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## Introducción

- A diferencia de los libros de texto, la publicación de artículos requiere de un proceso de selección/autorización más elaborado: FORMATO, CONTENIDO, ETC.
- Debe ser claro, conciso, reciente y de alta calidad científica
- Debe exponer los resultados de tal forma que estos sean reproducibles
- Es la manera aceptada internacionalmente para la divulgación de los adelantos científicos
- Revisar casos de estudio para mejorar la producción de artículos (aprender de los errores)

## **Objetivos**

- Presentar o divulgar los recientes adelantos obtenidos por desarrollo y/o experimentación
- Obtener el crédito por el nuevo método, técnica y/o descubrimientos desarrollados (referencias, patentes, etc.)
- Contribuir al conocimiento y avance tecnológico
- Contribuir al desarrollo de la Institución y comunidad receptoras
- Favorecer el desarrollo profesional
- Mejorar el perfil profesional del investigador
- Mejorar el perfil profesional del programa de posgrado

# Tipos de artículos

- Research articles
- Review articles
- Case studies
- Commentaries
- Letters to the Editor
- Short reports

### Research Articles

- Los artículos de investigación original contienen nuevos resultados de investigación en el área de conocimento respectiva.
- Los resultados de la investigación incluyen presentaciones en nuevos conceptos, el desarrollo de métodos innovadores, y en menor proporción, se presentan nuevos casos de studio cuyos resultados tienen un impacto en general y contribuyen al avance en el conociento de algún área del conocimiento.

# Review articles (I)

- Las contribuciones de las reseñas no contienen nuevos datos originales, pero resume información existente y sintetiza los resultados actuales. Los manuscritos contienen revisiones críticas del estado del arte con el objetivo de evaluar el conocimiento existente y proveer información de soporte para futuras investigaciones.
- Los autores que quieran enviar un manuscrito con reseñas, generalmente deben contactar al editor previamente.
- Las reseñas son sometidas a revisiones en forma similar a los artículos de investigación original.
- Pueden incluir hasta 30-40 páginas
- Contienen numerosas referencias recientes (100-200).

## Review articles (II)

- Las reseñas son revisadas por pares y proven una vision general de alguna área del conocmiento en particular, dándole al lector una apreciación de la imprtancia del trabajo, un resumen en desarrollo, resultados recientes, y una guía para encontrar la literature relevante.
- La longitud varía; en el caso del IEEE Trans debe ser de, al menos, 19,000 palabras divididas en las secciones apropiadas y contener de 15-20 gráficos.

### Case studies

• Usualmente presentan una mayor intervención relevante al campo de la revista. Manuscritos que contienen evaluaciones rigurosas del proceso y el impacto del studio, así como recomendaciones para el future, generalmente son consideradas favorablemente.

## Commentaries

Son artículos cortos, bien enfocados de interés contemporáneo y usualmente comisionados por la revista. No son mini-reseñas. Un comentario generalmente toma una de dos formas:

- La primera forma es la discusión de un artículo o experimento que ha sido publicado recientemente, o que está por ser publicado y que es suficientemente interesante para garantizar comentarios o explicaciones adicionales. Este tipo de comentario desarrolla/discute aspectos específicos de algún aspecto en particular del área, en vez de enfocarse en toda el área del conocmiento; explica las implicaciones del artículo y lo pone en contexto. Se esperan y reciben comentarios y opiniones siempre y cuando estén basadas en hechos.
- La segunda forma es más editorial y cubre un aspect de lagún tema que es relevante para el enfoque de la publicación. Ejemplos de este tipo de comentarios pueden ser la discusión del impacto de neva tecnología en investigación; también puede ser una discusión de los cambios en los procesos de revision o procedimientos para solicitar fondos para continuar la investigación. Por su naturaleza, esta forma de comentario es más esporádica.

