THE RESEARCH ON HUMIDITY TO THE AEROSOL CONCENTRATION IN A VALLEY

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ABSTRACT

Abstract must be on a separate page. It should not exceed 200 words and should give the subjects and conclusions of the article and all results of general interest.
Keywords: Urban Environment, Engineering design, Animal Protection, System,

GENERAL GUILDLINE

TITLE PAGES

The title page should include the title, the authors and their affiliations, and the address to whom correspondence should be sent. There is included the running title and the keywords according to the authors.

AUTHOR NAME, AFFILIATION, AND EMAIL

The name of the author is capitalized with Time New Roman in 12-point, and different authors are marked with superscripts of a, b, c. Affiliation uses italic 12-point Time New Roman, email uses italic 12-point Time New Roman.

CORRESPONDENCE AUTHOR

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LANGUAGE

The language of the proceeding of International Conference on Sustainability Management (ICSM 2021) is exclusively English. Contribution will be considered

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only if they have not been and are not to be published elsewhere.

FONT & INDENT SPACE

Write the first paragraph of each measure from the left, and write the second paragraph with two spaces.

Manuscripts must be submitted in triplicate, typewritten and Times New Roman Font as shown in this template.

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The manuscripts are subjected to preliminary evaluation by the Editorial Board, and after selecting and receiving the referees consent they are forwarded to the appointed referees. The period for evaluation is about three days to one week. In case of negative report, the manuscripts are processed to other referees to ensure the fairness and objectivity of the review process.

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The article is divided into the following section.

1. Aims
2. Background
3. Experiment
4. Results and Discussions
5. Conclusion

6. Reference

The title of the article should be in 12-point, all capitals, and bold. Use 12-point words for the headline, all capitals, and use 10-point words for the subtitles, all capitals. The main text is written in 12-point characters.

AIMS (OR AIMS AND BACKGROUND)

The author can combine the AIMS and BACKGROUND into one section or write in separate section. The contents of these two unit are described as follows.

Aims – should include brief and clear remarks outlining the specific purpose of the work.

Background – short summary of the background material including numbered references.

BACKGROUND (OR LITERATURE REVIEW)

What is the main background for writing this article? A review of related references can also be placed in this section.

All references should be typed on a separate section and numbered as well as listed in the order as first cited in the text. They should be indicated by superscript Arabic numerals in the text. The example is as follows:

To conclude, welfare is not only for people, but also includes animals[1]. A system of social security providing assistance to those who are financially difficult is absolutely necessary[2].

Abbreviations of the journal titles should follow the style used in Chemical Abstracts, or Web of Science. Please carefully check the form of the Abbreviations of the journal.

RESEARCH METHOD (OR EXPERIMENT PARTS OR EXPERIMENT)

The experimental part should be sufficiently detailed (but concise) to permit exact reproducing of the work.

Try to describe as clearly as possible, so it can also have more subsection as the following, however, please use 10-point English capital letters for the titles of these next chapters, as follows.

MODEL STRUCTURE

MATHEMATICAL EQUATION

NUMERICAL SCHEME

EXPERIMENTAL METHOD

RESEARCH FRAMEWORK

ASSUMPTIONS

STASISTICAL ANALYSIS

The research results are best organized in the form of graphs and tables to make it easy for readers to understand. The description of the representation of the figures and tables is as follows.

TABLES

Each of the table bears a brief title and typed on a separate space, they should be numbered in Arabic numerals. The tables should be placed after the text of the its description.

An example of the table is as follows. The table should be in the form of three-line table style. If the content of the table is too complex, or the number of columns is too many therefore, it cannot be displayed upright, then, the horizontal typesetting can also be used, as the following.

Table 1. AUTAREP specifications

Parameter	Specs.	Description
Kinematics	No of joints	5
	No of DOF	6
	Range Of Motion (ROM)	wrist pitch: 260° wrist roll: 360° elbow: 172° shoulder: 90° waist: 310°
Physical	locomotion	articulated links
	actuation	6 DC servo motors
	weight	33 kg
	dimensions	base – ϕ220×180(H) mm arm length – 220+220 mm
Sensing	vision	camera (logitech)
	force	FSR attached at gripper
	position	optical encoders
Performance	position precision	±1.5 mm
	position repeatability	± 1 mm
	movement speed	100 mm/s (max)
	payload	1 kg
	action radius	580 mm (largest)

