UNIVERSITÀ' DEGLI STUDI DI SALERNO
Dipartimento di Ingegneria Civile

Publishing research results

Luigi Rizzo

Department of Civil Engineering, University of Salerno

Framework

- Bibliometric indexes and journals databases;
- Manuscript preparation;
- Manuscript publication;
- Manuscript revision;
- Reply to reviewers.

Bibliometric indexes

- The impact factor
  - ✓The impact factor (IF) of an academic journal is an index which accounts for the average number of citations to recent articles published in that journal.
  - ✓It is frequently used as an index for the relative importance of a journal within its field (the higher the impact factor the more important the journal).
  - ✓IFs are calculated yearly for those journals that are indexed in the Journal Citation Reports (Thomson Reuters).
  - ✓The IF of a journal is the average number of citations received per paper published in that journal during the two preceding years.

Bibliometric indexes

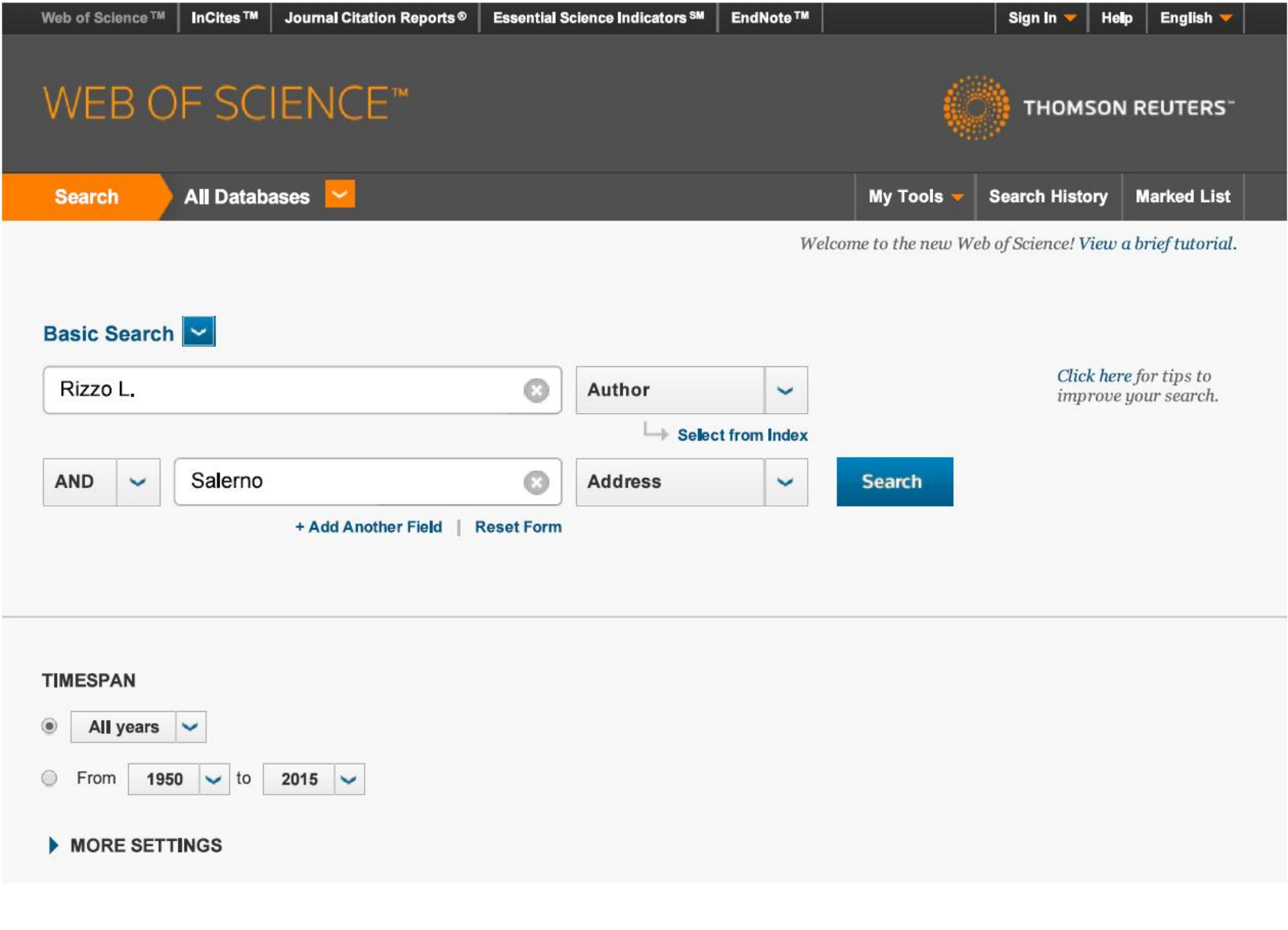
- The impact factor
  - ✓For example, if a journal has an IF of 5 in 2013, then its papers published in 2011 and 2012 received 5 citations each on average in 2013.
  - ✓Example: calculation of IF for a Journal in 2013:
    - ✓Citations in 2013 (in all indexed journals) of papers published in the journal in the 2 preceding years: e.g., 230 in 2012 and 198 in 2011, total1=428;
    - ✓Number of papers published in the journal in the 2 preceding years: e.g., 98 in 2012 and 82 in 2011, total2=180;
    - ✓IF=total1/total2=428/180= 2,377
  - ✓IFs are published yearly in Journal Citation Reports (JCR). IF is calculated for thousands scientific journals indexed in citation Thomson Reuters database.

Bibliometric indexes

- H-index or Hirsch index
  - ✓ It was originally proposed by Jorge E. Hirsch from University of California San Diego in 2005 to quantify the impact of scientists' work according to the number of their publications and citations;
  - ✓ According to its definition, a scientist has an H-index n if she/he published at least n manuscripts, each one was cited at least n times.
  - ✓ H-index not only quantifies the scientific production but also evaluate the influence of the scientist by distinguishing her/him from highly prolific scientists which published manuscripts of poor interest.
  - ✓ Moreover, the H-index is not affected so much by highly succesful single papers.

Journals databases

- *Science Citation Index (SCI)* is a citation index originally produced by the Institute for Scientific Information (ISI) and created by Eugene Garfield in 1960, and presently owned by Thomson Reuters.
- It allows the access to bibliographic informations and citations, as well as the analysis of trend, journals and scientists.
- The most expanded version (Science Citation Index Expanded) include more than 8,500 journals from 150 scientific and technological areas (2013), since 1900.
- SCI is available on-line through "Web of Science" database, which is part of "Web of Knowledge" database.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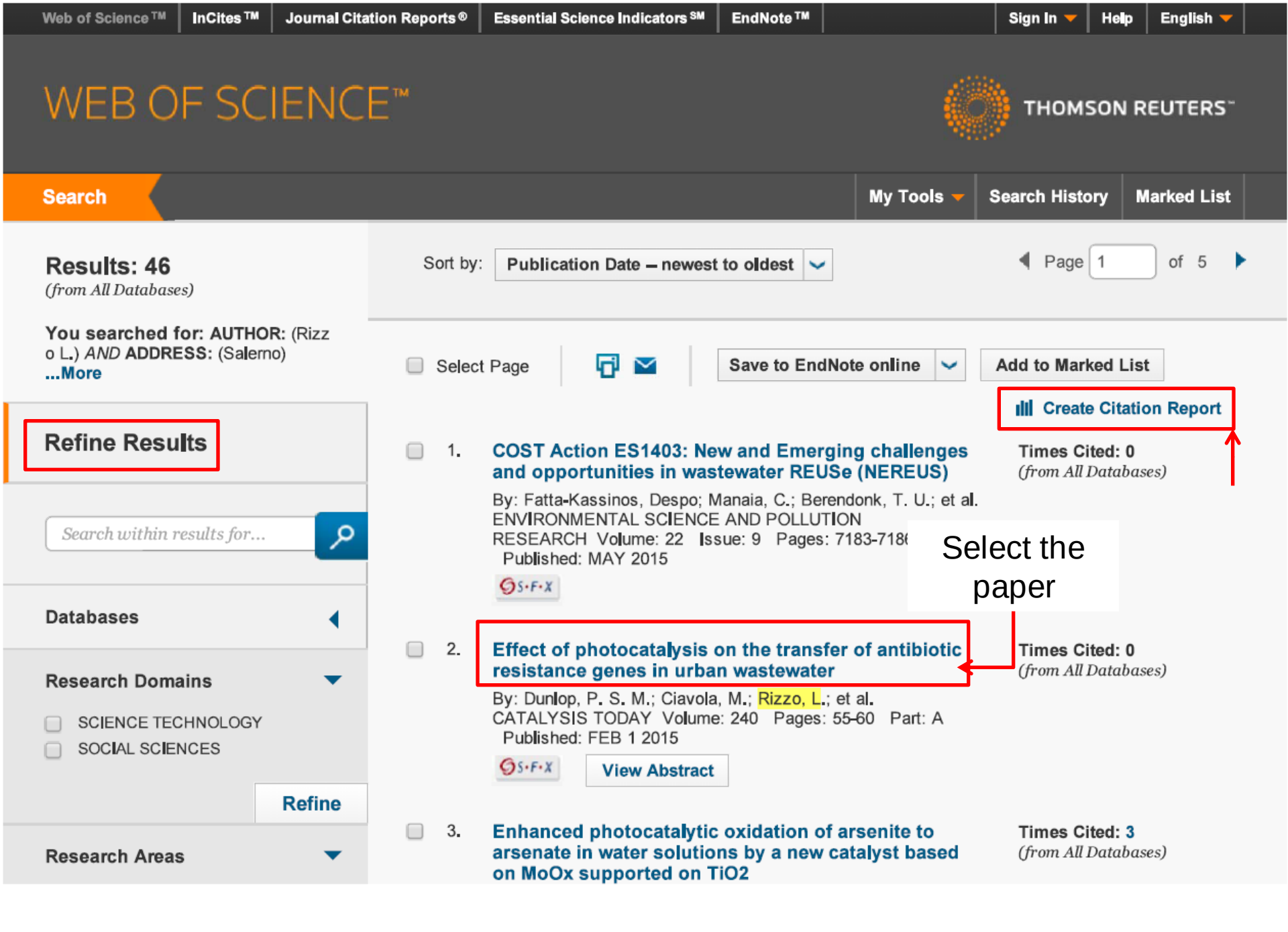
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ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH Volume: 22 Issue: 9 Pages: 7183-7186
Published: MAY 2015
Times Cited: 0
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2. Effect of photocatalysis on the transfer of antibiotic resistance genes in urban wastewater
By: Dunlop, P. S. M.; Ciavola, M.; Rizzo, L.; et al.
CATALYSIS TODAY Volume: 240 Pages: 55-60 Part: A
Published: FEB 1 2015
View Abstract
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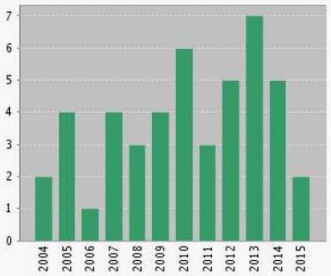

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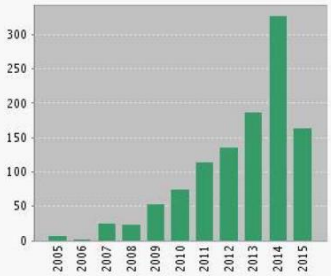

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	2011	2012	2013	2014	2015	Total	Average Citations per Year
	115	137	188	327	165	1119	101.73
1. **Review on endocrine disrupting-emerging compounds in urban wastewater: occurrence and removal by photocatalysis and ultrasonic irradiation for wastewater reuse** By: Belgiorno, Vincenzo; Rizzo, Luigi; Fatta, Despo; et al. DESALINATION Volume: 215 Issue: 1-3 Pages: 166-176 Published: SEP 5 2007	15	20	20	23	4	113	12.56
2. **Degradation of fifteen emerging contaminants at mu g L-1 initial concentrations by mild solar photo-Fenton in MWTP effluents** By: Klamerth, N.; Rizzo, L.; Malato, S.; et al. WATER RESEARCH Volume: 44 Issue: 2 Special Issue: SI Pages: 545-554 Published: JAN 2010	13	21	24	29	15	105	17.50
3. **Urban wastewater treatment plants as hotspots for the release of antibiotics in the environment: A review** By: Michael, I.; Rizzo, L.; McArdell, C. S.; et al. WATER RESEARCH Volume: 47 Issue: 3 Pages: 957-995 Published: MAR 1 2013	0	0	16	55	23	94	31.33
4. **Urban wastewater treatment plants as hotspots for antibiotic resistant bacteria and genes spread into the environment: A review** By: Rizzo, L.; Manaia, C.; Merlin, C.; et al. SCIENCE OF THE TOTAL ENVIRONMENT Volume: 447 Pages: 345-360 Published: MAR 1 2013	0	0	14	47	29	90	30.00

Journals databases

- SCOPUS
  - Scopus database collects information and data about authors of scientific papers, publications as well as calculates H-index.
  - Scopus database was created in 2004 by Elsevier publisher;
  - Scopus database allows (i) to access to paper abstracts and full papers (just for subscribers) and (ii) to sign in for alerts to keep updated about some information (e.g., paper citations).