### Letters to the Editor

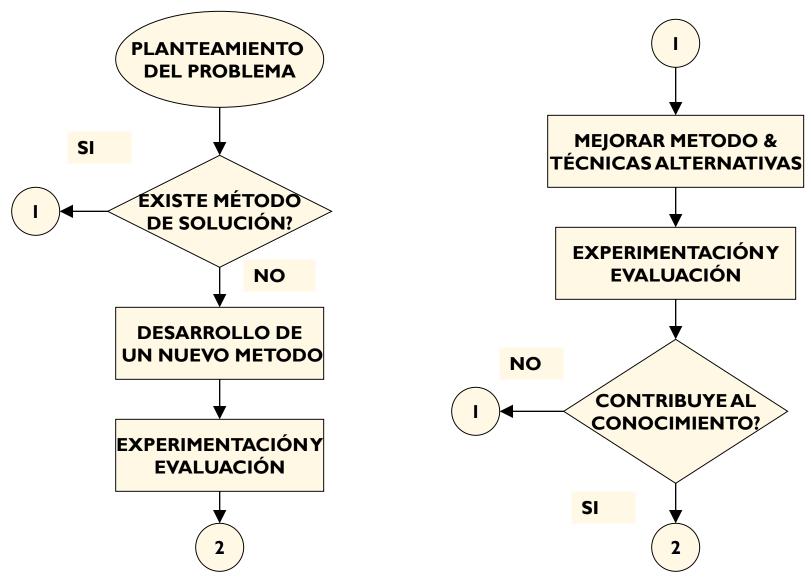
Una carta al Editor generalmente puede ser de varias formas:

- Un re-análisis substancial de algún artículo publicado previamente
- Un artículo que puede ser que no cubre invetigación estándar" pero que sea de interés general para los lectores.
- Un breve reporte de resultados de investigación adecuados para el alcance de la publicación de particular interés para la comunidad.
- Las cartas al editor puede ser editadas para mejorar la claridad o ajustar la longitud y puede estar sujeta a revisión por pares a discreción del editor.

## Short reports

Reportes cortos pueden ser acordes para la presentación de investigación que extiende resultados de investigación publicados previamente, incluyendo el reporte de controles adicionales y resultados que confirman resultados previos bajo diferentes condiciones así como resultados negativos. Los autores deben reconocer claremente cualquier trabajo en el cual basan su información ya sea publicada o sin publicar.

# Procedimiento que lleva a la producción de artículos (1)



### Procedimiento que lleva a la producción de artículos (II) PRODUCCIÓN DE RESUMEN **EVALUAR LA RAZÓN** Y ENVÍO A CONSIDERACIÓN **DEL RECHAZO DEL COMITÉ EVALUADOR** NO SI **RECHAZO POR TEMA APROBADO? INSUFICIENCIA CIENTÍFICA?** (TRABAJAR) SI NO **CORRECCIONESY** SI **RE-ENVÍO A CONSIDERACIÓN RECHAZO POR ESCRITURA DEFICIENTE?** NO NO APROBADO? SI **BUSCAR FORUM APROPIADO**



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# III PUBLICACIÓN DEL ARTÍCULO!!!

# Artículos de conferencias vs artículos en revistas indizadas

CARACTERÍSTICA	CONFERENCIAS	REVISTAS INDIZADAS
Tipo de publicación	Memorias (ISBN)	Journals (ISSN)
Reconocimiento	Bajo a medio (MJL conf)	Alto (MJL)
Medio de difusión	Escrito, Internet	Escrito, Internet
Publicación	Por evento	Periódica
Tiempo de revisión	Corto, fijo	Variable, (hasta años !!!)
Contenido	Avances en investigación y desarrollo tecnológico	Contribución al conocimiento
Severidad (peer review)	Baja-Media	Alta
Número de referencias	5-15	15-200 dependiendo del tipo de artículo
Número de páginas	Fijo (5-10)	Variable, en base a número de páginas o en a número de palabras
Formato	Definido para el evento en particular	Variable (en base a plantillas, por separación de contenido, otros [my paper - my way])

# Observe distribución del título

### AUTHOR'S MANUAL FOR PREPARATION OF MANUSCRIPTS FOR CONFERENCE PROCEEDINGS

Barbara K. Hickernell, Conferences Director
Engineering Foundation
345 East 47th Street
New York, NY 10017

Observe la
presentación de los
autores

### Observe los encabezados

#### **ABSTRACT**

An abstract is required. It should state clearly the objectives of the study and should present salient conclusions in approximately 150 words.

