



An Open Access Journal

Editor-in-Chief

Prof. Shouu-Jinn Chang

Prof. Chien-Hung Liu

Message from the Editor-in-Chief

The unique journal *Inventions* is different from all other journals. Many scholars spend their lives publishing research papers in many different journals, but most of these journals do not help scholars collate and analyze their results or assist in promoting them to a relevant industry. However, *Inventions* will help authors not only to publish their papers in the journal, but also to promote their research results to industry and assist them in realizing the purpose of technology transfer. In the future, *Inventions* will help authors to evaluate their technology license fees based on the valuation theory and approaches and also help authors to show their patents and technologies on a network transaction platform.

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More Information about This Journal

Aims and Scope

Inventions is an international, peer-reviewed journal that publishes original scientific research of significance concerning innovation/invention, or patent-based/extended/reviewed research papers in all fields of science, engineering and product development processes. We encourage authors to give special attention to patent-based/extended researches and short technical reports regarding transferring technology.

The scope of *Inventions* includes:

- Patent-based/extended/reviewed inventions in engineering
- Innovation/inventions in systems
- Innovation/inventions in devices
- Innovation/inventions in methods
- Innovation/inventions in composition
- Innovation/inventions in processes
- Innovation/inventions in products
- Innovation/inventions in design
- Innovation/inventions in advanced technologies

| Journal website: mdpi.com/journal/inventions



Special Issue

Innovation and Inventions of Electro-Optical Materials and Devices and their Application

Guest Editors:

Prof. Dr.

Shoou-Jinn Chang

Institute of Microelectronics
& Department of Electrical
Engineering, Center for
Micro/Nano Science and
Technology, Advanced
Optoelectronic Technology
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Prof. Dr. Chien-Hung Liu

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Deadline for
manuscript submissions:
30 June 2016

Message from the Guest Editors

Dear Colleagues,

The development of electro-optical and photovoltaic technology and its influence on the economics of such installations over the next few years is likely to establish which of the energy technologies will dominate for decades to come. The opportunity to share and discuss these crucial developments in a timely and influential forum is important. We invite investigators to contribute original research articles, as well as patent-based reviews, to this Special Issue. Potential topics include

Innovation and inventions of electro-optical materials

Innovation and inventions of electro-optical devices

Advanced materials for electro-optical and photovoltaic device application.

Advanced materials with new optical and photoelectric properties.

Nanoparticles, nanowires, or nanosheets for electro-optical devices

Device structures and processing techniques.

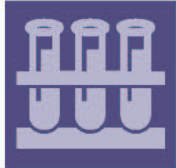
Sensing device

Prof. Dr. Shoou-Jinn Chang

Prof. Dr. Chien-Hung Liu

Guest Editors

| Special Issue website: mdpi.com/si/5477



More Information about This Journal

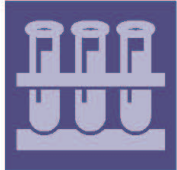
Aims and Scope

Applied Sciences (ISSN 2076-3417) is an international, peer-reviewed, open access journal, published quarterly by MDPI AG, Basel, Switzerland.

Applied Sciences provides an advanced forum on all aspects of applied natural sciences, including applied physics, applied chemistry, applied biology and applied engineering. It publishes reviews, research papers and communications. Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the length of the papers as the full experimental details need to be provided so that the results can be reproduced.

The journal is covered by leading indexing services, including the Science Citation Index Expanded (*Applied Sciences-Basel* recorded in Web of Science) and Chemical Abstracts.

| Website: <http://www.mdpi.com/journal/applsci>



An Open Access Journal

Editor-in-Chief

Prof. Dr. Takayoshi Kobayashi

Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant, fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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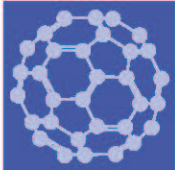
Thorough Peer-Review

Coverage by Leading Indexing Services

SCIE-Science Citation Index Expanded (Thomson Reuters)

No Space Constraints, No Extra Space or Color Charges

No restriction on the length of the papers, number of figures or colors



An Open Access Journal

Editor-in-Chief

Prof. Dr. Thomas Nann

Message from the Editor-in-Chief

Many materials with size features in the lower nanometre size range are characterised by new, mesoscopic properties (actually the definition of nanomaterials). Synthesizing and studying these nanomaterials leads to exciting discoveries, and sometimes new applications. The vision of *Nanomaterials* is to publish the best findings on all aspects of nanomaterial science to the broadest possible audience. We are dedicated to quality and fairness and it is my pleasure to see the continuing success and increasing impact of the journal.