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Inactivation and regrowth of multidrug resistant bacteria in urban wastewater after disinfection by solar-driven and chlorination processes	Fiorentino, A., Ferro, G., Alferez, M.C., (...), Fernández-Ibañez, P., Rizzo, L.	2015	Journal of Photochemistry and Photobiology B: Biology	0

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Publication range: 2004 - Present

References: 1778

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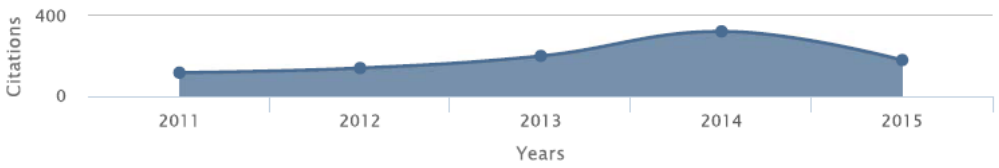

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Documents

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Sort on: Date (newest) **Citation count (descending)** ...

			<2011	2011	2012	2013	2014	2015	Subtotal	>2015	Total
		Total	**190**	**119**	**142**	**203**	**325**	**182**	**971**	**0**	**1161**
1	Review on endocrine disrupting-emerging compounds in urban w...	2007	30	16	20	22	21	6	**85**		**115**
2	Degradation of fifteen emerging contaminants at µg L-1 initi...	2010	1	12	23	27	30	15	**107**		**108**
3	Urban wastewater treatment plants as hotspots for the releas...	2013				15	58	32	**105**		**105**
4	Urban wastewater treatment plants as hotspots for antibiotic...	2013				16	47	28	**91**		**91**
5	Heterogenous photocatalytic degradation kinetics and detoxif...	2009	8	11	17	19	16	8	**71**		**79**
6	Degradation of diclofenac by TiO2 photocatalysis: UV absorba...	2009	12	12	14	11	21	5	**63**		**75**
7	Bioassays as a tool for evaluating advanced oxidation proces...	2011			19	22	18	15	**74**		**74**
8	Removal of methylene blue in a photocatalytic reactor using ...	2007	24	10	9	4	9	2	**34**		**58**
9	Application of oxidative removal of NOM to drinking water an...	2005	31	5	3	3	7	2	**20**		**51**
10	Pre-treatment of olive mill wastewater by chitosan coagulati...	2008	10	3	5	11	5	4	**28**		**38**
11	Removal of THM precursors from a high-alkaline surface water...	2005	22	7	3		2	1	**13**		**35**
12	Coagulation/chlorination of surface water: A comparison betw...	2008	8	9	3	6	5	3	**26**		**34**
13	Evaluation of operating parameters involved in solar photo-F...	2010		7	4	4	6	6	**27**		**27**
14	Inactivation and injury of total coliform bacteria after pri...	2009	6	6	3	3	5	3	**20**		**26**
15	Effect of solar simulated N-doped TiO2 photocatalysis on the...	2014					13	9	**22**		**22**

Manuscript preparation

- Original research paper;
  - ✓Title page
  - ✓Abstract
  - ✓Keywords
  - ✓Introduction
  - ✓Material and methods
  - ✓Results and discussion
  - ✓Conclusions
  - ✓Acknowledgements
  - ✓References

Manuscript preparation

- Original research paper: **title page**
  - ✓Title
    - As short as possible
    - The use of acronyms should be avoided
    - To be arranged according to the journal type
    - Emphasize the novelty of the manuscript
  - ✓Affiliation
    - Order of appearance of the authors.

Manuscript preparation

- Original research paper: **abstract**
  - ✓ It should summarize in a few lines (check journal "guidelines for authors"):
    - Introduction
    - Novelty
    - Experimental procedure/methods
    - Main results (possibly supported by numbers)
    - Main conclusion

Manuscript preparation

- Original research paper: **keywords**

  - ✓Select a limited number of key-words (check journal "guidelines for authors"):

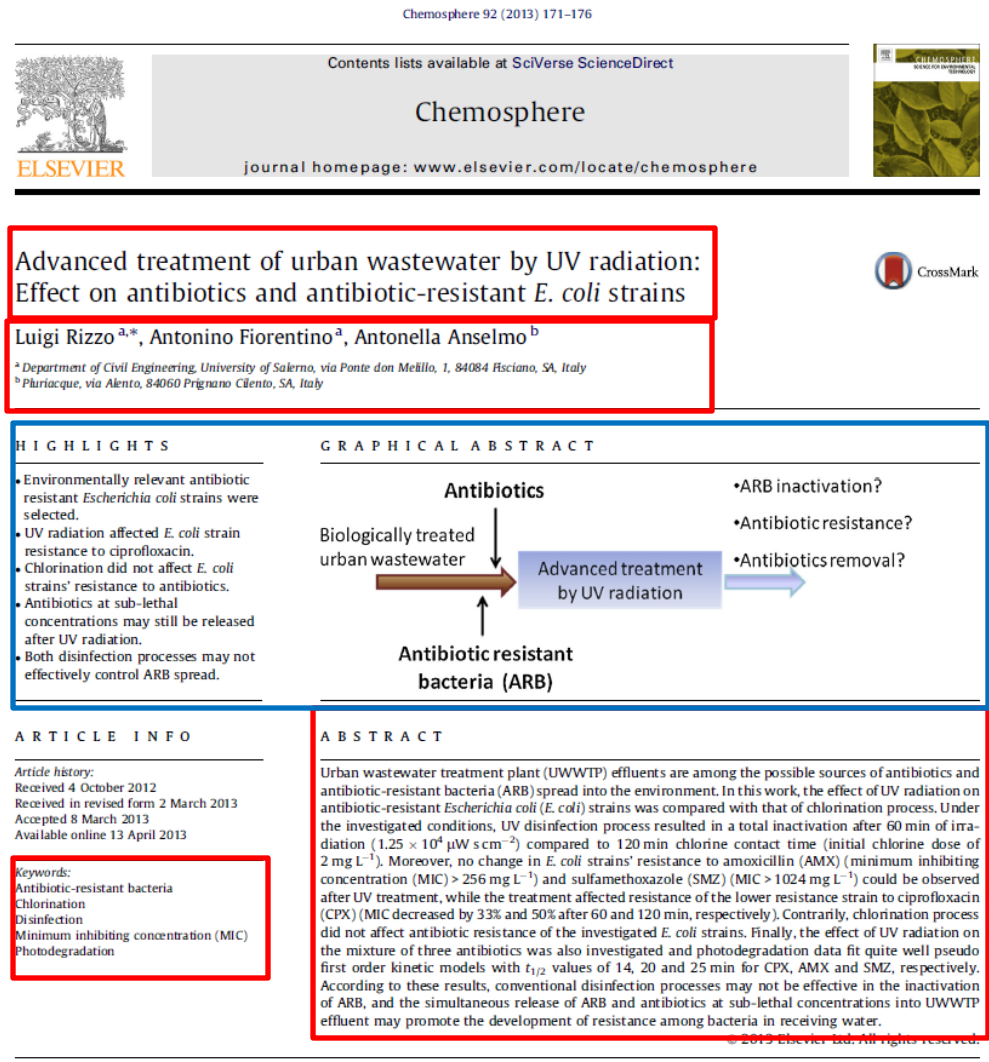
    - Chose words (not statements) clearly focus the topic;
    - Possibly avoid duplication of words already given in the title (this will increase the chance your manuscript to be found in journals database);
    - Avoid too generic key-words.

Manuscript preparation

- Original research paper: **highlights** and **graphical abstract**
  - ✓**Highlights** consist of a short collection of bullet points that convey the core findings of the article.
    - ➢The number and length of the **'Highlights'** changes according to the journal.
  - ✓The **graphical abstract** should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership.
    - ➢Image size changes according to the journal.

Manuscript preparation

- Original research paper: **title page**



Chemosphere 92 (2013) 171–176

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Title

Advanced treatment of urban wastewater by UV radiation: Effect on antibiotics and antibiotic-resistant *E. coli* strains

Authors and affiliations

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[b] Pluriacque, via Alento, 84060 Prignano Cilento, SA, Italy

Highlights and Graphical abstract

HIGHLIGHTS

- Environmentally relevant antibiotic resistant *Escherichia coli* strains were selected.
- UV radiation affected *E. coli* strain resistance to ciprofloxacin.
- Chlorination did not affect *E. coli* strains' resistance to antibiotics.
- Antibiotics at sub-lethal concentrations may still be released after UV radiation.
- Both disinfection processes may not effectively control ARB spread.

GRAPHICAL ABSTRACT

ARTICLE INFO

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Received 4 October 2012
Received in revised form 2 March 2013
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Key-words

Keywords:
Antibiotic-resistant bacteria
Chlorination
Disinfection
Minimum inhibiting concentration (MIC)
Photodegradation

Abstract

ABSTRACT

Urban wastewater treatment plant (UWWTP) effluents are among the possible sources of antibiotics and antibiotic-resistant bacteria (ARB) spread into the environment. In this work, the effect of UV radiation on antibiotic-resistant *Escherichia coli* (*E. coli*) strains was compared with that of chlorination process. Under the investigated conditions, UV disinfection process resulted in a total inactivation after 60 min of irradiation (1.25×10^4 μW s cm^{-2}) compared to 120 min chlorine contact time (initial chlorine dose of 2 mg L^{-1}). Moreover, no change in *E. coli* strains' resistance to amoxicillin (AMX) (minimum inhibiting concentration (MIC) > 256 mg L^{-1}) and sulfamethoxazole (SMZ) (MIC > 1024 mg L^{-1}) could be observed after UV treatment, while the treatment affected resistance of the lower resistance strain to ciprofloxacin (CPX) (MIC decreased by 33% and 50% after 60 and 120 min, respectively). Contrarily, chlorination process did not affect antibiotic resistance of the investigated *E. coli* strains. Finally, the effect of UV radiation on the mixture of three antibiotics was also investigated and photodegradation data fit quite well pseudo first order kinetic models with $t_{1/2}$ values of 14, 20 and 25 min for CPX, AMX and SMZ, respectively. According to these results, conventional disinfection processes may not be effective in the inactivation of ARB, and the simultaneous release of ARB and antibiotics at sub-lethal concentrations into UWWTP effluent may promote the development of resistance among bacteria in receiving water.

Manuscript preparation

- Original research paper: **introduction**
  - Overview and relevance of the (environmental) issue according to international literature;
  - State of art with regard to approaches, processes, technologies used to address the target issue/problem;
  - Explanation of possible drawbacks/limitations of the approaches, processes, technologies available;
  - Explanation of the proposed solution and the potential advantages compared to the state of art (**novelty**);
  - Description of the objectives;
  - Short description of methods/methodologies/approach.

Manuscript preparation

- Original research paper: **introduction**

Overview of the (environmental) issue

State of art

Novelty

Objectives and approach

2003; Baquero et al., 2008). At least 18 000 Americans and 25000 people in the European Union countries die every year because of drug-resistant infections (Associated Press, 2007; ECDC/EMEA, 2009).

Antibiotics for human use and their metabolites, as excreted by humans, reach urban wastewater treatment plants (UWWTPs) via sewage system. Conventional UWWTPs are typically based on biological processes which only partially remove antibiotics, thus making their effluents possible sources of antibiotics and antibiotic-resistant bacteria (ARB) spread into the environment (Watkinson et al., 2007; Behera et al., 2011). In particular, biological processes are suspected to contribute to ARB selection as well as resistance transfer among bacteria (Ferreira da Silva et al., 2006). Advanced treatment technologies (e.g., adsorption, advanced oxidation processes, membranes) have been investigated to control antibiotics' release into the effluent (Putra et al., 2009; Rizzo, 2011; Sahar et al., 2011). UV irradiation has also been investigated in the removal of antibiotics from wastewater effluents. In particular, sulfonamide (sulfamethoxazole (SMZ) and sulfadimethoxine) and quinolone (norfloxacin and nalidixic acid) antibiotics showed quite high removal efficiency (86–100%), compared to macrolide (clarithromycin, erythromycin and azithromycin) and tetracycline which were only poorly removed (24–34% and 15%, respectively) (Kim et al., 2009). Photodegradation reactions can take place in two different ways: direct and indirect (Lam and Mabury, 2005; Fatta-Kassinos et al., 2011). In direct photolysis, a molecule absorbing radiation may become unstable and subsequently decompose, while indirect photolysis involves naturally occurring molecules which generate strong reactive species (such as singlet oxygen, hydroxyl radicals or alkyl peroxyl radicals), that can react with organic compounds. UV radiation has also been increasingly used as disinfection process since conventional disinfection by chlorine was found to promote the formation of potentially carcinogenic by-products (Rook, 1974). However, poor information and non-conclusive data are available on the effect of disinfection processes on ARB (Iwane et al., 2001; Munir et al., 2011). Moreover, the effect of disinfection processes on the changes of bacterial resistance to antibiotics (evaluated in terms of minimum inhibiting concentration (MIC)) has not yet been investigated to our knowledge, therefore it should be of interest to understand if the colonies surviving a disinfection treatment show any change in their resistance to antibiotics. Finally, since the occurrence of antibiotics at sub-lethal concentrations in wastewater may promote the development of resistance among bacteria in receiving water (Gullberg et al., 2011), the simultaneous effect of UV radiation process on both antibiotics and ARB is worthy of investigation to advance the knowledge and consequently to plan the strategies to control the risk of antibiotic resistance spread into the environment.