# Observe el espaciamiento y justificación del texto

#### INTRODUCTION

This manual has been prepared in the format that should be used for the preparation of manuscripts.

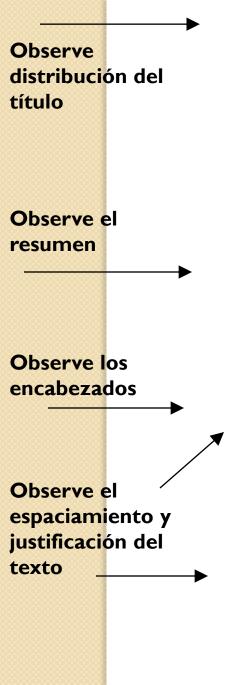
The Proceedings from this Engineering Foundation Conference will be prepared from camera-ready copy received from authors. All copy must be clearly and accurately prepared on a word processor on the good quality plain white paper; however, you must follow the instructions printed on the model paper except that the author's name need not be placed in the bottom right of each page. Pay special attention to the instructions printed on the model paper with regard to placement of the paper's title on the first paper. Follow all other instructions as to length and depth of text and page numbering. Place a full page of text and figures on each page.

Modelo Engineering Foundation.

Use a letter quality or laser printer. DO NOT USE A DOT MATRIX PRINTER. All text must be single spaced. Helvetica 11 has been used in the body of this document and Helvetica 14 bold for the title. Please use a similar font. Double space between paragraphs.

#### **MAJOR HEADINGS**

Major headings are typed in bold capitals. They start at the left-hand margin on a separate line. Skip a line above and below any major headings.



Air Core Imaging in Cyclonic Separators: Implications for Separator Design and Modelling

R.A. Williams<sup>1</sup>, O. M. Ilyas<sup>2</sup>, T. Dyakowski<sup>2</sup>, F.J. Dickin<sup>3</sup>, J.A.Gutierrez<sup>3</sup>, M. Wang<sup>3</sup>, M.S. Beck<sup>3</sup>, C. Shah<sup>4</sup> and A. Rushton<sup>5</sup>

<sup>1</sup> Camborne School of Mines, University of Exeter, Redruth, Cornwall TR15 3SE, United Kingdom

ABSTRACT: The control and stability of the air core and factors affecting the flow split to the underflow or 'heavy' product are two of the least understood aspects in the operation of hydrocyclone and dense medium separators. Existing methods for assessing these factors using conventional and tomographic measurement instrumentation are described. New results obtained using electrical resistance tomography (ERT) are described for a pilot-scale large diameter coal dense medium separator (LARCODEMS). Such data have important implications for the development of: (a) empirical correlations to describe air-core characteristics as a function of operational variables (feed rate, feed slurry viscosity, feed density etc) and their role on separation efficiency, and (b) computational fluid dynamics models of liquid and slurry flow in centrifugal separators.

#### 1. INTRODUCTION

Centrifugal separation of solid and liquid particulates from gas or liquid media is widely employed in chemical and mineral processing [1]. For solid-solid and solid-liquid separation in a liquid phase continuum the two principal types of separator are hydrocyclones and dense medium cyclones. In the hydrocyclone the continuous fluid is water, whereas in dense medium separators (DMS) the continuous phase is a dense fluid such as a suspension of fine magnetite or ferrosilicon [2]. In DMS the apparent density and viscosity of the dense medium can be controlled to allow selective separation of solid particles on the basis of their size and specific gravity. Separation is based on the balance of competing radial forces acting on the particulate phases due to fluid drag and centrifugal action. Figure 1a presents a schematic diagram of a hydrocyclone. The feed of solid particles is introduced in the form of a pressurised slurry and enters the hydrocyclone at a tangent to the upper cylindrical section. The slurry can leave via one of the two exits, either through the apex (or underflow) of the conical section or through the upper orifice (or overflow) passing through an inner cylindrical tube (or vortex finder). Solids are classified according to their size and the density differential between the solid and continuous phase. Larger and denser particles tend to be directed to the wall of the cyclone and then spiral down the outer wall reporting to the underflow. Smaller and less dense particles tend to leave by the underflow.