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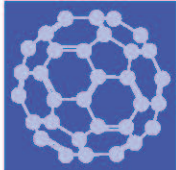
2 months on average in 2014 from submission to publication

Coverage by Leading Indexing Services

SCIE-Science Citation Index Expanded (Thomson Reuters),
Scopus (Elsevier)

No Space Constraints, No Extra Space or Color Charges

No restriction on the length of the papers, number of figures or colors



Special Issue

Nanomaterials for Flexible and Stretchable Devices: Synthesis, Processes, and Applications

Guest Editors:

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Deadline for
manuscript submissions:

31 May 2016

Message from the Guest Editors

Dear Colleagues,

Nanomaterials have played a significant role in the improvement of flexible/stretchable electronics for display, sensors, energy storage, conversion, and harvesting devices. We invite authors to contribute original research and review articles covering current progress on the nanomaterials for flexible and stretchable devices.

The current Special Issue will take account of topics include, but are not limited to:

Synthesis and characterization of nanomaterials

Design and preparation of novel nanostructured surfaces

Flexible/stretchable percolation network composed of
low-dimensional nanomaterials

Lithography-free techniques for nanomaterial processing

Nanomaterial-based printing techniques

Nanomaterial-based flexible/stretchable electronics

Other applications related to nanomaterials for devices

Post-processing to enhance mechanical stability of flexible/
stretchable devices

Guest Editors

| Special Issue website: mdpi.com/si/5443

成大智財科技股份有限公司

Chengda Intellectual Property Tech. Co. Ltd

- 負責人 郭添源 博士
- 成立時間 2003年
- 公司定位 在知識經濟的潮流中，提供最優質的智財加值整合服務
- 核心領域 智財加值六大領域



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Qcount是台灣第一套以系統化方式提供企業/智慧財產價值服務之線上工具，遵循國際IACVA評價理論及我國評價準則公報建置，以豐富的產業參數資料庫、友善的操作介面，讓您線上快速掌握企業/專利/商標/著作權價值



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- 報告查詢、企業/智慧財產計價諮詢、政策及產業資訊提供

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➤ 服務實績

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- 國家電影資料館
數位電影典藏商業授權機制及計價系統
- 中央研究院生物多樣性中心
TELDAP授權加值先導平台計畫

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Step 1: 基本資訊

評測對象為本公司之子公司，主要經營項目如下：

項目	單位	金額
2017年營業額	萬元	7,000,000
2017年淨利潤	萬元	1,200,000
2017年研發投入	萬元	1,000,000
2017年市場推廣投入	萬元	500,000

Step 2: 歷史收益

根據歷史數據，分析收益趨勢：

年份	營業額	淨利潤
2015	5,000,000	800,000
2016	6,000,000	900,000
2017	7,000,000	1,200,000



企業評價系統 適用於增資或併購等商業/股東交易等評估目的



Step 1: 基本資訊

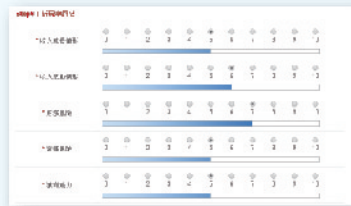
根據基本資訊，分析企業概況：

項目	金額
營業額	10,000,000
淨利潤	2,000,000
研發投入	1,500,000
市場推廣投入	800,000

Step 2: 營運狀態

根據營運狀態，分析企業表現：

項目	金額
營業額	10,000,000
淨利潤	2,000,000
研發投入	1,500,000
市場推廣投入	800,000



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授權價值

根據專利車授權價值計算結果

授權金：**2,574,196元** 權利金：**1.12%**

產生評價報告

企業價值

根據企業整體價值計算結果

股權價值(每股)：**21.64元** 企業價值：**141,486,583元**

產生評價報告

快速產出專屬評價報告書



成大智財科技股份有限公司 Chengda Intellectual Property Tech. Co. Ltd

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台南公司：704台南市小東路147巷22弄31號 TEL: (06)237-8296 FAX: (06)208-1959