To address these tasks, in the present work, preliminary UV radiation tests were carried out on actual wastewater samples taken from the effluent of the secondary treatment of an UWWTP. The wastewater samples were used as received to evaluate the effect of UV radiation on indigenous *Escherichia coli* (*E. coli*), Gram-negative bacteria typically occurring in wastewater and used to evaluate antibiotic resistance changes in our study. In the subsequent tests, real wastewater samples were first autoclaved (to inactivate all naturally occurring bacteria) and then inoculated independently with two *E. coli* strains selected from the same wastewater samples, according to their resistance to a mixture of three antibiotics amoxicillin (AMX), ciprofloxacin (CPX), and SMZ. The inactivation of the inoculated *E. coli* strains by UV radiation as well as the effect on their resistance to the target antibiotics was investigated and compared to chlorination process. Finally,

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Advanced treatment of urban wastewater by UV radiation: Effect on antibiotics and antibiotic-resistant *E. coli* strains

Luigi Rizzo [a,*], Antonino Fiorentino [a], Antonella Anselmo [b]

Manuscript preparation

- Original research paper: **material and methods**
  - It should be organized in sub-paragraphs (sometime this is a requirement of the journal);
  - Experimental procedure/design should be clearly explained;
  - The characteristics of the environmental matrices investigated should be explained;
  - Materials and equipment (including producers) should be explained;
  - (Analytical) methods should be explained (or eventually quoted if official/well established methods);

Manuscript preparation

- Original research paper: **material and methods**

2. Materials and methods

2.1. Chemicals

Amoxicillin, CPX and SMZ were purchased from Sigma Aldrich (St. Louis, MO, USA) and used as obtained. Milli-Q water system (Millipore, Billerica, MA, USA) was used for the preparation of the freshly prepared solutions. Sodium hypochlorite solution (available chlorine 10%) was purchased from Sigma Aldrich (St. Louis, MO, USA) and used as obtained.

2.2. Wastewater samples

Wastewater samples for *E. coli* strain selection and disinfection experiments were taken from an UWWTP located in the province of Salerno, Italy. In particular, the samples were taken from the effluent of the biological process (activated sludge) before reaching the disinfection unit (chlorination). Samples were collected in sterilized 1 L amber glass bottles. The characteristics of wastewater samples taken from UWWTP can be summarized as follows: pH 7.5, 338 mg L^{-1} of BOD_5, 460 mg L^{-1} of COD, 44 mg L^{-1} of TSS, 4.0×10^6 CFU 100 mL^{-1} of *E. coli*, in the influent stream and pH 6.7, 25 mg L^{-1} of BOD_5, 64 mg L^{-1} of COD, 18 mg L^{-1} of TSS, 3.4×10^3 CFU 100 mL^{-1} of *E. coli*, in the effluent stream.

2.3. Selection and identification of antibiotic-resistant E. coli strains

E. coli strains' resistant to the target antibiotics were selected according to the procedure described in our previous work (Rizzo et al., 2012). Briefly, 50 mL of wastewater sample was filtered through 0.45 μm membrane filters (Millipore, Billerica, MA, USA) and then cultivated (24 h incubation time at 44 °C) in tryptone bile X-glucuronide (TBX) agar medium (Oxoid, Basingstoke, UK), a selective, chromogenic medium for the detection and enumeration of *E. coli*, including tryptone (20.0 g L^{-1}), bile salts (1.5 g L^{-1}), agar (15.0 g L^{-1}), X-glucuronide (0.075 g L^{-1}) and pH 7.2 ± 0.2. Ten colonies were randomly collected from TBX agar medium after incubation period and used in the subsequent step for the selection of resistant strains. Each colony was cultivated (24 h incubation time at 37 °C) in four different tryptone soya agar (TSA) media (Oxoid, Basingstoke, UK) prepared with antibiotic concentrations of 2 mg L^{-1} for CPX, 16 mg L^{-1} for AMX, 64 mg L^{-1} for SMZ (and half antibiotic concentrations) and their mixture, respectively. Tryptone soya agar is a general purpose medium for the growth of a wide variety of organisms, including pancreatic digest of casein (15.0 g L^{-1}), enzymatic digest of soya bean (5.0 g L^{-1}), sodium chloride (5.0 g L^{-1}), agar (15.0 g L^{-1}) and pH 7.3 ± 0.2. The full antibiotic concentrations were chosen according to the respective MICs for *E. coli* listed in "Clinical and Laboratory Standards Institute" documentation (CLSI, 2011). The *E. coli* strains used for subsequent UV radiation and chlorination experiments, were selected from the two Petri dishes which showed the lower number of colonies (presumably, the higher resistance strains), (transferred in 15% glycerol tryptic soya broth (TSB) from Oxoid, Basingstoke, UK) and frozen at −20 °C. Tryptic soya broth is a highly nutritious general purpose medium for the growth of bacteria and fungi, including pancreatic digest of casein (17.0 g L^{-1}), enzymatic digest of soya bean (3.0 g L^{-1}), sodium chloride (5.0 g L^{-1}), dipotassium hydrogen phosphate (2.5 g L^{-1}), glucose (2.5 g L^{-1}) and pH 7.3 ± 0.2. The selected strains were identified by Rapid One System method (Remel, Lenexa, KS, USA).

2.4. Inoculum and sample preparation

Two sets of experiments with UV radiation were carried out. Preliminary UV radiation tests were carried out on actual wastewater samples used as received to evaluate the effect of UV radiation on indigenous *E. coli* strains typically occurring in wastewater. In the subsequent tests the actual wastewater samples were first autoclaved (to inactivate all naturally occurring bacteria) and the efficiency of the sterilization process was tested (no bacteria surviving autoclaving step as seen by the subsequent bacterial count). The autoclaved wastewater samples were then inoculated with the selected *E. coli* strains. The selected *E. coli* strains were unfrozen and transferred to 10 mL physiological solution to achieve 1.5×10^8 CFU (0.5 McFarland). Suitable dilutions were made to achieve the desired initial bacterial density before inoculating *E. coli* strains to wastewater samples.

2.5. UV radiation tests

UV radiation experiments were carried out in a 2.2 L cylindrical glass reactor (14.5 cm in diameter) filled in with 1 L wastewater sample (6.0 cm water height). The reactor was placed in a water bath to keep the temperature constant (roughly 30 °C) during experiments and continuously stirred. Experiments were conducted in a box equipped with a wide spectrum 250 W lamp (Procomat, Florence, Italy) fixed at 33 cm from the upper water level in the reactor. In disinfection experiments, the wastewater samples were prepared according to the procedure described in Section 2.4. The samples were exposed to a range of UV doses ($0–2.5 \times 10^4$ μW s cm^{-2}) by varying the exposure time from 0 to 120 min. The corresponding UV dose was calculated by multiplying the irradiation time for the intensity of UV lamp measured at the bactericidal wavelength (i.e., 254 nm). UV radiation experiments were duplicated. Control tests using inoculated wastewater sample under dark condition were also carried out in parallel to UV radiation experiments and no significant change compared to initial bacterial count was detected.

In photodegradation experiments, 1 mg of each antibiotic was dissolved in 1 L wastewater sample to achieve a mixture of 1 mg L^{-1}, respectively.

2.6. Chlorination test

Sodium hypochlorite solution was added to the inoculated wastewater sample (1 L) to simulate the chlorination process. Chlorine was dosed (2 mg L^{-1}) to achieve roughly 0.2 mg L^{-1} of residual chlorine after 60 min of contact time to meet the Italian standard for residual disinfectant in UWWTP effluent. Bacterial inactivation, MIC and residual chlorine were monitored up to 120 min contact time. After sampling, 0.1 mL of sodium thiosulfate solution (10%) was added to each 100 mL sample to remove residual chlorine before bacterial count. Chlorination experiments were duplicated.

2.7. Bacterial count

Bacterial count was performed by the membrane filtration method (APHA, 1998). Briefly, samples were filtered through 0.45 μm pore size cellulose nitrate membranes (Millipore, Billerica, MA, USA), placed onto TBX agar and incubated at 44 °C for 24 h. Measurements were carried out in triplicates and average values and standard deviation were plotted as CFU 100 mL^{-1}.

2.8. Antibiotic resistance assay

Minimum inhibiting concentration was evaluated by E-test, a well-established method for antimicrobial resistance testing, using AMX, CPX and SMZ antibiotic strips (Biomérieux, Marcy l'Etoile, France) according to the procedure described in our previous work (Rizzo et al., 2012). *E. coli* ATCC 25922 and *Pseudomonas aeruginosa* ATCC 27853 were the strains used for the quality control test. In the preliminary UV radiation tests with indigenous *E. coli* strains, three colonies were randomly selected among those surviving after 60 min treatment and were placed in a physiological solution until a turbidity as high as 0.5 McFarland was achieved. Afterward, a sterile tampon was firstly dipped in the respective suspension and then uniformly spread on three different 150 mm Mueller Hinton agar plates (Biomérieux, Marcy l'Etoile, France), in three different places of each plate, respectively. AMX, CPX and SMZ strips were applied on the plates in the three different places, respectively. The MIC value was read from the scale where the ellipse edge intersected the strip, after 24 h of incubation at 37 °C. The average value for MIC calculated on the three different readings was reported (Table 1).

In the disinfection experiments with selected *E. coli* strains, the procedure for MIC assessment was the same as described above for the tests with indigenous *E. coli* strains, but one colony was taken for each time (according to the procedure explained in Section 2.4). The procedure was repeated and the average value for MIC was reported. Isolates were considered multidrug resistant (MDR) when simultaneous resistance to two or three antibiotics was observed.

2.9. Analytical measurements

Free residual chlorine was measured by a portable spectrophotometer (Pocket colorimeter Chlorine; Hach, Loveland, CO, USA). Residual concentration of each antibiotic was measured by LC–MS. The chromatographic system used consisted of a Waters 2695 separation module (Milford, MA, USA) equipped with an automatic injector, a degasser system and a binary pump with four solvent channels. The separation module is connected to a triple quadrupole mass spectrometer Quattro micro™ API detector with electrospray ionization. A C18 (Ascentis Express, Sigma–Aldrich, St. Louis, MO, USA) reversed phase column (2.1 mm × 150 mm, 3 μm) was used for the separation of target analytes. Sample aliquots of 10 μL were injected into the column. A binary mobile phase with gradient elution was used. Ultra-pure water with 0.1% formic acid and acetonitrile with 0.1% formic acid were used as solvents A and B, respectively. The gradient was started with 20% B, increased up to 45% in 8 min, and then returned to the initial mobile phase composition in 10 min. The flow-rate was set at 0.2 mL min^{-1}. The column temperature was set at 25 °C.

UV absorbance spectra of antibiotics were detected in the range of 200–500 nm by a lambda 12 UV–Vis spectrophotometer from Perkin Elmer (Waltham, MA, USA), equipped with 1 cm optic pathway quartz cells.

A spectrometer from Ocean Optics (HR-2000; Dunedin, FL, USA), equipped with cosine corrector with Spectralon diffusing material, was used to measure the spectral radiant flux of the UV lamp.

Table 1
Comparison between MIC values (mg L^{-1}) detected for AMX, CPX and SMZ after 60 min irradiation time of indigenous *E. coli* colonies and corresponding WT, *S* and *R* values from EUCAST (2012).