# Observe la presentación de los autores

Modelo ECAPT

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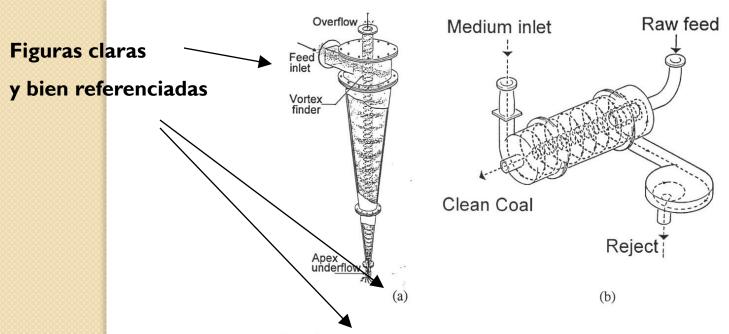


Figure 1. Schematic diagram of (a) hydrocyclone showing principle of separation, and (b) LARCODEMS dense media separator.

### Buen uso de referencias

Liquid leaves through both orifices, the volume split being determined by the relative diameters of the underflow and overflow diameters and, most importantly, the diameter of the air core. The flow split to the underflow is typically 10-50 % of the feed. The fluid flow inside the hydrocyclone is extremely complex and is generally characterised in terms of plots of the radial, axial and tangential velocities [3]. Under normal operation the vortex flow within the hydrocyclone body generates an air core along the entire centre line of the body. The separation can be controlled by selection of appropriate cyclone geometry (cone angle, diameter, orifice diameters etc.) and operational conditions (flow rate, concentration of solids in feed). Typically body diameters vary from 10mm up to 200mm.

DM cyclones operate in a similar fashion to hydrocyclones and find application for the separation of iron ore from sticeous gangue, coal from shale, diamonds from kimberlite and a variety of metal and plastics materials recycling operations. Another variation of the DM cyclone is based on a wholly conical body shape with two feed ports and two or more product exit ports. A number of commercial separators of this type are in common use. This paper will be restricted to discussion a large diameter coal dense medium separator (LARCODEMS) developed by British Coal [4,5] shown in Figure 1b. The industrial significance of this and other large diameter separators (up to 1.2 m diameter, 3.6m length) is that such units have a high throughput and can accommodate a wide size range of particles in a given feed slurry. For instance, a 1.2m diameter separator may treat 250 tonnes per hour of raw coal-shale particles between 0.5-100mm in size. The productivity of these devices is impressive however this requires good control of the

### Modelo ECAPT

# Observe las conclusiones: concisas, directas, bien estructuradas

## Dar el reconocimiento apropiado

### Un tipo de formato de referencias

algorithm. The mean resistivity and the standard deviation of the resulting values is then used for controlling the feed inlet. Air core size and position are also monitored to determine the presence and/or the stability of the air core. Thus, the cylone plant could be operated maximizing throughput and minimizing risk of blockage.

#### 5. CONCLUSIONS

The use of EIT for multiphase flow imaging has been described. Data were reconstructed using qualitative and quantitative image reconstruction algorithms. The qualitative method showed more reliability when it comes to complex particle distributions. The Modulus of the measured signal can account for errors introduced by the frequency dependance of the mixture, compared to using only the Real or Imaginary components. Using higher frequencies for current excitation produced better images compared to those obtained using low (10kHz) frequency current excitation. A case study is presented for a 44 mm hydrocyclone operating with silica particles. Air core measurements were performed for various operating conditions (0% up to 35% solids concentration, 0.4 up to 0.60 dm<sup>3</sup>s<sup>-1</sup> feed flow rate). The particle distribution inside the hydrocyclone has been presented for each operating condition, showing the build up of particles towards the wall of the separator. It has been shown the the air core size has a close relationship with the type of underflow discharge: Spray-type discharge implies the presence of an air core, whereas roping-type discharge suggests the disappearance of the air core. The air core size as a function of the feed rate and particle concentration has also been investigated. The results are congruent with earlier reported work and can have important implications for (i) separator design, (ii) CFD simulations and (iii) process control. Further work is concerned with the investigation and implementation of a suitable control scheme aided by tomographic measurements applied to hydrocyclone and LARCODEMS pilot-scale plants.