公司網址：www.centerip.com.tw 客戶服務信箱：center.ip@msa.hinet.net



Social Event		
30 th November (Mon.)	Gathering venue (before 9:00): Sun Moon Lake Teacher's Hostel 1F Lobby	
	09:00-11:00	Lake Tour by Boat (Gratis), each of stops are Shuishe Pier, Xuangguang Pier and Ita Thao Pier. 1. In Shuishe, it is the location of a famous scenic commerce street. Hanbi Hiking Trail and Meihe Garden are nearby. Also you can find the bike rental shop, have a bike tour to Xiangshan Recreation Plaza. 2. Xuangguang Pier, there are lots of temples around. Such as Xuangguang temple, Syuentzang Temple and Ci En Pagoda. Each of them has their own unique differences and scene views. 3. Ita Thao Pier is the most special one. Once known as Dehua Village, this is the main Thao settlement. Traditional Thao performances and cultural exhibitions are offered here by Thao aborigines, as well as a shopping area full of Thao atmosphere.
	Gathering venue (before 11:30): Sun Moon Lake Teacher's Hostel 1F Lobby	
	12:00-13:30	Lunch at Jindu Restaurant.
	14:00-17:00	The conference arranges the visiting of Chung Tai Chan Monastery to feel the atmosphere of oriental temple with professional English tour by the monk who lives there.
	17:00-18:00	THSR Taichung Station/National Chung Hsing University

Agenda

Date	Time	Event				
27 th November (Fri.)	15:00-18:30	Registration (Hotel Check-in Assistance) (Sun Moon Lake Teacher's Hostel 1F-Conference Center)				
	18:30-	Welcome reception (Sun Moon Lake Teacher's Hostel B1-Taoliyuan Restaurant)				
Date	Time	3F Room A (Assembly Hall)	2F Room B (3 rd Meeting Room)	1F Room C (1 st Meeting Room)	1F Room D (2 nd Meeting Room)	1F Poster Room (Recreation Center)
28 th November (Sat.)	8:30-9:40	Registration (Sun Moon Lake Teacher's Hostel 1F-Conference Center)				
	10:00-10:30	Opening Ceremony (Sun Moon Lake Teacher's Hostel 3F-Assembly Hall)				
	10:30-10:40	Introduction to New Journals Inventions (Sun Moon Lake Teacher's Hostel 3F-Assembly Hall) Introducer: Prof. Shoou-Jinn Chang				
	10:40-10:50	Introduction to Applied Sciences (Sun Moon Lake Teacher's Hostel 3F-Assembly Hall) Introducer: Prof. Chien-Hung Liu				
	10:50-11:25	Keynote Speech I, (Sun Moon Lake Teacher's Hostel 3F-Assembly Hall) Title: Qcount: Intangible Asset Valuation System for Evaluating Technology License Fees Chair: Prof. Chien-Hung Liu Speaker: Dr. Tien-Yuan Kuo				
	11:25-12:10	Keynote Speech II, (Sun Moon Lake Teacher's Hostel 3F-Assembly Hall) Title: Comparative Analysis in Convective Heat Transfer Enhancement by Nanofluids Chair: Prof. Huel-Chu Weng Speaker: Prof. Manca Oronzio				
	12:10-13:20	Lunch Break (The Lalu B1-The Oriental Brasseries)				
	13:30-16:00	Session A1	Session B1	SPINTECH -Thesis Award	SPINTECH -Thesis Award	SPINTECH -Thesis Award
	16:00-16:15	Coffee Break (Sun Moon Lake Teacher's Hostel 1F-Recreation Center)				
	16:15-17:00	Keynote Speech III, (Sun Moon Lake Teacher's Hostel 3F-Assembly Hall) Title: Modeling, Control, and Scientific Computation for Complicated Engineering Problems Chair: Prof. Chih-Jer Lin Speaker: Prof. Yun-Hua Li				
	17:00-17:45	Keynote Speech IV, (Sun Moon Lake Teacher's Hostel 3F-Assembly Hall) Title: Laser-based material processing and electronics fabrication Chair: Prof. Ming-Tsang Lee Speaker: Prof. Daeho Lee				
	17:45-17:55	SPINTECH Technology -Thesis Award (Sun Moon Lake Teacher's Hostel 3F-Assembly Hall)				
	17:55-18:10	Group Photo (Sun Moon Lake Teacher's Hostel 3F-Assembly Hall)				
	18:30~20:30	Banquet (The Lalu 1F-Lalu Garden)				
29 th November (Sun.)	09:30-12:00		Session B1	Session C1	Session D1	Poster 1 (10:00-10:40) Poster 2 (10:40-11:20) Poster 3 (11:20-12:00)
	12:10-13:20	Lunch Break (The Lalu B1-The Oriental Brasseries)				
	13:30-15:30		Session B2	Session C2	Session D2	
	15:30-15:45					
	15:45-17:45					