Table 2. Modern control strategies to control manipulators

Control technique	Advantages	Drawbacks
CTC	• computational expense is greatly reduced after specifying the trajectory • feedback gains and energy consumption is small	• accurate model is required • robustness is not guaranteed in presence of parameter uncertainties and un-modelled dynamics
SMC	• matched uncertainties can be handled effectively • trajectories become model independent in sliding phase • low sensitivity towards uncertainties in the plant's parameters	• chattering existence due to discontinuity of the control law • robustness lacking in reaching phase
DOBC	• provides estimation of friction and unwanted torques • each joint of robotic manipulator can be controlled individually • reduces the cost of the system by eliminating sensor requirements	• high disturbances may saturate the torque • tradeoff between high and low frequencies tuning of filter • friction computation may be complex
MPC	• limitations on actuators can be handled • easily tunable • changes in model can also be handled properly	• extensive no of coefficients are required • control that is modelled for output disturbance, cannot handle input disturbance well
LQR	• full state feedback can be utilized to compute optimal input signal • guarantees stability margins • design procedure for MIMO system is same as that for SISO systems	• system can become unstable in presence of mismatch uncertainties caused by model inaccuracy, plant and nonlinearities • observer design for states measurement makes the system complex
H_∞ control	• control technique can handle complexity, model inaccuracy and severe performance specifications • multivariable systems are better controlled. • rectifies the cross-coupling that occurs between systems	• the designed controller is only optimal for the defined cost function • torque saturation is not properly handled • deep mathematical understanding is required
PBC	• passive nature of the robot guarantees asymptotic stability • energy reshaping of the system leads toward desired stability properties • desired dynamics can be achieved even with the system remained nonlinear • addition of damping term ensures passivity of output	• tuning of control gains may be difficult • passivity could only be proved through error mapping • hamiltonian can be a complex function

FIGURES

Figures and captions should be grouped together at the end of manuscript with figures numbered consecutively and captions typed on separate space. Figures (graphs) should be marked by pencil on the margin or at the back with the name of the first

author and the running title. The SI system of the units will be accepted without editorial change.

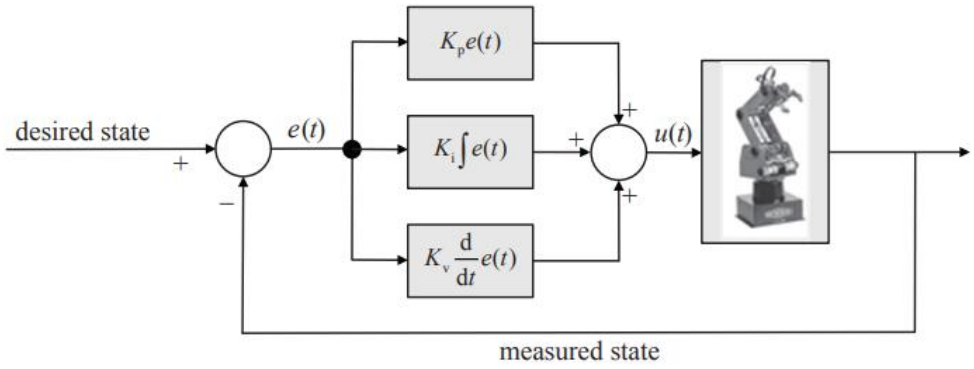

Fig. 2. Functional block diagram of a PID-controlled manipulator

EQUATIONS

Mathematical equations should be written using standard typesetting software. And to be numbered according to the order of appearance.

Every symbol that appears in the mathematical equation must be clearly stated in the text in the next paragraph. As explained in the following case.

The initial reaction for the formation of photochemical smog is a chemical reaction in which nitrogen oxide (NO) absorbs ultraviolet rays (waves 2900-4300Å) under sunlight exposure and decomposes into a chemical reaction of nitrogen oxide (NO) and native oxygen (O). The chemical reaction formula is:

$$NO_2 + hv \rightarrow NO + O(^3P) \quad (1)$$

This approach leads to a form where turbulent fluxes are expressed as an additional diffusion term:

$$\partial \bar{c}/\partial t = -\nabla(\bar{v}\sim\bar{c}) + S_c + D_c\nabla^2 \bar{c} + \nabla(K\nabla\bar{c}), \quad (3)$$

where K is a diagonal matrix of the eddy diffusivities K_x , K_y, K_z. Due to the different atmospheric turbulent processes in horizontal and vertical directions, K can not be assumed to be isotropic. Furthermore, while D_c is a property of the chemical species, K is a property of the flow, thus it varies in both space and time.