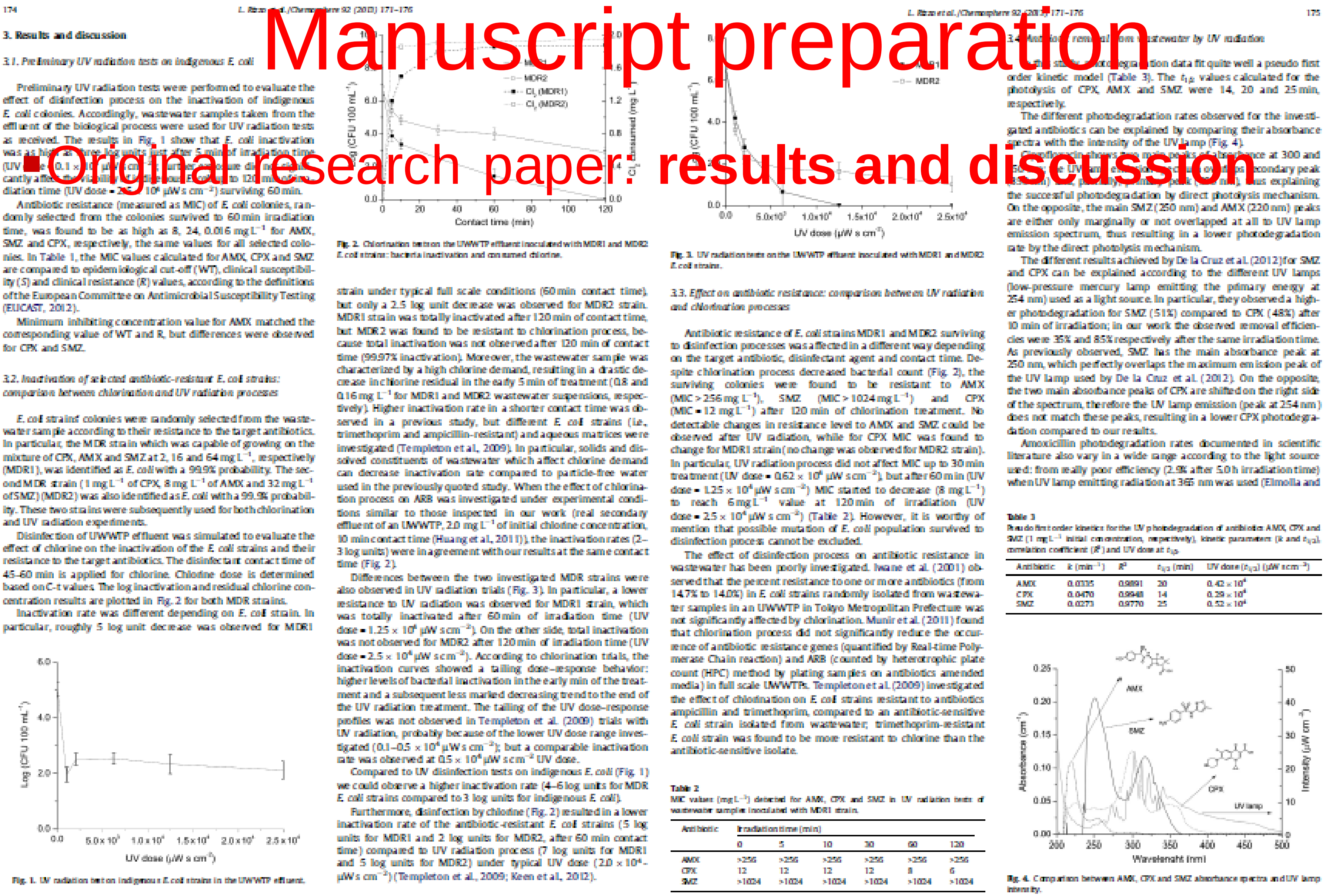
Antibiotic	MIC	WT	*S*	*R*
AMX	8	≤8	–	>8
CPX	0.016	≤0.064	≤0.5	>1
SMZ	24	≤64	–	–

Manuscript preparation

- Original research paper: **results and discussion**
  - Depending on the journal, these sections can be separated or eventually merged in one section;
  - The results must be explained and duplication of information/data between text and figures/tables should be avoided;
  - The discussion of the results is a fundamental part of a scientific paper; the results should be compared and discussed according to the relevant and updated international scientific literature;
  - In particular, the authors are expected to explain the differences with the results available in scientific literature.

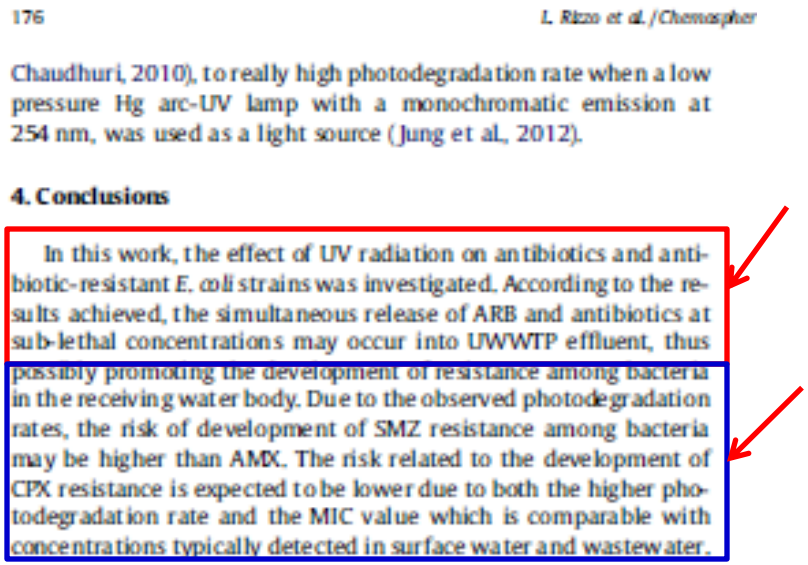
Manuscript preparation

- Original research paper: **results and discussion**



Manuscript preparation

- Original research paper: **conclusion**



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Chaudhuri, 2010), to really high photodegradation rate when a low pressure Hg arc-UV lamp with a monochromatic emission at 254 nm, was used as a light source (Jung et al., 2012).

4. Conclusions

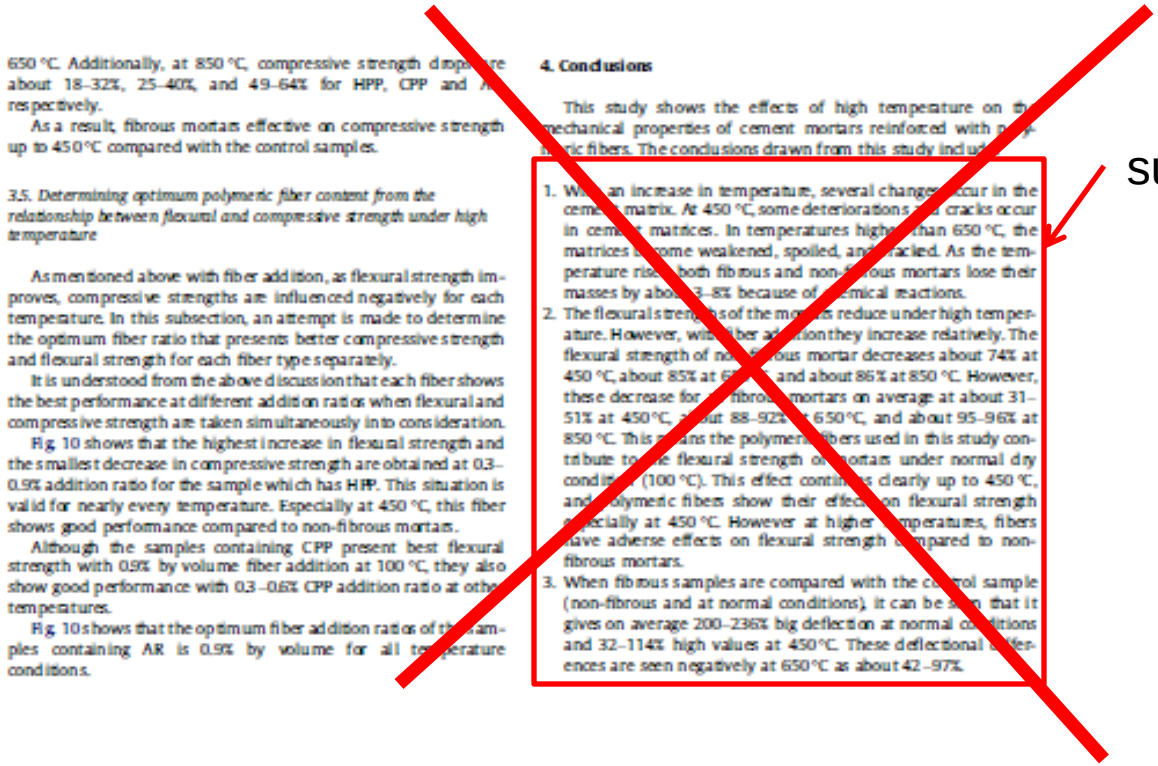
In this work, the effect of UV radiation on antibiotics and antibiotic-resistant *E. coli* strains was investigated. According to the results achieved, the simultaneous release of ARB and antibiotics at sub-lethal concentrations may occur into UWWTP effluent, thus possibly promoting the development of resistance among bacteria in the receiving water body. Due to the observed photodegradation rates, the risk of development of SMZ resistance among bacteria may be higher than AMX. The risk related to the development of CPX resistance is expected to be lower due to both the higher photodegradation rate and the MIC value which is comparable with concentrations typically detected in surface water and wastewater.

Summary of the main results

Conclusion

Manuscript preparation

- Original research paper: **conclusion**



650 °C. Additionally, at 850 °C, compressive strength drops are about 18–32%, 25–40%, and 49–64% for HPP, CPP and A respectively.

As a result, fibrous mortars effective on compressive strength up to 450 °C compared with the control samples.

3.5. Determining optimum polymeric fiber content from the relationship between flexural and compressive strength under high temperature

As mentioned above with fiber addition, as flexural strength improves, compressive strengths are influenced negatively for each temperature. In this subsection, an attempt is made to determine the optimum fiber ratio that presents better compressive strength and flexural strength for each fiber type separately.

It is understood from the above discussion that each fiber shows the best performance at different addition ratios when flexural and compressive strength are taken simultaneously into consideration.

Fig. 10 shows that the highest increase in flexural strength and the smallest decrease in compressive strength are obtained at 0.3–0.9% addition ratio for the sample which has HPP. This situation is valid for nearly every temperature. Especially at 450 °C, this fiber shows good performance compared to non-fibrous mortars.

Although the samples containing CPP present best flexural strength with 0.9% by volume fiber addition at 100 °C, they also show good performance with 0.3–0.6% CPP addition ratio at other temperatures.

Fig. 10 shows that the optimum fiber addition ratios of the samples containing AR is 0.9% by volume for all temperature conditions.

4. Conclusions

This study shows the effects of high temperature on the mechanical properties of cement mortars reinforced with polymeric fibers. The conclusions drawn from this study include

1. With an increase in temperature, several changes occur in the cement matrix. At 450 °C, some deterioration and cracks occur in cement matrices. In temperatures higher than 650 °C, the matrices become weakened, spoiled, and cracked. As the temperature rises, both fibrous and non-fibrous mortars lose their masses by about 3–8% because of chemical reactions.
2. The flexural strengths of the mortars reduce under high temperature. However, with fiber addition they increase relatively. The flexural strength of non-fibrous mortar decreases about 74% at 450 °C, about 85% at 6[illegible] and about 86% at 850 °C. However, these decrease for fibrous mortars on average at about 31–51% at 450 °C, about 88–92% at 650 °C, and about 95–96% at 850 °C. This means the polymeric fibers used in this study contribute to the flexural strength of mortars under normal dry condition (100 °C). This effect continues clearly up to 450 °C, and polymeric fibers show their effects on flexural strength especially at 450 °C. However at higher temperatures, fibers have adverse effects on flexural strength compared to non-fibrous mortars.
3. When fibrous samples are compared with the control sample (non-fibrous and at normal conditions), it can be seen that it gives on average 200–236% big deflection at normal conditions and 32–114% high values at 450 °C. These deflectional differences are seen negatively at 650 °C as about 42–97%.

Just a summary of the main results

Manuscript preparation

- Original research paper: **acknowledgements**
  - Why should acknowledgements be included?
  - Where in the manuscript?
  - Who should be aknowledged?

4. Conclusions

In this work, the effect of UV radiation on antibiotics and antibiotic-resistant *E. coli* strains was investigated. According to the results achieved, the simultaneous release of ARB and antibiotics at sub-lethal concentrations may occur into UWWTP effluent, thus possibly promoting the development of resistance among bacteria in the receiving water body. Due to the observed photodegradation rates, the risk of development of SMZ resistance among bacteria may be higher than AMX. The risk related to the development of CPX resistance is expected to be lower due to both the higher photodegradation rate and the MIC value which is comparable with concentrations typically detected in surface water and wastewater.