Forewords



On behalf of the organizing committees, all program chairmen would like to welcome all of you to Nantou, Taiwan for 2015 International Conference on Computing and Precision Engineering & 2015 International Conference on Inventions collocated with 2015 SPINTECH Technology Thesis Awards. The conference is organized by TAIWAN SOCIETY of INTELLEAGENT INSTRUMENT INVENTIONS, SPINTECH PRECISION MACHINERY CO. LTD., NATIONAL CHIN-YI UNIVERSITY of TECHNOLOGY, NATIONAL CHUNG HSING UNIVERSITY, CHIENKUO TECHNOLOGY UNIVERSITY and NATIONAL KAOHSIUNG UNIVERSITY of APPLIED SCIENCES and also sponsored by Multidisciplinary Digital Publishing Institute (MDPI). We

would like to express our sincere appreciation for their supports for the conferences. I would also like to promote a new journal Inventions (ISSN 2411-5134) and broadcast the journal Applied Sciences (ISSN 2076-3417) in this conference and invite you to submit high quality papers to these journals in MDPI.

The aims and scope of the conferences and thesis awards on computing and Inventions is to make researchers focus on patent based and computing researches. An invention is a solution to a specific technological problem and is an improvement upon a machine or product, or a new process for creating an object or a result, which also could achieve a completely unique function or a radical breakthrough. However there is a very thin line between brilliant innovation and absolute failure, as some of these inventors famously found out or even face with the problems of insufficient funds. Therefore patent based researches are a form that offering a way to apprehend the ideas and advance on the projects immediately, rapidly by the successful and practical results of predecessors. We expect the conferences to be a platform for successful patent inventors to share their experiences in inventing with all participants. At the same time, the conferences also aim to gather and show high quality papers concerning the discovery of completely unique functions or results while even go further to advance the frontiers of science and extends the standards of excellence established by the conferences and “Inventions” to readers. With many discussions based on patent, these conferences and “Inventions” would inspire more in all levels.

The conference has received 245 submitted papers from 15 countries, whereby 145 papers have been selected by the committees to be included within the proceeding. These papers on various topics are divided into ten oral sessions and three poster sessions and presented in several parallel sessions in the conference. To all members of the Technical and Organizing Committees and reviewers, we would like to take this opportunity to thank all of them for their tremendous efforts to organize this conference and awards successfully.

At last, I would like to thank all of you for your participation. The program committee not only organizes keynote speeches, invited speeches and technical sessions, but also a special banquet to give the warm welcome to our guests. We look forward to having a successful conference, and we hope that all the attendees will have an enjoyable stay in Taiwan.

