), wherein the micro-plastics (30) adhere to the air bubbles (20) generated by the air bubble generation unit (10);

a purifying unit coupled to the collection unit (40) and configured to separate the micro-plastics (30) from the air bubbles (20) for collecting separated micro-plastics (30).

3. The system as claimed in Claim 1, wherein the communicated data received from the other vessels comprises location of the other vessels, measured amount of the micro-plastics, environmental conditions and optimum route of the other vessels.

4. The system as claimed in Claim 3, wherein the environmental conditions comprise local tidal strength, local tidal currents, local tidal direction, sunlight intensity, water temperature, water salinity, local wind speed, local wind direction, barographic pressure, amount of rainfall.

5. The system as claimed in Claim 1, further comprising a display unit (100) operationally coupled to the processing unit (90) and configured to display the optimum route of the vessel (1), location of other vessels and their optimum routes.

6. The system as claimed in Claim 1, further comprising a testing unit coupled to the collection unit (40), wherein the testing unit is configured to collect a sample of the water flowing through the collection unit (40) for testing chemical composition, virus and microorganisms present in the water.

7. A method for establishing a digital interconnection between vessels to provide an optimized and efficient route for a vessel (1), the method comprising:

flowing water containing micro-plastics (30) adhered to air bubbles (20) through a collection unit (40);

generating a first set of data at a first set of sensors (60) operationally coupled with the collection unit (40);

generating a second set of data at a second set of sensors (70) operationally coupled with the vessel (1);

communicating the first set of data and the second set of data among other vessels in an aquatic environment;

receiving and analyzing at a processing unit (90), the first set of data, the second set of data, and a communicated data received from other vessels; and

predicting at the processing unit (90), the optimum route for collecting maximum micro-plastics (30) from the aquatic environment.

8. The method as claimed in Claim 7, wherein the first set of sensors (60) is configured to periodically measure amount of micro-plastics (30) flowing in the collection unit (40).

9. The method as claimed in Claim 7, wherein the second set of sensors (70) is configured to monitor local environmental conditions.

10. The method as claimed in Claim 7, further comprising:

transmitting an interrogation signal and ID of the vessel (1) from a communication device disposed on the vessel (1);

receiving the interrogation signal and ID of the vessel (1) by another vessel (2) in the aquatic environment;

authenticating the ID of the vessel (1) by comparing the ID with prestored IDs in a data storage memory disposed on the other vessel (2);

responding to the interrogation signal upon authentication by transmitting a confirmation ID of the other vessel (2);

authenticating the confirmation ID received from the other vessel (2) by comparing with stored IDs in a data storage memory (84) disposed in the vessel (1);

encrypting data of the first set of sensors, the second set of sensors, location of the vessel (1) and a timestamp done by a processing unit (90) of the vessel (1) and generating a key;

sending the key followed by the encrypted data to the other vessel (2);

decrypting the encrypted data by a processing unit disposed on the other vessel (2) by using the key;

encrypting data of a first set of sensors, a second set of sensors, location of the other vessel (2) and a timestamp done by the processing unit of the other vessel (2) and generating another key;

sending the another key followed by encrypted data to the vessel (1);

decrypting the encrypted data by the processing unit (90) disposed on the vessel (1) by using the another key.