Acknowledgements

The authors are grateful to both University of Salerno for funding the project "Effect of solar photolysis on antibiotic degradation, antibiotic-resistant bacteria inactivation as well as on their capacity to develop antibiotic resistance in surface water", Ex 60%, anno 2011, and Dr. Patrizia Iannece, Department of Chemistry and Biology, University of Salerno, for her technical support in the measurement of antibiotics. The contribution of EU in supporting COST Action TD0803: Detecting evolutionary hot spots of antibiotic resistances in Europe (DARE), was highly appreciated too.

References

APHA, 1998. Standard Methods for the Examination of Water and Wastewater, 20th ed. American Public Health Association, Washington, DC, USA.
Associated Press, 2007. "Superbug" deaths could surpass AIDS. October 16, 2007 (accessed online January 9, 2009).
Baquero, F., Martínez, J.-L., Cantón, R., 2008. Antibiotics and antibiotic resistance in water environments. Curr. Opin. Biotechnol. 19, 260–265.
Behera, S.K., Kim, H.W., Oh, J.-E., Park, H.-S., 2011. Occurrence and removal of antibiotics, hormones and several other pharmaceuticals in wastewater treatment plants of the largest industrial city of Korea. Sci. Total Environ. 409, 4351–4360.
CLSI, 2011. Clinical and Laboratory Standards Institute. <http://www.clsi.org/>.
De la Cruz, N., Giménez, J., Esplugas, S., Grandjean, D., de Alencastro, L.F., Pulgarín, C., 2012. Degradation of 32 emergent contaminants by UV and neutral photo-fenton in domestic wastewater effluent previously treated by activated sludge. Water Res. 46, 1947–1957.
ECDC/EMEA, 2009. The bacterial challenge: time to react. Technical Report. <http://www.ecdc.europa.eu/en/publications/Publications/0909_TER_The_Bacterial_Challenge_Time_to_React.pdf>.

Manuscript submission

- Journal choice
- Guidelines for authors
- Cover letter

Manuscript submission

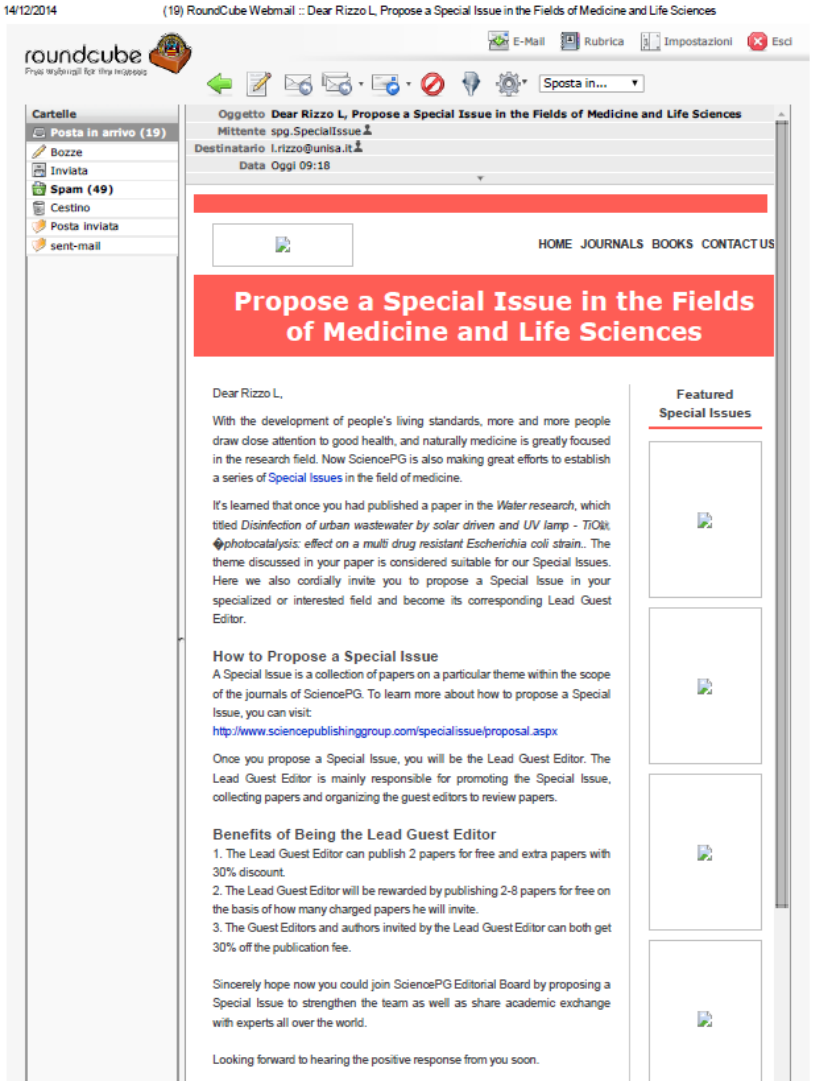
- Journal choice
  - ✓Match with journal scope and aims;
  - ✓Journal relevance (impact factor);
  - ✓Editor and editorial board;
  - ✓Expected times for review, acceptance, on-line publication, final publication;
  - ✓Open access (Yes/No);
  - ✓…experience!

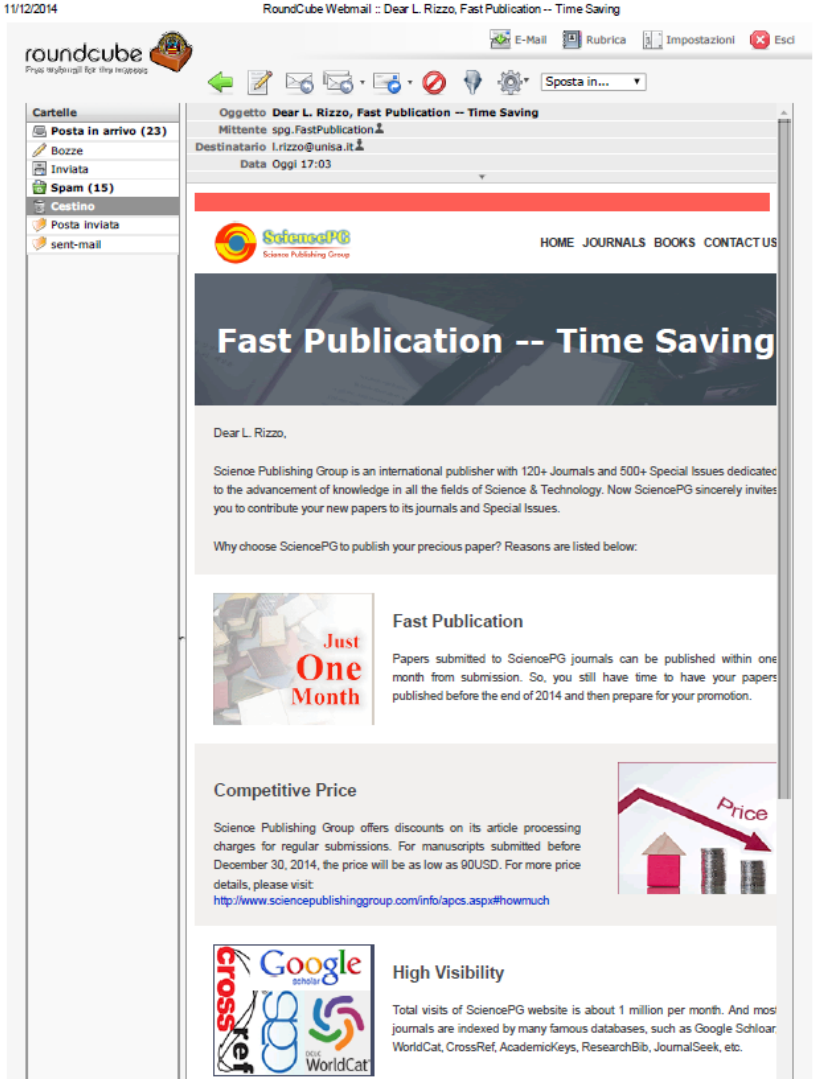
Manuscript submission

- Journal choice: some publisher
  - ✓ Elsevier;
  - ✓ Taylor & Francis;
  - ✓ Wiley;
  - ✓ Benthan Science Publishers;
  - ✓ Springer;
  - ✓ American Chemical Society (ACS);
  - ✓ American Society of Civil Engineers (ASCE);
  - ✓ OMICS (open access);