#### 6.- ACKNOWLEDGEMENTS.

JAG acknowledges the financial support of CONACYT. The authors are grateful to Prof. Richard Williams for allowing access to the hydrocyclone rig in order to carry out the experiments.

#### REFERENCES

- Rietema K. (1961). Performance and Design of Hydrocyclones. General Considerations. Chem Eng Sci, 15 298-302.
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- [3] Rietema K. (1961). Separating Power of the Hydrocyclone. Chem Eng Sci, 1961, 15 310-319.
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- [8] Davidson M.R. (1988). Numerical Calculations of Flow in a Hydrocyclone operating without an air core. Appl. Math. Modelling, 12 119-128.
- Williams R.A., Ilyas O.M., Dyakowski T., Gutiérrez J.A., Dickin F.J., Wang M., Beck M.S., Shah C.L. and Rushton A. (1994). Air Core Imaging in cyclonic Separators: Implications for Separator Design and Modelling. Process Tomography - A Strategy for Industrial Exploitation- 1994.

# Formato de un artículo para revista indizada

- TITULO
- AUTORES (CON DIRECCIONES)
- RESUMEN (150-250 PALABRAS)
- PALABRAS CLAVE (3-5)
- INTRODUCCION (DE I/2 A I PAGINA)
- DESARROLLO
- EXPERIMENTACION Y PROCEDIMIENTOS
- RESULTADOS
- EXPLICAR RESULTADOS (Discussion)
- CONCLUSIONES
- AGRADECIMIENTOS (POR FINANCIAMIENTO)
- REFERENCIAS

### Puntos Clave

- USAR TIPO DE LETRA APROPIADO
- DEFINIR ENCABEZADOS, SUB-ENCABEZADOS
- FIGURAS Y TABLAS
- EVITAR EL USO DE FOTOGRAFIAS DE BAJA RESOLUCIÓN!
- EVITAR NOTAS ESPECIALES Y NÚMEROS AL PIE
- ECUACIONES CLARAMENTE NUMERADAS Y EXPLICADAS
- DECLARAR PERMISOS
- USAR PALABRAS CLAVE APROPIADAS
- LONGITUD MAXIMA: 10 PAGINAS (VERSIÓN FINAL) [RECOMENDADO, DEPENDE DE LA PUBLICACIÓN]

# **EJEMPLO**

### Artículo WARM

- I.- Revisar Instrucciones
- 2.- Revisar el documento compilado
- 3.- Revisar el documento final

# Caso de estudio 01 ¿Qué salió mal?

"Therefore, the new educational program intends to increase the involvement of students in higher education programs, as well as educating in research. This requires that teachers are also trained in research, and encouraged to carry out research projects. Under the current guidelines, students are no longer required to produce a thesis for obtaining the degree. This is of great concern, since one of the previous requirements for granting the degree was the involvement of students in a research project and subsequent production of a thesis. To overcome this obstacle, a requirement was embedded in the curriculum, so that it is necessary to develop and complete a research project. Local guidelines were implemented to asses the development of the project. Progress is evaluated twice per semester by a group of four teachers, and the results are registered and reported. The score is based on an advance report and oral presentation. Thus, it is very important that students can produce a quality technical report. Since it is recognized that students are admitted into ITM without prior research experience and proper training for producing reports, a departmental strategy was introduced to help them develop the appropriate skills."

## Rechazo por redacción deficiente

The use of indefinite (vague) references appears frequently throughout the manuscript. For example, indefinite reference occurs when the words "this", "these", and "those" are used as the subject of a sentence and there is no word or phrase following the word that gives clear connection to the item or thought being referenced. Use of the word "it" as the subject of a sentence also constitutes indefinite referencing, because the reference is to some item or concept that may or may not have previously appeared in the manuscript. Frequent use of indefinite references requires the reader to stop and determine the specific item or concept being referenced.