Chien-Hung Liu

Program Chairman of ICCPE2015 & ICI2015

Forewords



First of all, I should like to express my sincere thanks to all of you for participating in this International Conference on Computing and Precision Engineering (ICCPE) collocated with SPINTECH Technology Thesis Awards, the venue for which is Sun Moon Lake, Nantou, Taiwan.

ICCPE continues a tradition of bringing together researchers, academics and professionals from all over the world, experts in computing and engineering sciences.

The conference particularly encouraged the interaction of research students and developing academics with the more established academic community to present and to discuss new and current work. Their contributions helped to make the Conference as outstanding as it has been. The papers contributed the most recent scientific knowledge known in the field of Engineering and Nanotechnology, Biotechnology, Material, Energy, Control System, Information and Communication, Computing Technology, and Key Industrial Technologies.

In addition to the contributed papers, four invited keynote presentations were given: by Prof. Oronzio Manca of the Second University of Naples of Italy, who spoke about comparative analysis in convective heat transfer enhancement by nanofluids, by Dr. Yunhua Li of the Beijing University of Aeronautics and Astronautics of China, who spoke about modeling, control, and scientific computation for complicated engineering problems, by Prof. Daeho Lee of Gachon University of Korea, who spoke about laser-based material processing and electronics fabrication and by Dr. Tien-Yuan Kuo of the President of Chengda Intellectual Property Tech. Ltd. Co. who spoke about systematization of technology valuation.

These Proceedings will furnish the scientists of the world with an excellent reference book. I trust also that this will be an impetus to stimulate further study and research in all these areas.

We thank all authors and participants for their contributions.

Cheng-Chi Wang

Program Chairman of ICCPE2015 & ICI2015

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- Chih-Jer Lin, National Taipei University of Technology, Taiwan
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Organization

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- Liang Pan, Purdue University, USA
- David T.W. Lin, National University of Tainan, Taiwan

ICCPE&ICI 2015 Keynote Speeches – I

28th November (Saturday) Keynote Speeches

“Comparative Analysis in Convective Heat Transfer Enhancement by Nanofluids”



Prof. Oronzio Manca

Department of Aerospace Engineering and Mechanical Engineering
The Second University of Naples, Italy

Heat transfer enhancement determines the need for new and innovative coolants with improved performance. The novel concept of "nanofluids" has been proposed as a route to surpassing the performance of heat transfer fluids currently available. Several investigations have revealed that the thermal conductivity of the fluid containing nanoparticles could be increased by more than 20% for the case of very low nanoparticle concentrations.

All literature is focused on the theoretical, experimental and numerical study of thermophysical properties and convection of nanofluids, but the modern design concept for a thermal system, pursues not only the enhancement of heat transfer performance, but also requests the minimal power requirements. However, what constitutes enhancement in convective heat transfer in nanofluids is subject to interpretation. According to the established correlations for turbulent and laminar convective heat transfer, the heat transfer coefficient depends on the thermophysical properties and flow parameters. The question of anomalous enhancement is important, because a significant deviation among the data would signal the presence of some nanoparticle-specific heat transfer mechanisms that make nanofluids behave in a fundamentally different way from homogenous fluids.

In any case, enhancement of the heat transfer performance, usually, must be achieved at the expense of power input and this is also the case of nanofluids. In fact, in the study of nanofluid convection, there is the recurrent question of where is the position of the trade-off between the increase in heat transfer and pressure loss. When working with nanofluids, it is of great importance to determine the optimal concentration to use and most convenient particles dimension to utilize. It therefore seems clear that further research is required in order to fully understand the behavior of nanofluids as well as to quantify the extent of their potential use in engineering applications. The optimal trade-off between heat transfer and power input requirement becomes a major issue in the design of a thermal system.