Manuscript submission

- Journal choice: Open Access journals





Manuscript submission

- Journal choice

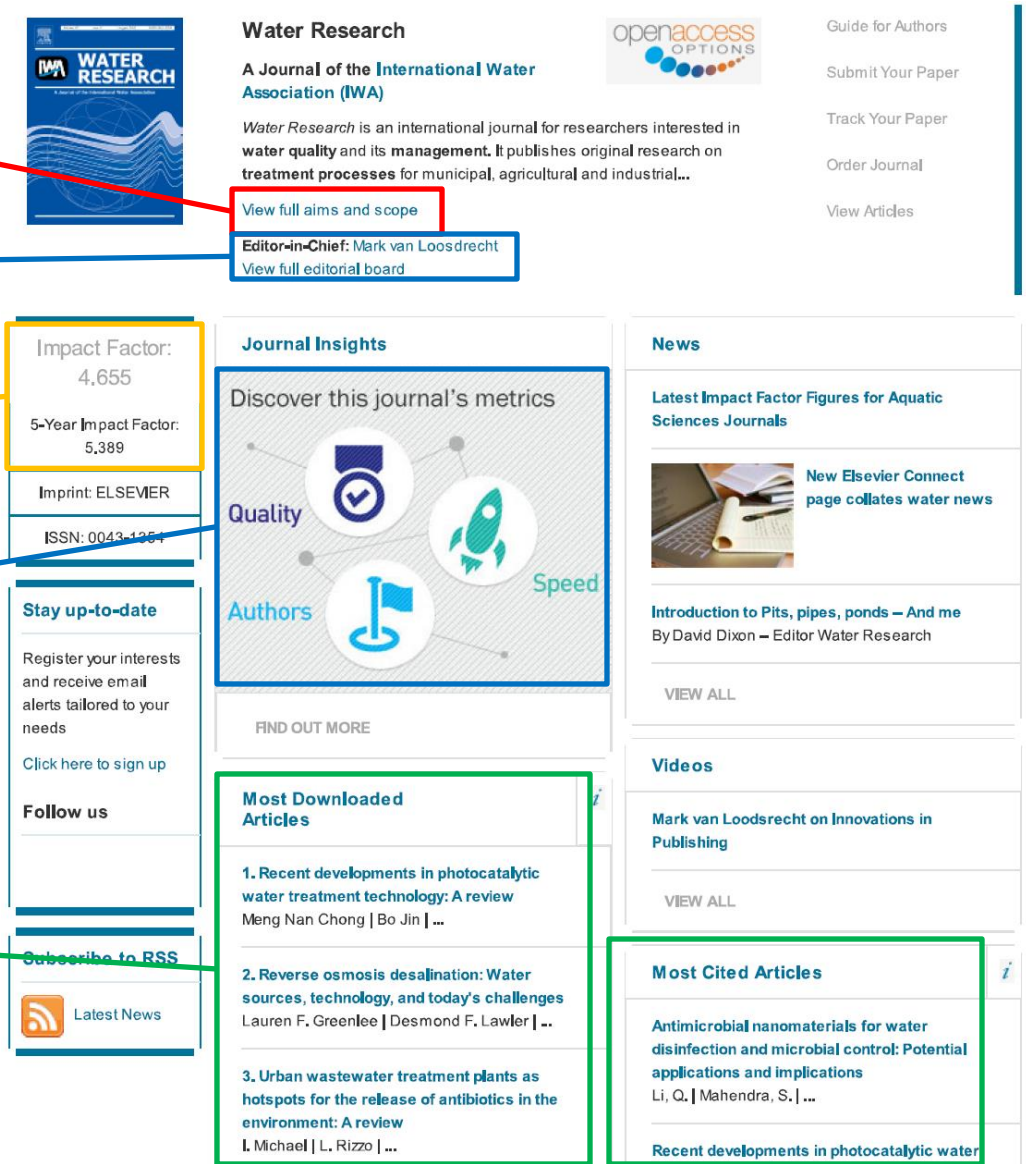
Aims and scope

Editor and editorial board

Impact factor

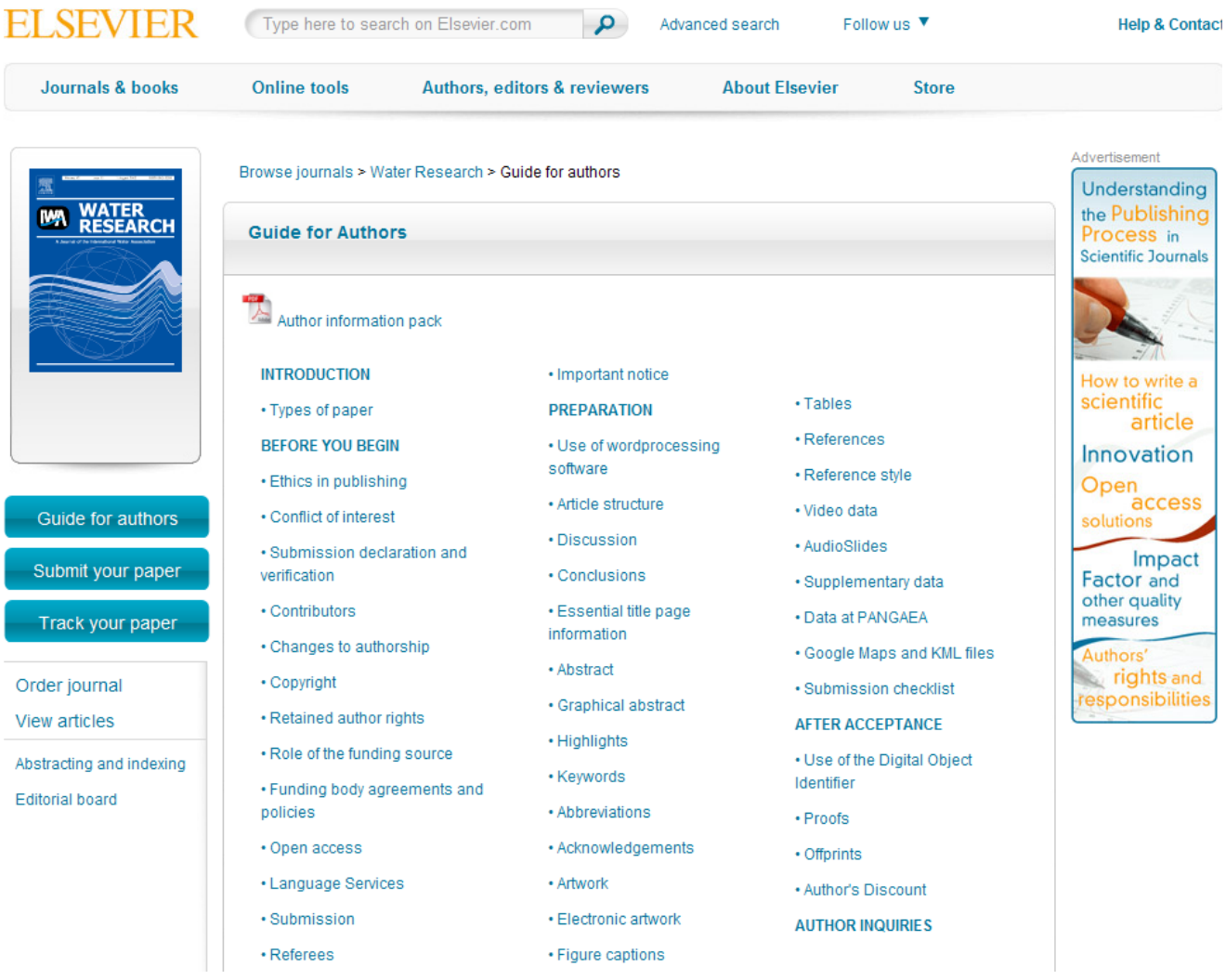
Other informations

Most downloaded/ cited papers



Manuscript submission

- Guidelines for authors



Manuscript submission

- Cover letter

Match with journal scope and aims

Problem relevance and novelty

Dear Editor,

we kindly ask you to consider for possible publication in "**nome della rivista**" journal our research paper entitled:

Effect of solar simulated N-doped TiO_2 photocatalysis on the inactivation and antibiotic resistance of an *E. coli* strain in biologically treated urban wastewater.

The manuscript perfectly matches the aims and scope of "**nome della rivista**" because it is an original, novel and high-impact expected contribution in relation to some fields relevant for the journal. Specifically, N-doped TiO_2 (NDT) photocatalyst was synthesized and characterized to evaluate the improved capacity, compared to commercially available TiO_2 photocatalysts, in photocatalytic disinfection of biologically treated urban wastewater inoculated with an antibiotic resistant *E. coli* strain.

Urban wastewater treatment plants (UWWTPs) effluents are among the main sources of water pollution by antibiotics. The main concern is related to the development of antibiotic resistant bacteria (ARB), which reduce our therapeutic potential against human and animal pathogens. Accordingly, the role of UWWTPs on the fate of antibiotics and ARB is currently under discussion and consequently attracts a lot of attention among scientists and professionals. In particular, the role of UWWTPs in the spread of antibiotic resistance into the environment has not yet fully investigated, and poor information on the role of disinfection processes is available. Accordingly, our investigation of the effect of photocatalytic disinfection process on (i) environmentally relevant antibiotic resistant bacteria (in our work *E. coli* strains selected from UWWTP effluent) and (ii) antibiotic resistance is really new and timely. Moreover, the possibility to effectively use solar radiation for a more sustainable process was evaluated by ...

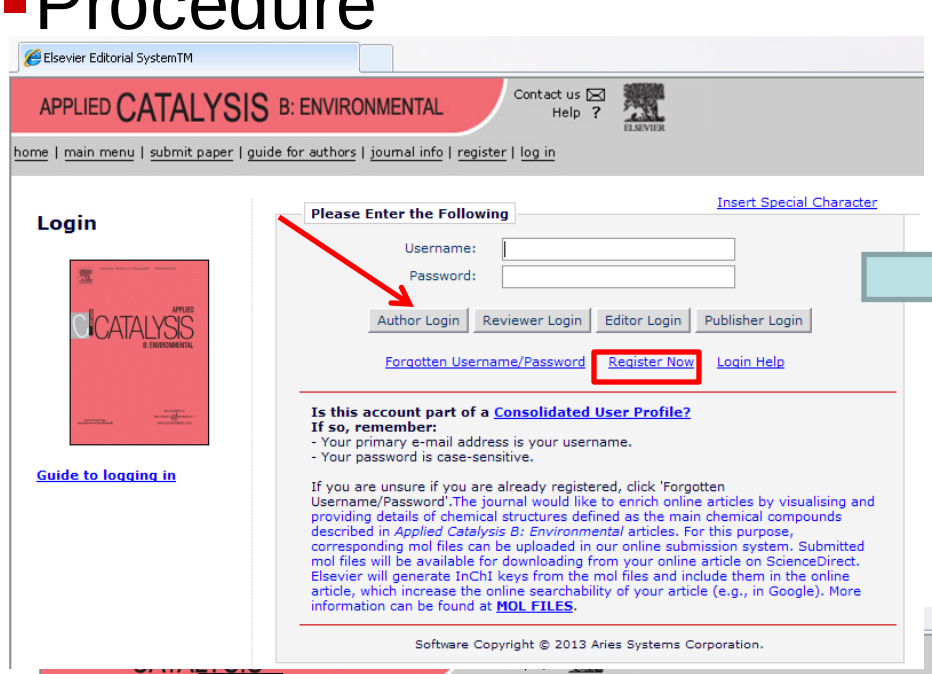
This work has not been published previously - also not in any other language-, it is not under consideration for publication elsewhere, its publication is approved by all authors and tacitly by the responsible authorities where the work was carried out and if accepted it will not be published elsewhere in the same form, or in any other language, without the written consent of the publisher.

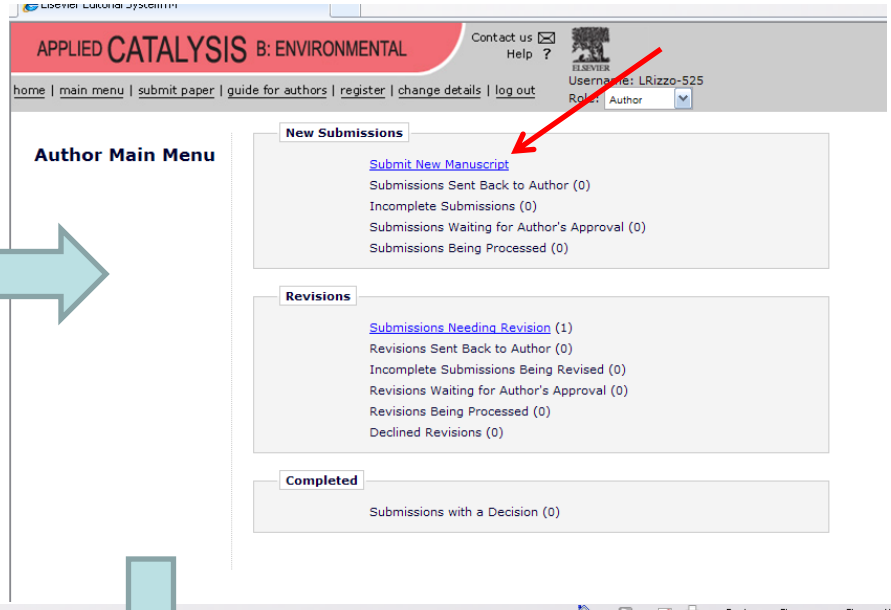
Best regards

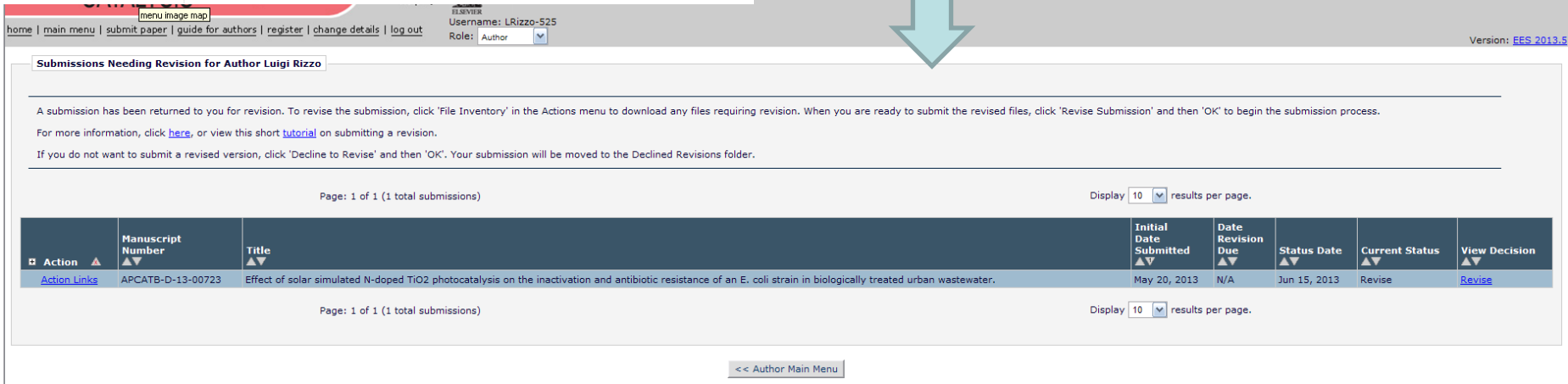
Nome del corresponding author

Manuscript submission

- Procedure

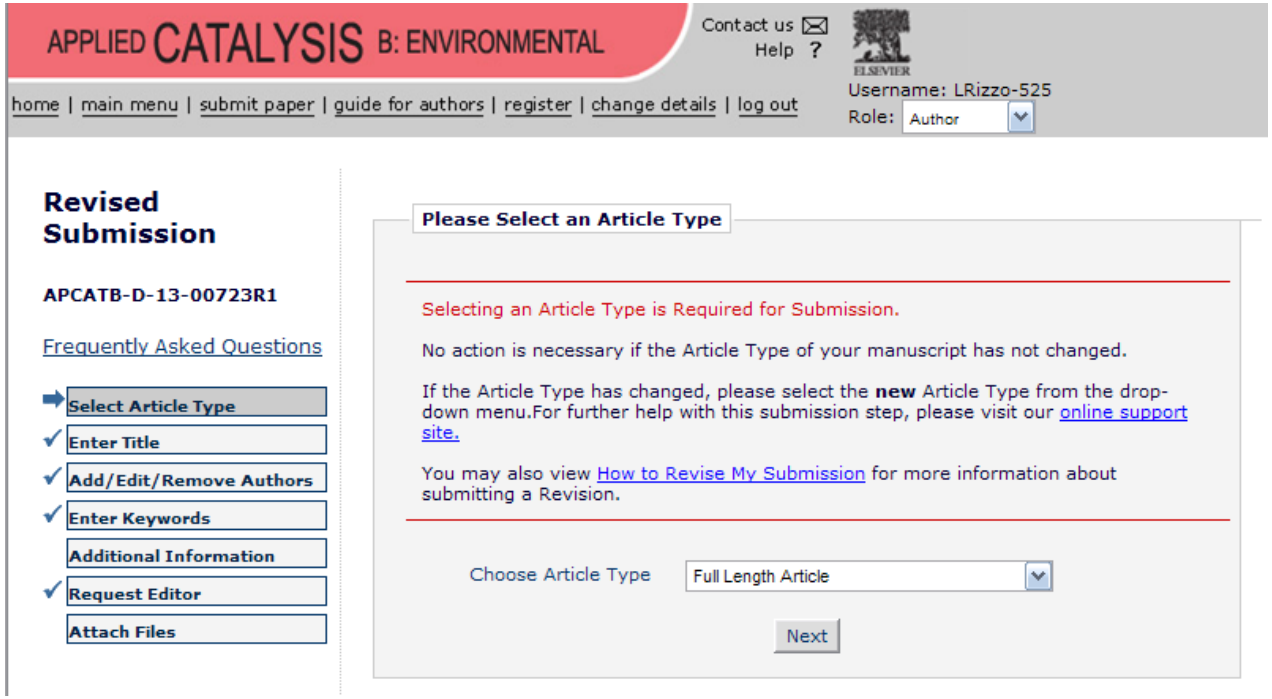






Manuscript submission

- Procedure



Manuscript revision

- Editor and Reviewers
- Manuscript revision
- Reply to Editor and Reviewers

Editor and Reviewers

- Editor
  - ✓Receive from editorial staff manuscripts submitted for possible publication;
  - ✓May eventually reject the manuscript without to send to reviewers (e.g., manuscript does not match aims and scope of the journal, lack of novelty, relevant deficiencies);
  - ✓Chose more suitable reviewers for the submitted manuscript from publisher reviewers database;
  - ✓Typically, ask comment to at least 2 reviewers (normally 3);
  - ✓According to reviewers' comments, make the decision about manuscript publication (e.g., minor revisions, moderate revisions, major revisions, reject etc.);