## Caso de estudio 02

# Rechazo por Inglés deficiente

The review consists of two parts. The first part of the review considers only the grammar and syntax errors found. The second part focuses on the content and the presentation of results.

A) Syntax and grammar errors.

There are several syntax and grammar errors. The following are just a few examples. Please make sure that the grammar and syntax are corrected prior to re-submission.

# Rechazo por Inglés deficiente (continuación)

- I.- Page 4, lines 14 to 19: Delete the second stop sign. The word "information" is incorrectly used; rewrite the statement "These informations are important...", for instance using: "The results are important...". Apply to all the manuscript as necessary.
- 2.- Page 4 line 41: Change the word "ignorance" to "lack of knowledge" or "insufficient a priori data", since it is unlikely that a large scale design is implemented by ignorant people.
- 3.- Page 4, line 53: The use of indefinite (vague) references appears frequently throughout the manuscript. For example, indefinite reference occurs when the words "this", "these", and "those" are used as the subject of a sentence and there is no word or phrase following the word that gives clear connection to the item or thought being referenced. Use of the word "it" as the subject of a sentence also constitutes indefinite referencing, because the reference is to some item or concept that may or may not have previously appeared in the manuscript. Frequent use of indefinite references requires the reader to stop and determine the specific item or concept being referenced. To avoid the use of indefinite references on line 53, change the beginning "In this respect..." to "Therefore...". Likewise, apply all the necessary changes to the text as required, for instance, on page 6, lines 34, 36, and 41; page 7, line 36; page 10, line 21 and 24; page 11, line 1; page 13, line 58; page 14, lines 12 and 41; page 15, lines 28, 44 and 56. Also make all necessary changes to the word "these" as required.



- 4.- Page 5, lines 9 to 12: Rewrite sentence. It is not clear what the authors intend to state. Perhaps an appropriate sentence would be along the lines of: "In order to improve particle settling efficiency, a number of strategies have been reported, such as installation of baffles and porous plates [REFERENCES]..."
- 5.- Page 5, lines 24 and 25: Specify what characteristic was investigated. For instance" Fan et al. [2] studied the effect of including baffles..."
- 6.- Page 5, lines 26 to 29: Rewrite statement; for instance: "They observed that the solid concentration profile in the flow region near the baffle, was similar to that obtained without the baffle."
- 7.- Page 5, lines 29 to 34: Unless the reported information is accompanied by experimental data, definitive statements are to be avoided. Therefore, simulation results are described as "the results suggest...". Consider changing the sentence to "In contrast, the solid concentration increases sharply in the outer region of the baffle, which suggests that the solid phase congregates rapidly at the end of the baffle."

# Rechazo por Inglés deficiente (continuación)

- 8.- Replace all incidences of the expression "We would like to..." with an appropriate statement, to convey the importance of that particular activity. For instance, in page 6, lines 19 to 21 and lines 34 to 36, the authors could point out the importance of the analysis to be carried to comply with the main objective of the work.
- 9.- Page 6, line 41: Change "is be used" to "is to be used"
- 10.- ... And so on for the rest of the manuscript. Please read carefully and correct all the grammar and syntax errors.
- II.- Please read carefully through the references: in reference [10] "enviironmental" should read "environmental"; in reference [14] "Compairson" should read "Comparison"
- 12.- Please label all the figures appropriately, including scale units.
- 13.- In general, it was difficult to read through the manuscript trying to determine the difference between the result of the simulation (and the authors' own conclusions) and what corresponds to previously reported work. It seems that much of the effort was put into demonstrating that the results agree with previously reported work, continuously referencing other authors' findings.



Again, please read carefully (and rewrite) the entire manuscript, considering the comments above.

B) Content and presentation of results.