Different performance criteria are usually employed in the evaluation in the comparison between thermal and mechanical performances of nanofluids by a first and a second

ICCPE&ICI 2015 Keynote Speeches – II

28th November (Saturday) Keynote Speeches

“Modeling, Control, and Scientific Computation for Complicated Engineering Problems”



Dr. Yunhua Li

Professor of Mechatronics and Hydraulic Control Division 303
(Department of Mechatronics) School Automation Science and Electric
Engineering Beijing University of Aeronautics and Astronautics

The progress and development in computing science and computer technology provides a new way for the solution of complicated engineering problems. This talk will deals with using modeling, control, and scientific computing to give the solution for the complicated problem.

Firstly, the relative fundamental theory and algorithm, infrastructure, and solution steps to solve the complicated problem by using modeling and scientific computing method will be discussed.

Secondly, combining five typical engineering practical examples, the problem formulation and the solving procedure will be given and exhibited. The proposed solution methodology includes the distributed computing and control in the networked configuration, modeling and simulation for complicated physic-coupling system such as thermal tunnel and space-station life-supporting system, multi-objective optimization for power distribution system. The five application examples are as follows:

- Software steering trapezium and networked control for large scale of transporting vehicle with multi-axle driving and multi-mode steering used in the high speed railway construction;
- Modeling and computer control of fuel oil and temperature control of thermal tunnel;
- Fault identification of power supply system of high speed railway using nonlinear dynamics method;
- Modeling and collaborative simulation of the environment control and life support system of the space station in China;
- Advanced optimization algorithm for intelligent power distributing and delivery system with the distributed electric supplies such as wind-power generator and solar-energy photovoltaic cell array.

Thirdly, the practical application effects of five practical examples are provided and the application experiences will be given for sharing.

Finally, the methodology and realization steps to solve the complicated engineering problem by using software computing will be summarized.

This talk will also offer an opportunity for the software computing solution to complicated problem exchange among delegates and participants from theory to engineering practice. Attendees will find

thermodynamics law analysis. Generally, to characterize the energetic or thermal performance of a fluid flowing in a specific device can be employed the performance evaluation criterion (PEC) based on an energetic global approach. PEC allows to compare heat transfer rate to pumping power. Another criterion can be given by the ratio between the Nusselt number (Nu) and the Euler number (Eu) which represents a measure of pressure loss due to pumping effort to achieve that heat transfer. However, a modern approach for the optimization of a thermal system is based on the second law of thermodynamics. Entropy generation analysis offers a rigorous physical framework to solve the above mentioned problems. Particularly, the entropy generation is used as the parameter for evaluating the efficiency of the system. The system with minimum entropy generation is considered as the optimal design. Study on entropy generation and minimization is essential since viscosity of nanofluids increases with nanoparticles volume fraction.

In the presentation will be compared results carried out with the different approaches with reference to laminar and turbulent convective heat transfer in ducts and impinging jets.

Experience:

Member of - **American Society of Mechanical Engineering ASME**
 - **Unione Italiana di Termofluidodinamica UIT**
 - **American Nano Society ANS**
 - **Associazione Tecnica dell'Automobile ATA**

Associate Editor for

- **Journal of Heat Transfer**
 - **Journal of Porous Media**

Member of the Editorial Advisory Boards for

- **Advances in Mechanical Engineering**
 - **Journal of Engineering**
 - **The Open Thermodynamics Journal**
 - **The Open Fuels & Energy Science Journal**
 - **Nano Energy and Nano Environment**

Main research activities:

Heat Transfer, Thermal Sciences and Applied Thermodynamics. In detail:

- Active solar systems;
- Passive solar systems;
- High temperature solar systems;
- Refrigerant fluids;
- Conduction in solids irradiated by moving heat sources, analytical and numerical solutions in material processing;
- Combined radiative and conductive fields in multilayer thin films;
- Natural and mixed convection in material processing, thermal control of electronic equipment and solar systems;
- Convection in porous media and microchannels;
- Heat transfer in nanofluids.

new thoughts to solve the complicated problem.

