



# NS-PHMS

PH Monitoring System  
Web Based Graphical User Interface

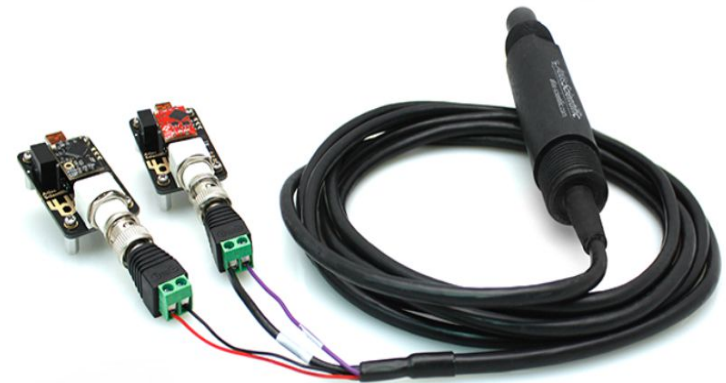
# Overview

- ▶ **NS-PHMS** is a wireless, flexible and scalable PH monitoring solution
- ▶ Using **NS-PHMS** you can monitor PH in the lab, soil, low ionic and ultra-pure water, high PH solutions, samples containing heavy metals, hydroponics/aquaponics, beef, wine and other liquor, food safe

# Overview

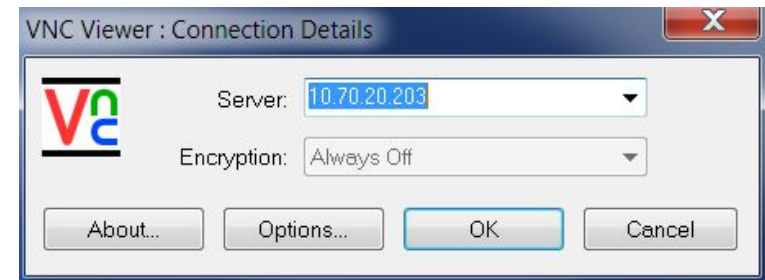
Using of the shelf components we lower your costs (acquisition and maintenance)

- ▶ System is using Raspberry Pi3 as single board computer
- ▶ PH sensors are:
  - High Precision Atlas Scientific sensors
  - Outstanding long-term stability
  - Factory Calibrated
- ▶ Sensors can be changed without replacing the whole unit (reuse the Raspberry Pi)



# Easy to setup

- ▶ Sensors are using your existing Wi-Fi network to send data to the server
- ▶ Sensors are configurable and take measurements at time intervals from 1/second to 1/day
- ▶ Sensors can be accessed and configured remotely via VNC



# Email and SMS Notifications

- ▶ Sends emails and/or SMS notifications when PH measurements are out of range
- ▶ Easy to configure the list of who needs to be notified
- ▶ Everything is done through the user friendly web based interface

PH MONITORING 2.0

PH Monitoring▼

DB Admin▼

custom

✕

🔍

⚙️

Nick Niculita

🏠 / DB Admin▼ / Email Notifications▼

Add new

Delete

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20 ▼

🖨️

	<u>Name</u>	<u>Email</u>
<div>🔍</div>	Nick Niculita	customdb@nicks-software.com

# Security

- ▶ Multiple user levels
- ▶ Easy to update and reconfigure
- ▶ Configure user rights for each screen and function

Login

Username:

nniculita

Password:

\*\*\*\*\*

☐ Remember me

Sign in

Login as Guest

Permissions

Save

Reset

Displaying all tables Ordering tables as in menu

Add group

Del group

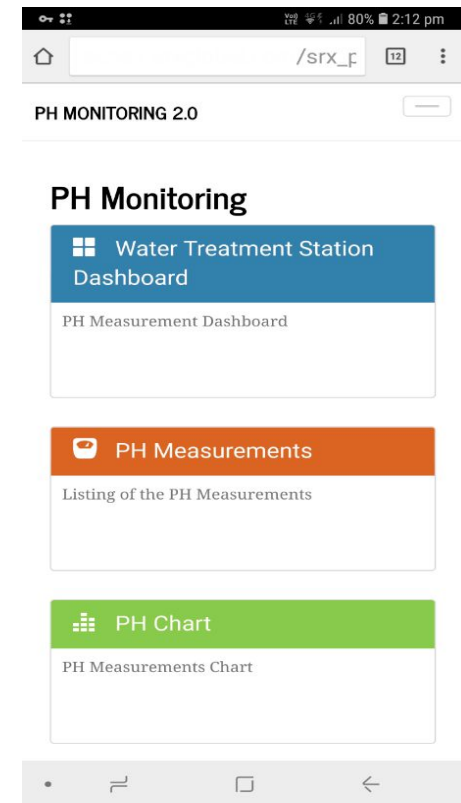
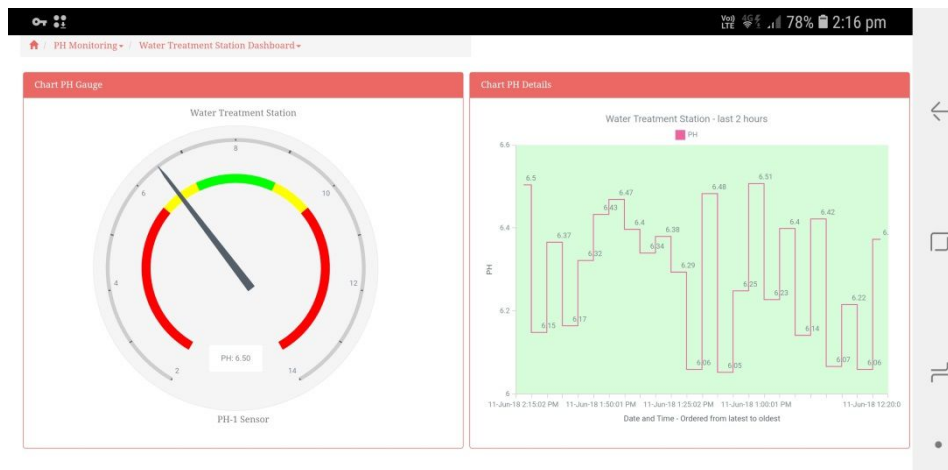
Copy permissions from ...

<Default> <Guest> nniculita

search	Add	Edit	Delete	List/View	Print/Export	Import	Admin mode (access to all records)
collapse all	x	x	x	x	x	x	
PH Monitoring (4)							
x PH Dashboard (PH_Dashboard)				x			
x Tbl Ph (tbl_ph)	x	x	x	x	x		
x Tbl PH Alarms (tbl_PH_Alarms)	x	x	x	x	x	x	
x PH (PH)				x			
DB Admin (2)							
x Tbl Sensor Names (tbl_Sensor_Names)	x	x	x	x	x	x	
x Tbl Email Notifications (tbl_email_notifications)	x	x	x	x	x	x	

# Responsive Web Design

- ▶ NS-PHMS has been developed using Bootstrap, the most popular HTML, CSS and JS framework for developing responsive, mobile first experience on the web
- ▶ Responsive design fits on any screen
- ▶ Mobile App gives you great advantage and improves your productivity



# Main Features

- ▶ All features can be accessed from Main Screen that loads after a successful login.

PH MONITORING 2.0   PH Monitoring▼   DB Admin▼

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## PH Monitoring

 Water Treatment Station Dashboard PH Measurement Dashboard	 PH Measurements Listing of the PH Measurements	 PH Chart PH Measurements Chart	 Web Reports Create your own Charts and Reports
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# Main Features – Advanced Search

- ▶ Easy to search by
  - Sensor
  - Date & Time
  - PH Measurement
  - Multiple Search Operators (Contains, Equal, Not Equal, Empty, Between, More than, Less Than, etc.)

## Tbl Ph - Advanced search

Ph Measurement	<input type="text" value="Contains"/>	<input type="text"/>
Sensor Name	<input type="text" value="Contains"/>	<input type="text"/>
Time Stamp	<input type="text" value="Equals"/>	<input type="text"/>
<input type="button" value="Search"/> <input type="button" value="Reset"/> <input type="button" value="Back to list"/>		

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	Ph Measurement	Sensor Name	Time Stamp ↓
	6.39	PH-1	11-Jun-18 11:45:01 AM
	6.15	PH-1	11-Jun-18 11:40:01 AM
	6.15	PH-1	11-Jun-18 11:35:01 AM
	6.47	PH-1	11-Jun-18 11:30:01 AM
	6.06	PH-1	11-Jun-18 11:25:01 AM
	6.39	PH-1	11-Jun-18 11:20:01 AM
	6.25	PH-1	11-Jun-18 11:15:01 AM
	6.01	PH-1	11-Jun-18 11:10:02 AM
	6.41	PH-1	11-Jun-18 11:05:01 AM
	6.22	PH-1	11-Jun-18 11:00:02 AM
	6.04	PH-1	11-Jun-18 10:55:02 AM