Editor and Reviewers

- Editor
  - ✓Email from editorial staff;

Nome rivista

Da:
A: "Luigi Rizzo" <l.rizzo@unisa.it>
Data invio: martedì 9 luglio 2013 12.14
Oggetto: A new submission requires reviewer proposals

Photodegradation of organic pollutants in fresh TiO2 as catalysts ....

Author/s
Journal name
Manuscript Ref.

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A new paper has been assigned to you and I now need you to propose 3 or more reviewers.

You will see the above submission in your 'New Assignments' folder.

Please click on the Invite Reviewers Action Link for this submission. This will take you to the Reviewer Selection Summary Page where you can search for reviewers from the system's database.

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Select which classifications you wish to search by and click Submit. Use the tick buttons to choose which reviewers you would like to propose and click proceed at the bottom of the page.

You will be taken to a summary page. Finally, click on Send E-mail on this page to notify the Journal Administrator that you have proposed reviewers using the Associate Editor has Proposed Reviewers e-mail. If the reviewer you wish to use was not already registered, you should enter their information in this e-mail for my attention.

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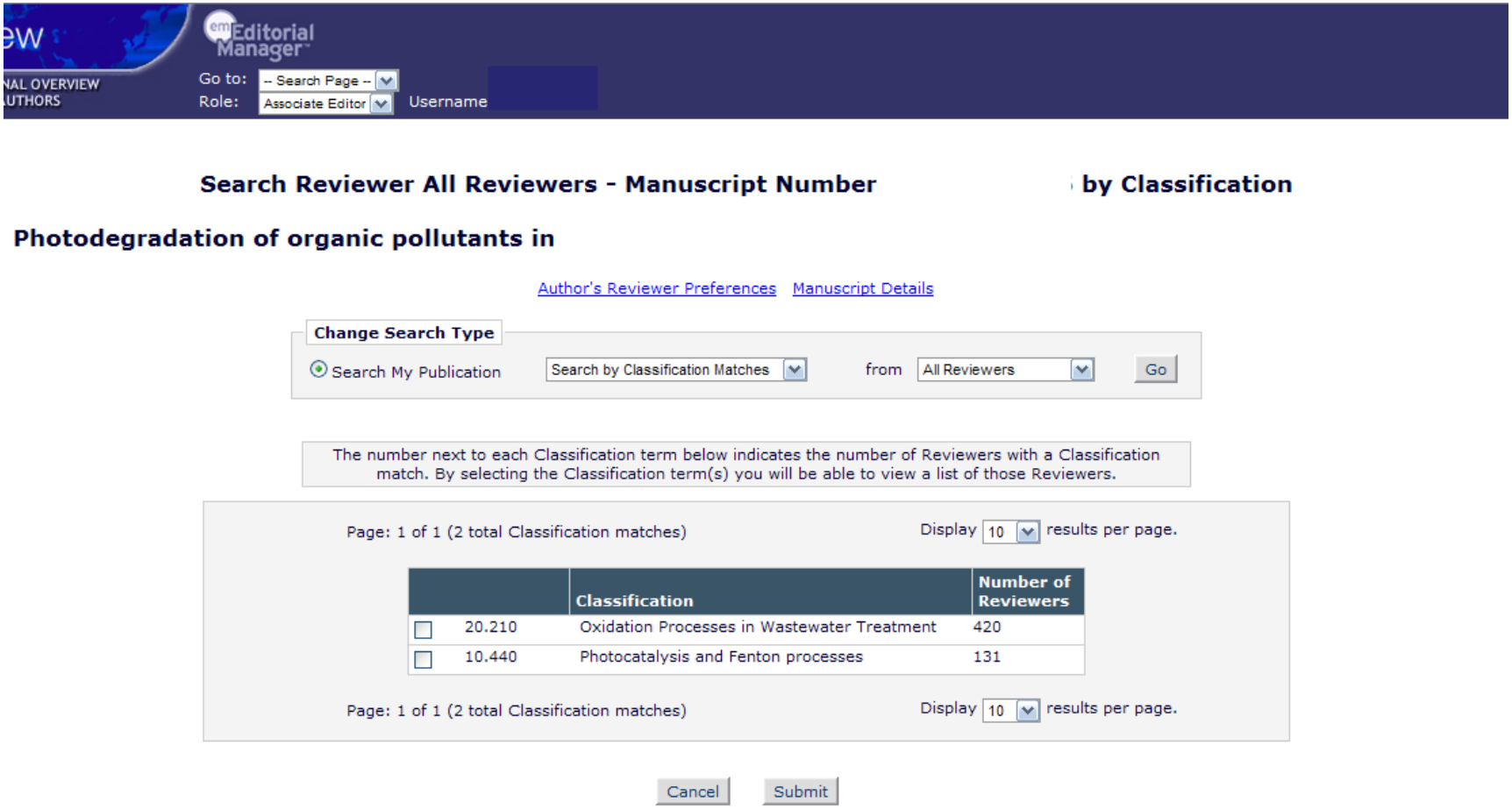
Thank you,

Kind regards,

Journal Editorial Co-ordinator

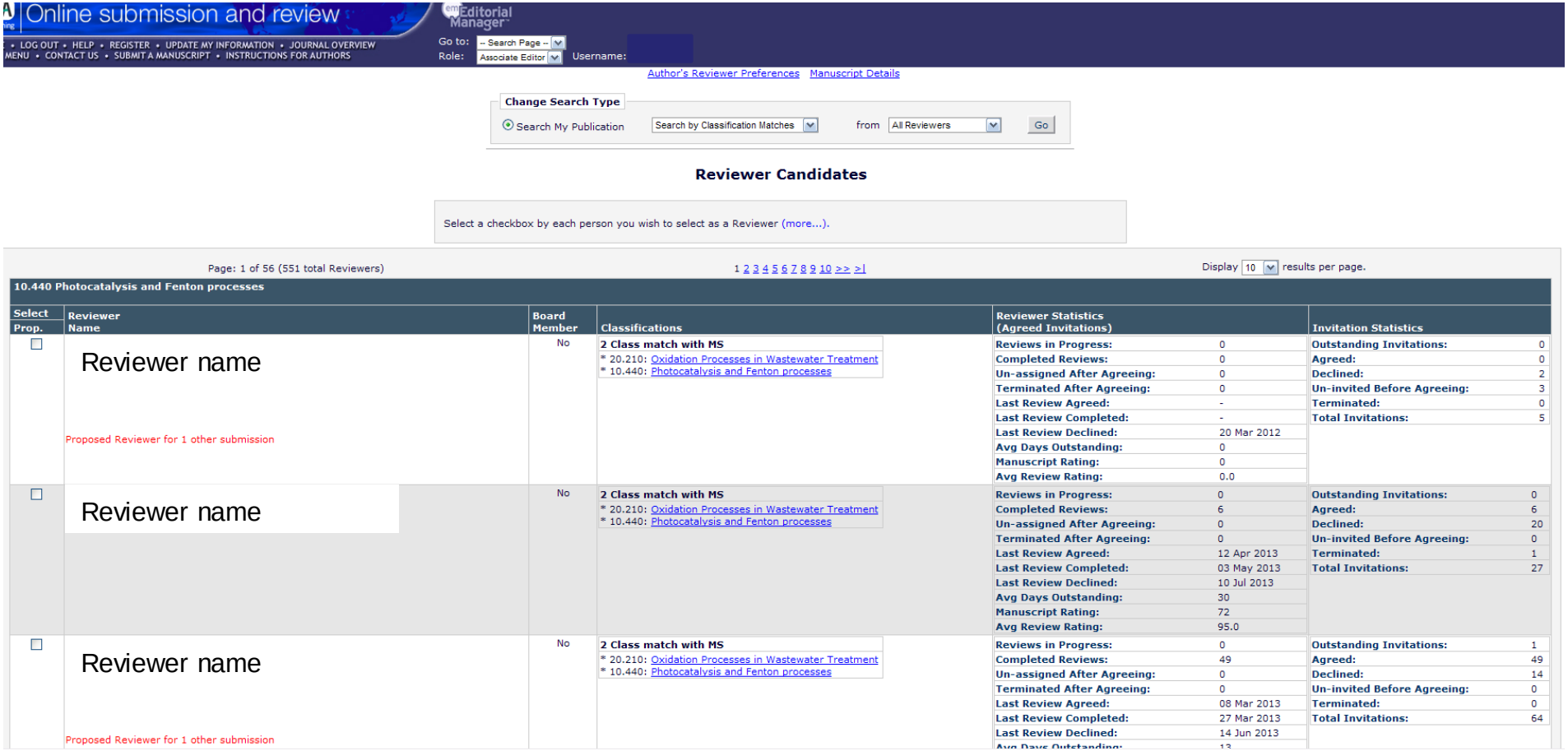
Editor and Reviewers

- Editor: reviewers choice



Editor and Reviewers

- Editor: reviewers choice



Editor and Reviewers

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  - ✓Is invited from the editorial staff on behalf of journal editor (or associate editor) to review the manuscript;
  - ✓Eventually accepts, reviewer commits to review and send back to journal her/his comment by the deadline set by the editorial staff;
  - ✓Make her/his review according to the guidelines/notes of the editor;
  - ✓Reviewer/author motto:

"When you write a paper thinks like a reviewer. If you are acting as reviewer thinks like you were an author!"

By Luigi Rizzo

Editor and Reviewers

- Reviewer
  - invitation (email) letter

Da:
A: <l.rizzo@unisa.it>
Data invio: martedì 26 marzo 2013 20.41
Oggetto: Invitation to review
26-Mar-2013

Journal:
Manuscript ID :
Title : "Dynamic assessmen content of an activated sludge reactor processing hospital effluent"
Author(s):
Corinne; (

Dear Dr. Rizzo:

This manuscript has been submitted for possible publication in . We would greatly appreciate if you would agree to review this manuscript at the request of the Editor.

As ves to provide rapid review and publication for authors, we would be hoping to receive your comments on the manuscript within three weeks.

The abstract is available at the end of this message, to help you determine whether you feel qualified to review this paper. In considering the review, please assess any potential conflicts of interest per Instructions to Authors.

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Sincerely,

Associate Editor

Editor and Reviewers

- Reviewer: format of evaluation report, example#1

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Reviewer Recommendation and Comments for Manuscript Number

Microbial selectivity of UV treatment on effluents of a municipal wastewater treatment plant **secondary**

Original Submission
Luigi Rizzo, Ph.D. (Reviewer 1)

Back | Edit Review | Print | Submit Review To Journal Office

Recommendation: Major Revision **Overall Manuscript Rating (1-100):** 60

Manuscript Question(s):	**Scale**	**Rating**
Please rate on a scale of 1-3 whether the Highlights are a meaningful and accurate representation of the article. 1 = Meaningful; 2 = Not Meaningful; 3 = Not Provided. For more information, see www.elsevier.com/highlights.	[1-3]	1
Please rate on a scale of 1-3 whether the Graphical Abstract is a meaningful and an accurate representation of the article. 1 = Meaningful; 2 = Not Meaningful; 3 = Not Provided. For more information, see www.elsevier.com/graphicalabstracts.	[1-3]	1

Reviewer Blind Comments to Author:
General comment
In spite of topic investigated by the authors is interesting and scientifically relevant as well as worthy of investigation, the manuscript needs some revisions before to be considered for possible publication in WR journal. In particular, (i) some information/data are missing in "material and methods" section, (ii) "results and discussion" paragraph should be revised because some discussion according to data available in scientific literature is questionable and some is speculative and should be avoided. Finally, conclusion section should be improved (it is just a summary of the main results achieved).