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Experience:

- Executive committee member of Fluid Power Transmission and Control of CMES, since 2000
- Committee member of Fluid Control Engineering of CMS, since 2005
- Secretary-general of Academic Committee of Sch. Auto. and Electric Eng. of Beihang University, since 2005
- Technical Editor of IEEE/ASME Transactions on Mechatronics
- AE of International Journal of Aeronautics and Astronautics(Published in USA), since 2009
- AE of International Journal of Control Theory and Applications(Published in India), since 2008
- Editor in Chief of Hydraulics, Pneumatics and Seals, since 2007

Main research activities:

Hydraulic and mechatronic control of the field robot. In detail:

- Mechatronics
- Hydraulic power transmission and control
- Mechatronic system nonlinear dynamics and control
- Networked control
- Electro-magnetic and electro-hydraulic actuators
- Mobile robot construction machinery

ICCPE&ICI 2015 Keynote Speeches – III

28th November (Saturday) Keynote Speeches

“Laser-based Material Processing and Electronics Fabrication”



Prof. Daeho Lee

Assistant Professor, Mechanical Engineering, Gachon University,
Korea

Lasers are effective and capable material-processing tools that offer distinct features and advantages, including choice of wavelength, pulse width and frequency to match the target material properties as well as one-step direct and locally confined structural modification. Moreover, since lasers are controllable with digitized parameters and can be integrated with a CAD (computer-aided design) system they allow a high degree of freedom when the design needs to be changed.

As current technology is pushed to ever smaller dimensions, lasers become a truly enabling solution, reducing thermomechanical damage and facilitating heterogeneous integration of components into functional devices. Laser process can be applied on heat-sensitive flexible substrates since laser provides high peak processing temperature while minimizing thermal damage on the substrate due to localized and rapid heating in conjunction with extremely fast cooling rate. For this reason, lasers are actively used to develop flexible, stretchable and wearable devices nowadays.

In this talk, recent research activities will be presented focused on the laser-assisted material processing and electronics fabrication which will cover, but not limited to, 1) non-vacuum, non-lithographic electrode fabrication by laser direct writing of metal and metal oxide nanoparticle ink, 2) laser-assisted transfer of nanomaterials, 3) laser-assisted nanoimprinting over a large area, 4) localized nanomaterial synthesis and deposition.

Second part of this talk will focus on the laser-assisted one-step patterning of various nanomaterials on flexible substrates and its application to transparent conductors.

In this talk, recent research activities will be presented, focused on the laser-assisted manufacturing and diagnostics technologies for solar applications.

Laser has various characteristics depending on its parameters such as wavelength, pulse duration and frequency, and thus has a diverse range of applications.

Laser-assisted localized growth of semiconducting nanostructures is reported. As is the case of conventional crystal growth, localized laser enables three kinds of crystal growth: (1) melt growth (recrystallization) of amorphous silicon nanopillars by pulsed laser; (2) vapor growth (chemical vapor deposition) of germanium nanowires; (3) solution growth (hydrothermal growth) of zinc oxide nanowires. The results not only demonstrate programmable and digital fabrication of laser-assisted crystal growth, but also reveal unusual growth characteristics (grain morphologies, growth kinetics). Related to solar applications, it is suggested that these structures can act as epitaxial seeds for growth of coarse grains and as multi-spectral centers for enhanced and engineered light absorption.

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Experience:

- 03/2014-present Gachon University (Seongnam, Korea), Assistant Professor, Department of Mechanical Engineering
- 10/2012-02/2014 Laser Thermal Lab at UC Berkeley (Berkeley, USA), Postdoctoral Research Associate
- 05/2013-02/2014 Lawrence Livermore National Lab (Livermore, USA), Visiting Scientist
- 03/2009-02/2014 Lawrence Berkeley National Lab (Berkeley, USA), Guest researcher
- 08/2008-09/2012 Laser Thermal Lab at UC Berkeley (Berkeley, USA), Research Assistant
- 01/2007-07/2007 Hyundai Engineering & Construction Co., Ltd. (Seoul, Korea), Staff Engineer, Division of Overseas Plant
- 03/2005-12/2006 Integrated Energy & Environment Lab at Seoul National University (Seoul, Korea), Research Assistant
- 03/2002-02/2005 Handol Pumps Ltd. (Industrial process pumps manufacturing company) (Incheon, Korea), Engineer, Division of Manufacturing & Design