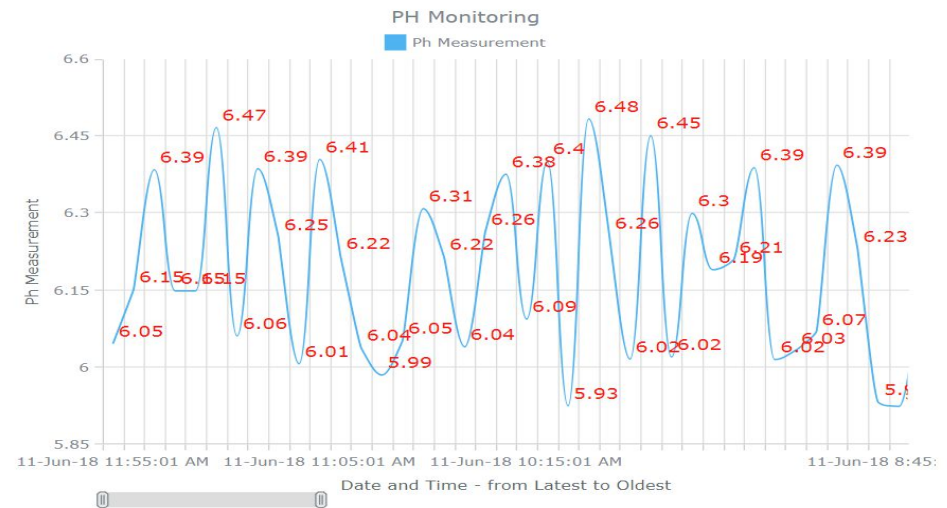
# Main Features – Charts

- ▶ PH data can be also displayed as a chart. Information can be filtered based on Sensor Name and Time Stamp of the measurement

**PH - Advanced search**

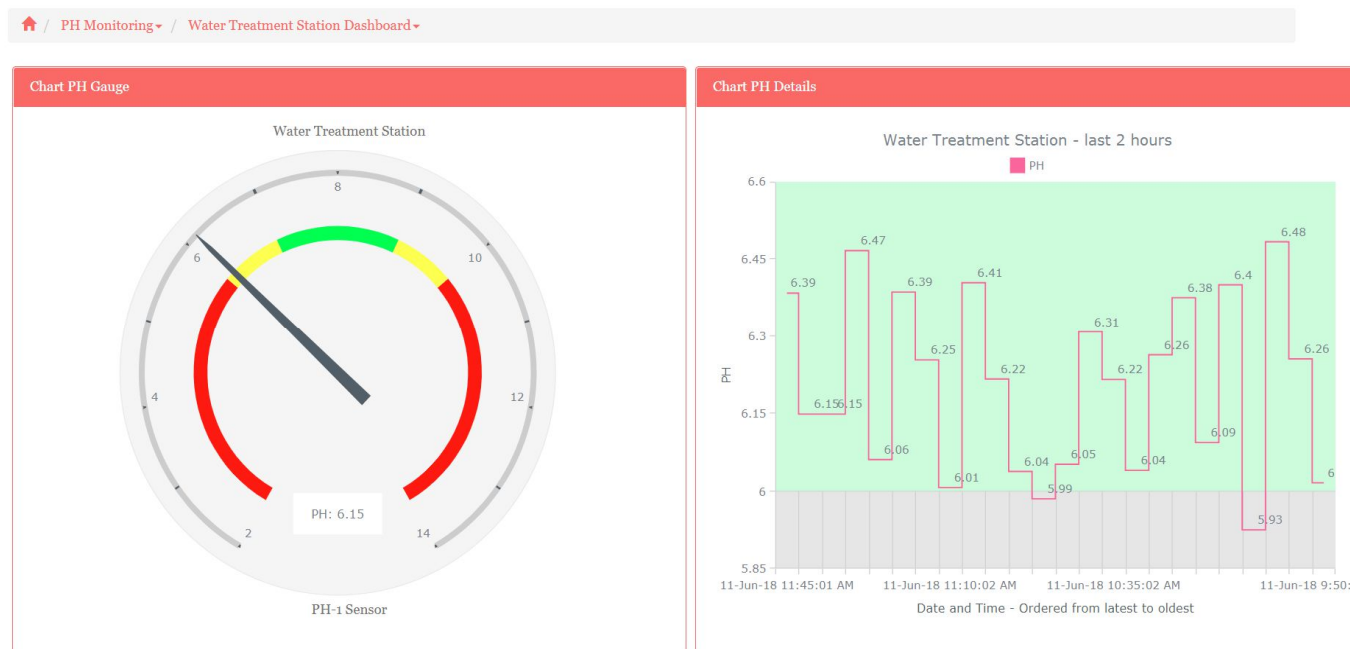
Sensor Name

Time Stamp



# Main Features – Dashboard

- ▶ The dashboard displays multiple charts on a single page, making very intuitive the interpretation of the collected measurements