Specific remarks/suggestions
1. General: acronyms should be used throughout the text after their first definition, for instance ARB was first defined at pag.4, L60 and should be used at L67, L71, L86 etc.;
2. Introduction, pag.4, L69: put in "of ARB" after "survival";
3. Introduction, pag.5-6, L99-101: the reference quoted (Rizzo et al., 2013) in the reference list is the wrong one (it is a review paper), please change with the right one, which is: Rizzo L., Fiorentino A., Anselmo A. (2013). Advanced treatment of urban wastewater by UV radiation: Effect on antibiotics and antibiotic-resistant E. coli strains. Chemosphere 92, 171-176.
4. Material and methods, pag.7, L133-136: please explain which kind of lamp was used in terms of light emission (UV-C? is the emission spectrum available?)
5. Material and methods, pag.8, L143: please add "respectively" after reclamation;
6. Material and methods, pag.7, L152-156: how did authors selected antibiotic concentrations according to MIC values? MIC values are different depending on specific bacteria (E. Coli, enterococcus etc.), which bacteria they referred to if they investigated generic heterotrofic bacteria? Please clearly explain in the text;
7. Material and methods, pag.8, L164: does "total heterotrofic bacterial count" include both resistant and non resistant bacteria? Please explain;
8. Results and discussion, pag.10, L299: "decreased to 6 CFU/ml", please explain in the text the initial

Reviewer Confidential Comments to Editor:
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Please give a frank account of the strengths and weaknesses of the article, and fill in the below review form where your opinion on important aspects of the article is requested.

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REVIEW FORM
[Y = yes; N = no; H = high; M = medium; L = low]

A 1 Is this contribution suitable for the journal? Y
2 Does this contribution significantly advance the field? Y
3 Is this contribution novel? Y
4 Does it repeat previously published work? N
COMMENTS:

B Overall quality of research: M
COMMENTS: please see comment below (D)

C Are all figures and tables clear and relevant: Y
COMMENTS:

D Additional confidential comments to the Editor:
The authors investigated the effect of UV radiation process on antibiotic resistant bacteria (ARB) in the secondary effluent of an urban wastewater treatment plant (UWWTP). The fate of ARB in UWWTP and the effect of disinfection process on ARB is an emerging and relevant scientific problem. Unfortunately, the manuscript is not well organized, some information/data are missing in "material and methods" section, and "results and discussion" paragraph should also be revised because some discussion according to data available in scientific literature is questionable and some is speculative and should be avoided. Finally, conclusion section should be improved (it is just a summary of the main results achieved).

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Editor and Reviewers

- Reviewer: format of evaluation report, example#2

Manuscript Details

Manuscript ID:

Manuscript Type: Article

Date Submitted: 25-Feb-2013

Manuscript Title: content of an activated sludge reactor processing hospital effluent

Authors:

Summary Ratings

Rate the overall importance of this paper to the field of environmental science and technology (10 - High Importance / 1 - Low Importance):

10

Rate the originality/novelty of the submission (10 - High Originality / 1 - Low Originality):

10

Rate the technical quality of the submission (10 - Excellent Technical Quality / 1 - Poor Technical Quality):

7

Rate the clarity of the submission's presentation (10 - Excellent Presentation / 1 - Poor Presentation):

8

Recommendation

Accept as is; no revisions needed.

Accept, with minor revisions noted.

✓ Accept, with major revisions noted.

Reconsider after major revisions; outcome in doubt.

Comments

Comments to the Editorial Office (optional)

The authors investigated the effect of Hospital wastewater (HW) on conventional activated sludge process for wastewater treatment. It is particularly interesting the matter the authors addressed the effect of HW on the spread of antibiotic resistance into the environment, which is a timely and scientifically relevant issue and make this contribution novel. The manuscript was quite well organized (in my opinion "Discussion" paragraph should be merged into "Results" paragraph to avoid duplication of information and some supplemental materials moved in the paper) and the results well discussed. In my opinion, the manuscript can be accepted for publication in your journal after moderate revisions according to my comments/suggestions to authors. Because of the nature/type of revisions requested, you can check the authors address/reply to my comments and make your final decision, without send the manuscript back to me for second review.

Comments to the Author

Type your review directly into the text box or type "Review attached" (and attach file below), as appropriate.

General comment
The manuscript deals with a timely and relevant issue, that is how Hospital wastewater can affect conventional activated sludge process for wastewater treatment as well as contribute to antibiotic resistance spread into the environment. The manuscript was quite well organized and the results well discussed. In my opinion, the manuscript is worthy of publication after moderate revisions according to my following comments/suggestions.

Specific remarks/suggestions
1. Supplemental material: in my opinion, if no specific limitations occur from "authors guidelines" or editorial staff, some supplemental material is so relevant that should be moved in the text, namely: table S1, table S2, Figure S2 A-B, Figure S7;
2. Acronyms and abbreviations: please spell out acronyms and abbreviation the first time you quote in the text (e.g., EPS, pag.7, L130; taxa, pag.11, L225);
3. Material and methods, pag.7, L135-142: the procedures used to extract DNA from activated sludge (L135-139) and bacteria (L139-142) are different, in particular the authors do not talk about any centrifugation for the second! Please, eventually add further details;
4. Material and methods, pag.7, L135-136: what do authors mean for 15000 g for 10 min? Do they mean 15000 rpm (round per minutes) for 10 min, or 15000r/10min=1500rpm? Please, explain better;
5. Results, pag.10, L197-198: "SVI decreased to...", do authors refer to HE? Please, if so clearly explain in the text;
6. Results, units missing: please, add units to numbers between brackets at: pag.11, L220-221; pag.13, L279, pag.14, L287;
7. Results, pag.13, L274-275: the authors should eventually added "(data not showed)" at the end of the sentence;
8. Discussion section: in order to avoid duplication and repetition of data/information between "Results" and "Discussion" paragraphs, I suggest the authors to either merge them in just one paragraph (Results and discussion) or (if not possible according to journal guidelines) to check and revise discussion section in order to avoid duplication of information compared to "Results" paragraph;

Manuscript revision

- Relevant/significant revisions/remarks
  - ✓Methodological approach, novelty, experimental design, paragraphs framework and contents (introduction, material and methods etc.), results discussion, poor data/results, results and experimental information;
- Form revisions
  - ✓Syntax/English, units format, tables and/or figures format, match between manuscript and authors guidelines;
  - ✓Editorial recommendations about revision submission should be strictly followed (e.g., number and type of files to upload, including reply to reviewers comments).

Manuscript revision

- **Relevant comments/remarks**
- **Form revisions**

Reviewer Blind Comments to Author:

General comment

The manuscript was quite well organized, the problem was well introduced, "material and methods" section well organized, the most of the results well explained and discussed according to relevant and updated scientific literature but for nitrate formation. Moreover, in my opinion it is not clear if the results of disinfection process can be attributed to photo-Fenton or rather to solar-H2O2 process. The risk related to the formation of nitrate was not clearly addressed and "Conclusion" section should be improved to explain this risk with the respect to the consumer. Accordingly, revisions are needed before the manuscript may be considered for possible publication. Specific comments/remarks follow.

Specific remarks/suggestions

1. Keywords: just a suggestion, "photo-Fenton" and "disinfection" already appear in the title and may be exchanged with other relevant keywords (e.g., SODIS, developing countries, salmonella...) to enhance the track-ability your manuscript in the main data-base;
2. Abstract, pag.2, L24: please delete "total coliforms", E.coli is enough (please check all the manuscript);
3. Material and methods, pag.6, L130-131: the official methods where these methods are adapted from and corresponding detection limits should be explained;
4. Material and methods, pag.7, L153-154: was H2O2 removed before regrowth dark experiments? If so, please explain the way. If not, please explain why;
5. Material and methods, pag.7, L151-153: microbiological analysis may be explained in a separate sub-paragraph;
6. Material and methods, pag.7, L163: it is not clear what authors mean for time periods of 8-14, 10-16, 12-18, and authors should better explain this part;
7. Results and discussion, pag.9: 3.1.1 is the only-one subparagraph in 3.1 paragraph, therefore I suggest to include it in 3.1 (eventually, you can change the title as "Lab experiments in a solar simulator: influence of H2O2 concentration on bacterial inactivation");
8. Results and discussion, pag.9, L199-203: can so low iron concentration result in the formation of enough hydroxyl radicals to promote an effective disinfection during solar photo-Fenton process or this efficiency can be rather due to solar-H2O2 process? The authors should clear explain this issue;
9. Results and discussion, pag.9, L208: symbols are already included in figure captions and can be deleted from the text (please, feel free to accept or decline my suggestion);
10. Results and discussion, Figure 2: the joint use of the figures a and a', b and b', c and c', respectively is hard to understand and should be better explained;
11. Results and discussion, pag.14, L314: is "Effective" better than "Efficient" in EDT?
12. Results and discussion, pag.14, L324: table 4 can be deleted and data explained in the text;
13. Results and discussion, pag.16, paragraph 3.2.3: the results of dark experiments (Fenton process) confirm my trouble about efficiency of photo-Fenton process (please, see previous comment #8); therefore, the authors are expected to revise this paragraph according to their reply to my previous comment and comparing their results with data available in scientific literature;
14. Results and discussion, pag.19, L433-435: are nitrite and nitrate concentrations compared to ammonia depletion consistent with a mass balance?
15. Results and discussion, pag.20, L448-450: initial nitrate concentration is really high and photo-Fenton process further increase this concentration, moreover taking into account that nitrate promote methemoglobinemia disease, the authors should clearly talk about this result as an adverse effect of the process;
16. Conclusion, pag.21, L480-481: this part should be to improved by explaining the risk related to the increase of nitrate concentration (methemoglobinemia), according to previous comment.

Manuscript revision

Journal revision/submission procedure

Da:
A:
Data invio: lunedì 14 maggio 2012 10.31
Oggetto: - Editor decision - revise
Re manuscript:
Title: Urban wastewater and a
spreading into the environment.
Authors:
Schwartz
Corresponding author:

Dear

I can now inform you that the reviewers and editor have evaluated your manuscript. As you will see from the comments below and on http://ees.elsevier.com/wr/, publication in its present form is not recommended, and major revision is being requested.

The deadline for revision is 1 month from now, 13 Jun 2012. Please note your paper may be withdrawn if not submitted by the due date.

Please consider the reviews to see if revision would be feasible. For a revised version we require 3 separate items:
1. Revision Notes explaining how and where (citing line number) each point of the Editor's/Reviewers' comments has been addressed. Should you disagree with any part of the reviews, please explain why.
2. A version of the revised manuscript showing the new/changed text using track changes or highlighting (submission item "Revision, changes marked"). To facilitate further review, add line numbers in the text.
3. A clean version of the revised manuscript, also with line numbers.
4. Please remove all files not needed for the new version, but do include all files needed for the new version, and strictly follow the formatting requirements as presented in the Guide for Authors.
Note that for the text source files only are allowed at revision: Word or LaTeX, no PDF. A PDF, however, is allowed for the tracked-changes version.
When submitting the revision, please present any figures, tables etc. as separate files. See the Artwork Guidelines at www.elsevier.com/locate/watres for further file naming conventions, referencing and format issues.
5. Please add a Graphical Abstract to your revised paper, if you had not already done so. This is an illustration summarizing the contents of your paper and able to capture the attention of readers online. See http://www.elsevier.com/graphicalabstracts for examples.
6. Be sure to check that the references cited in the text match those listed in the References section and the other way round, as errors may lead to a significant delay in processing your paper.

To submit a revision, go to http://ees.elsevier.com/wr/ and log in as an author. You will find your submission record under Submission(s) Needing Revision.

I hope that you will find the comments to be of use to you.

Kind regards,

Reply to Editor and Reviewers

Useful advices:

- Make wide use of diplomacy! Bearing in mind that…:
  - ✓Sometime authors may not have a “perfect” answer to reviewer question/remark;
  - ✓Sometime it is better to “agree” about some more form revision …
  - ✓…to make reviewer more “compliant” about some relevant revision;
  - ✓If possible, avoid to ask explanation to reviewer about her/his comment, this may extend review process (so, it could be better to reply in some way);
  - ✓When you disagree reviewer’s comment/remarks, you should support your comment with relevant data/scientific literature.