# Rechazo por Inglés deficiente (continuación)

In my opinion, it appears as though the work is largely based on [11], there are many simplifications and there is a lack of details related to the simulation process; for instance there is no account for the buoyancy effect. Zhou and McCorquodale (1992) omitted the buoyancy correction terms in the k-e as a first approach. Lyn et al. (1992), did not include the buoyancy term in the e equation on the basis of work done by Simonin et al. (1989), but did include it in the k equation. Brennan (2001) also studied the buoyancy modification effect. Slip velocity was also neglected. Perhaps a more elaborate model could have been used in order to provide recommendations for physical implementation.

Considering the results presented, there are many aspects that could have been addressed by the authors. For instance, figure 6 shows the velocity vectors of fine particles (Class I); it appears as though the first baffle has very little effect (or none at all).

The manuscript suggests that the manuscript is the result of only a small modification compared with Reference [9]. If that is the case I fail to see the point of splitting the work in to papers. Without reading part I, I cannot say for sure that the work presented in part II is (or is not) basically the same. Perhaps the results of both works could be reported in one paper.

# Rechazo por Inglés deficiente (continuación)

Since the manuscript considers a full-scale longitudinal sedimentation tank, the results should point out clearly the importance of the work for physical implementation. There is conflicting information; for instance, on page 16, lines 24 to 29, the text suggest that after all the simulation work was completed, there is no clear indication so as to what is the appropriate number of baffles to be used. In addition the authors dismiss the importance of the work by stating that installing a large number of baffles is unfeasible. Later, on page 17, lines 34 to 36, the authors indicate that the results could be important for cost-effective design. I believe that the authors must stress the importance of the work, and make the appropriate recommendations for the construction of the tank.

In summary, despite the fact that there are many syntax and grammar errors, and the simplifications made, I believe the authors can still convey the importance of their work. One of the reasons is that, presumably the work is intended to be used in a full-scale sedimentation tank. Specifically, the authors should explain, clearly, how the results can impact, benefit, or contribute to the cost-effective design of the case study.

## Caso de estudio 03

# Rechazo por plagio

Given that large portions of the submitted text appear exactly (or almost exactly) in previously reported work by other authors, my recommendation is to reject the paper on the grounds of incorrect referencing and plagiarism. In addition, the submitted work suggests that the described method is a novel contribution: however the same method has been presented in 2002. I have included a comparison of the text found in the authors' work and in other author's papers.

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The possible scientific contribution of the submitted work is overshadowed by incorrect referencing and large portions copied from previously reported work. At best, It seems as though the submitted paper is a case study in which previously used methods where used.

In summary, my recommendation is REJECT on the basis of

- A) Insufficient Scientific merit/contribution
- B) Incorrect Referencing
- C) Plagiarism

Unfortunately I fail to see how this work can be considered, since a large portion of the text has been copied form elsewhere. The authors are recommended to withdraw the paper.

# Caso de estudio 04 - plagio

Unless the paper entitled "XXXXX XXXXX XXXXX" by "YYYYY YYYY and ZZZZZ ZZZZZ" is intended for a joint publication between the GGGGGG FFFFFF Journal and the HHHHH KKKKKK Journal, the paper is rejected on the grounds of multiple submissions. The material presented is suspiciously close to previously reported work by the authors and no references are given in the reference list. Only the title of the submitted paper is changed, but the contents are literally the same. Since the material has been presented, scheduled to be presented, and published by GGGGGG FFFFFF I have included a review of the "GGGGGG FFFFFF Publication Services" to highlight the possible violations to copyright infringement. In addition, I also have included the copyright transfer policy of HHHHHH KKKKKK Journal.

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In summary, the authors are highly encouraged to WITHDRAW the paper from consideration by the HHHHH KKKKKK Journal. Should the authors wish to continue with the submission process, then the novel contribution of the work, and references to previously reported work must be clearly stated in the paper. Should the authors offer a clear explanation of the novel contribution of the work, supported by appropriate referencing, I am prepared to offer a full review as soon as possible.