# Main Features – Web Reports

- ▶ Customise and create your own charts and reports using Web Reports



The screenshot shows the report configuration interface. The title is 'Report: Where Condition, Title: in the last 24 hours..., Table: tbl\_ph'. It has a table with columns: Column, Filter, and three OR... columns. The 'Column' column has two rows: 'tbl\_ph.Time\_Stamp' and 'tbl\_ph.ph\_measurement'. The 'Filter' column has two rows: 'BETWEEN DA' and 'NOT between'. The 'OR...' columns are empty. At the bottom, there are buttons: 'Back', 'Jump to ...', 'SQL Query', 'Next', 'Save as...', 'Save', and 'Preview'.

The screenshot shows the report output table. The title is 'Report Fail Measurements in the last 24 hours'. It has buttons: 'Back to menu', 'Advanced search', 'Print this page', and 'Print whole report'. Below the buttons, there is a 'Groups per page: 5' dropdown. The table has three columns: 'Sensor Name', 'Time Stamp', and 'Ph Measurement'. The data is as follows:

Sensor Name	Time Stamp	Ph Measurement
PH-1	2018-06-10 15:00:02	5.799
	2018-06-10 15:15:01	5.813
	2018-06-10 15:20:01	5.889
	2018-06-10 15:50:01	5.794

# Main Features – Alarms

- ▶ Fully Searchable Alarms Log
- ▶ Alarms ordered descending by Date and Time

**Tbl PH Alarms - Advanced search**

Date And Time

Sensor Name

PH Measurement

Message

Lower Limit

Upper Limit

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<input type="checkbox"/>	<input type="checkbox"/>	Date And Time ↓	Sensor Name	PH Measurement	Message	Lower Limit	Upper Limit
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	11-Jun-18 10:50:02 AM	PH-1	5.99	PH out of range	6.00	10.00
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	11-Jun-18 10:05:01 AM	PH-1	5.93	PH out of range	6.00	10.00
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	11-Jun-18 8:50:01 AM	PH-1	5.93	PH out of range	6.00	10.00
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	11-Jun-18 8:45:01 AM	PH-1	5.92	PH out of range	6.00	10.00
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	11-Jun-18 8:20:01 AM	PH-1	5.99	PH out of range	6.00	10.00
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	11-Jun-18 8:15:01 AM	PH-1	5.92	PH out of range	6.00	10.00
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	11-Jun-18 7:40:02 AM	PH-1	5.95	PH out of range	6.00	10.00

# Main Features – Admin

- ▶ Add, Edit or Delete:

- Sensor Name
- Location
- PH Offset
- Lower Limit
- Upper Limit
- Comments

DB Admin

Sensor Names

Add new

Delete

Displaying 1 - 1 of 1

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	<input type="checkbox"/>	<u>Sensor Name</u>	<u>Location</u>	<u>Offset PH</u>	<u>Lower Limit</u>	<u>Upper Limit</u>	<u>Comments</u>
<div><div></div><div></div></div>	<input type="checkbox"/>	PH-1	Water Treatment Station	0.00	6.00	10	

- ▶ Admin functions should be available only for users with higher access levels. These settings are critical for good functionality of the whole system.

# Main Features – Admin

- ▶ New users can be added from Admin Web Page
- ▶ Users can be also created from login page by clicking on **Sign Up** link
- ▶ Or Active Directory can be used and then you login with your Windows credentials

Login

Username:

hniculita

Password:

.....

☐ Remember me

Sign in

Login as Guest

## Admin:AD users and groups

search

Q

Add selected

	<input type="checkbox"/>	Username	Display name	Category	Email
Add	<input type="checkbox"/>	IIS_IUSRS	IIS_IUSRS	Group	
Add	<input type="checkbox"/>	Cryptographic Operators	Cryptographic Operators	Group	
Add	<input type="checkbox"/>	Network Configuration Operators	Network Configuration Operators	Group	
Add	<input type="checkbox"/>	Performance Monitor Users	Performance Monitor Users	Group	

Thank you!