RESULTS AND DISCUSSION

The Results and Discussion section should indicate the logic used for the interpretation of data without lengthy speculations. Authors submitting material on purely theoretical problems or on a new experimental technique might include it in this part.

There are following limits for the respective papers (including text, all illustrative materials and references):

short communication or long abstract – 2–4 pp (characters, with spaces),

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reviews – 16 pp (characters with spaces).

The Editorial Board will strictly follow the contribution length in view of the over-accumulation of scientific papers and the restricted volume of each book. Contributions within the stated lengths will be published free of page charges. In case of exceeding length of the contributions are introduced page charges (up to 100 USD)

CONCLUSIONS

The Conclusions section is a short summary of the main achievement of the manuscripts. Please focus on your research question and provide the appropriate inference from your study.

ACKNOWLEDGEMENT

The following is a typical example of Acknowledgement.

This paper presents the research results obtained within the framework of a project TR–35021, financially supported by the Ministry of Education and Science of the Kingdom of Thailand.

REFERENCE

The References section should be typed on a separate sheet and numbered as well as listed in the order as first cited in the text. They should be indicated by superscript Arabic numerals in the text.

The author’s name should be capitalized, and the journal name should be in English Abbreviations letters. Abbreviations of the journal titles should follow the style used in Chemical Abstracts or Web of Science. Sequence and punctuation of references should be as the follows:

1. N. MANOLOV: Tribology. Nauka, Sofia, 1993.
2. K.-D. BOUZAKIS, N. MICHAILIDIS, S. GERARDIS, G. KATIRTZOGLOU, E. LILI, M. PAPPA, M. BRIZUELA,
A. GARCIA-LUIS, R. CREMER: Impact Resistance of Doped CrAlN PVD Coatings Correlated with Their Cutting Performance
in Milling Aerospace Alloys. J Balk Tribol Assoc, 14 (3), 292 (2008).
3. A. A. CERIT, M. B. KARAMIS, F. NAIR: Review on Ballistic Tribology. J Balk Tribol Assoc, 12 (4), 383 (2006).
4. D. PETRESCU, N. N. ANTONESCU, M. NEASCU: The Modulation of the Dynamic Processes at the Thermal Spraying with High-speed Flame. Bulletin of Petroleum–Gas University of Ploiesti, LVIII (3), Technical Series, 49 (2006).
5. F. ZIVIC, M. BABIC, N. GRUJOVIC, S. MITROVIC, D. ADAMOVIC, G. FAVARO: A Comparison of Reciprocating Sliding at Low Loads and Scratch Testing for Evaluation of TiN (PVD) Coating. J Balk Tribol Assoc, 18 (1), 80 (2012).

MORE REFERENCES AS THE EXAMPLE

1. S. TANASIJEVIC: Tribologically Correct Design. Faculty of Mechanical Engineering, Kragujevac, 2004 (in Chinese).
2. Gw. STACHOWIAK, Aw. BATCHELOR: Engineering Tribology. Elsevier Butterworth Heinemann, Oxford, 2006.
3. Ta. STOLARSKI: Tribology in Machine Design. Elsevier Butterworth-Heinemann, Oxford, 1999.
4. A. RAC: Lubricants and Machine Lubrications. Faculty of Mechanical Engineering, Belgrade, 2007 (in Japanese).
5. B. STOJANOVIC, N. MILORADOVIC, M. BLAGOJEVIC: Analysis of Tribological Processes at Timing Belt's Tooth Flank. Tribol in Industry, **31** (3&4), 53 (2009).
6. B. STOJANOVIC, L. IVANOVIC, M. BLAGOJEVIC: Friction and Wear in Timing Belt Drives. Tribol in Industry, **32** (4), 33(2010).
7. H. CZICHOS: Tribology – A Systems Approach to the Science and Technology of Friction. Lubrication and Wear. Elsevier, Amsterdam, 1978.
8. J. GLISOVIC, R. RADONJIC, D. MILORADOVIC: Experimental Method for Analyzing Friction Phenomenon Related to Drum Brake Squeal. Tribol in Industry, **32** (4), 28 (2010).
9. M. BABIC, S. MITROVIC, I. BOBIC, F. ZIVIC: Wear Behavior of Composites Based on ZA-27 Alloy Reinforced by Al2 O3 Particles under Dry Sliding Condition. Tribol Let, **38** (3), 337 (2010).