## Caso de estudio 05

### Reviewer I

Control of a Pilot-Scale Solid-Liquid Separation plant Using Electrical Impedance Tomography Measurements

J.A. Gutierrez-Gnecchi, E. Marroquín-Pineda,

This is an interesting paper that provides an overview of a novel control strategy for what is described as a pilot-scale solid-liquid separation plant. I would recommend that it is published following minor modifications. No details on the scale are provided but based on the photographic evidence in Figure I(c) it could be argued to be closer to lab-scale than pilot—scale, however, this is a minor point. A general comment about the references; I am surprised that only I is from the past I0 years despite this being an active research area. I also feel that this one recent reference — I5 — is out of context — does it really show the evolution of lab-based prototypes to real industrial applications?

References 8 and 16 look suspiciously similar including identical page numbers. The capture for Figure 3 describes (a) and (b) whereas I could only see a single Figure 3

Section 3.1 – it would seem sensible to reference the following work: "Previous research has shown that images obtained with an EIT system can be used for measuring air core size and solids distribution. In addition, it was shown that measuring the air core size can be correlated with the angle of discharge and separation efficiency."

## Caso de estudio 05 (continuación)

Reviewer I (continuación)

The paper would benefit from a nomenclature.

There are some syntax errors:

#### Section 2:

"Therefore, the separator is chosen to be a dense medium separator- type (Figure Ic), so that a regular water pump and turbine flow meters can be used to measure de feed."

### Section 3.3

"In dynamic operation in necessary to consider recent observations......"

"If the detected value is falls within the specified range...."

### Section 4:

"Figure 8 shows a summary of the operation of the plant over a period of 100 samples." Should this be Figure 9?

## Caso de estudio 05 (continuación)

### Reviewer 2

Review of paper by Gutierrez-Gnecchi.

The paper presents an interesting application of electrical impedance tomography where the tomographic image is used in a control system. EIT systems usually are attached to a process or application as a stand alone unit providing information on the process. Including the tomography system inside a control loop is a good demonstration of its effectiveness which the results support.

### corrections:

- Caption of Table 1. Should this be 2.66 GHz, IGB RAM, instead of 2.66 MHz.
- The text on figure 8 is in Spanish, it would be clearer if it was changed to English or a translation added.
- Reference [3]: The 1994 ECAPT meeting was held in Oporto, not Porto
- Reference [13]: Change 'Sistem' to 'System'

I would recommend publishing the paper with some minor corrections

## Caso de estudio 05 (continuación)

### Reviewer 3

(in addition to comments made below, the reviewer has also made some electronic notes on the PDF version of the manuscript)

### Comments:

My reading of the paper is that the authors have used some readily available hardware and software components and self-assembled an EIT system in a pilot plant, implemented some established methods for image reconstruction and control logic, mainly for teaching demonstration purposes. Scientifically, there is nothing new.

The authors have touched, but then glossed over, the issue of accuracy and its implications. Use of interpolation of any kind does not increase the level of accuracy of a reconstructed tomogram. In fact, it may well distort the image and hide the truth or give misleading impression! In my experience, directly processing the tomogram (whether the original or smoothed version) cannot yield accurate result in terms of air core size. Williams and co-workers have used a model-based, boundary element method to reconstruct air core. See refs cited below. However, this is an off-line processing technique and thus difficult to employ for real-time control.



### Reviewer 3

For the purpose of control, the control target (in this case, the air core size and position) need not be measured absolutely accurately, so long as the relationship between the control parameter (e.g., vale opening level) and the target is predictable and well-defined, especially in a feed-back control loop. It should be pointed out that the relationship between the actual feature (air core) size and the imaged feature size is non-linear and position dependent. Thus, over-correction or under-correction is expected to happen. The paper fails to address this problem in an explicit and clear manner.

Overall, I do not think the paper contains sufficient new scientific contributions worthy of publication in a learned journal.

Williams RA, Jia X, West RM, Wang M, Cullivan JC, Bond J, Faulks I, Dyakowski T, Wang SJ, Climpson N, Kostuch JA, Payton D (1999) Industrial monitoring of hydrocyclone operation using electrical resistance tomography, Min. Eng., 12(10):1245-1252.

West RM, Jia X and Williams RA (2000) Parametric modelling in industrial process tomography, Chem Eng J, 77(1-2): 31-36.



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