Main research activities:

In detail:

- Development and application of the laser processing for nanomaterials
- Laser assisted printing techniques for the fabrication of functional nanostructures
- Laser assisted chemical vapor deposition (LACVD) of semiconducting materials
- Transparent conductors
- Sustainable Energy Device (dye sensitized solar cells, organic solar cells)
- Water splitting for hydrogen production
- Flexible Electronics, Wearable Electronics
- Laser processing for clean and high-efficiency energy technology
- Nanomaterial synthesis and characterization

ICCPE&ICI 2015 Keynote Speeches – IV

28th November (Saturday) Keynote Speeches

“Qcount: Intangible Asset Valuation System for Evaluating Technology License Fees”



Dr. Tien-Yuan Kuo
成大智財科技股份有限公司 董事長

專利技術作為一種無形商品，其市場價值難以判斷，價值評估往往成為交易雙方爭執不下的問題，大大延緩了技術交易的效率。成大智財首創專利技術評價流程系統化，採用科學合理的評估原理，建立產業參數資料庫，以系統軟體的方式固化評估模型，透過雲端服務，提供操作簡單、計算快速、花費低廉、專業且具體有效的系統化評估工具，大幅降低評估費用。透過系統化評估工具，無論是技術供應方或需求方，只需要通過幾個簡單的步驟填入相關要素，立即就可以獲得相應的參考交易價值及評估報告，為企業、專家提供技術價值的參考體系，解決技術交易過程中技術成果價值難以判斷的困境。

Considering technology as intangible goods, its market value is generally hard to be evaluated. In the process of technology transfer, value always becomes a point of conflict between buyer and seller.

Chengda Intellectual Property Tech. Co. first systematized technology valuation process, using scientific and reasonable valuation methods, building up industrial database, fixing valuation model into software. At present, fast, inexpensive and easy-to-use valuation tool is available in the Clouds.

Through systematized valuation tool, after entering several related parameters in a few simple steps, both vendor and purchaser can immediately get corresponding reference value and valuation report. By providing enterprises and individuals reference architecture of technology value, the tool is able to solve the problem of value judging in technology transfer process.

Experience:

- 金屬工業研究發展中心 主任
- 新泰伸銅工業股份有限公司 重整監督人
- 名佳利工業股份有限公司 整廠規劃
- 山仁工業股份有限公司 重整監督人

- 耀登科技股份有限公司 董事
- 星陶科技股份有限公司 董事
- 東又悅企業股份有限公司 董事
- Chengda Intellectual Property Tech. Ltd.Co., President, since 1993.
- Certified Valuation Analyst of IACVA(The International Association of Consultants, Valuers and Analysts), since 2012.
- Bridging Project of Taiwan e-Learning and Digital Archives Program, IP licensing and valuating consultant, since 2009.
- Metal Industries Research & Development Centre, Director, 1982-1994.

專長/Specialty:

In detail:

- CVA 企業暨無形資產認證評價師
- 重大投資案規劃
- 智財加值整合服務：
 - 創新策略：創新研發加值、投資融資計畫
 - 智財流通：企業智財評價、智財授權交易、評價系統化
- Valuation systematization
- Technology valuation

Guidelines

1. Official Language

The official language of ICCPE2015&ICI2015 is English. All presentations including Q&A will be delivered in English.

2. Guideline for Participants

2.1.Conference Venue

Sun Moon Lake Teachers' Hostel (<http://www.t-welfare.com.tw/edumoon/>)

2.2.Registration

Time of Registration: 15:00PM ~ 18:30PM, Friday, Nov. 27th, 2015 (1F- Conference Center)

2.3.Internet Service and International Telephone

Computers with Internet Service at Conference Center are provided by Sun Moon Lake Teachers' Hostel. Wireless is also free to use around the hotel.

2.4.Conference Kit

Conference kit, which contains final program, name badge, tickets for lunches, banquet and official receipt, will be provided to participants during check-in at the Registration/Information Desk on Friday, Nov. 27th.

3. Guideline for Presenters

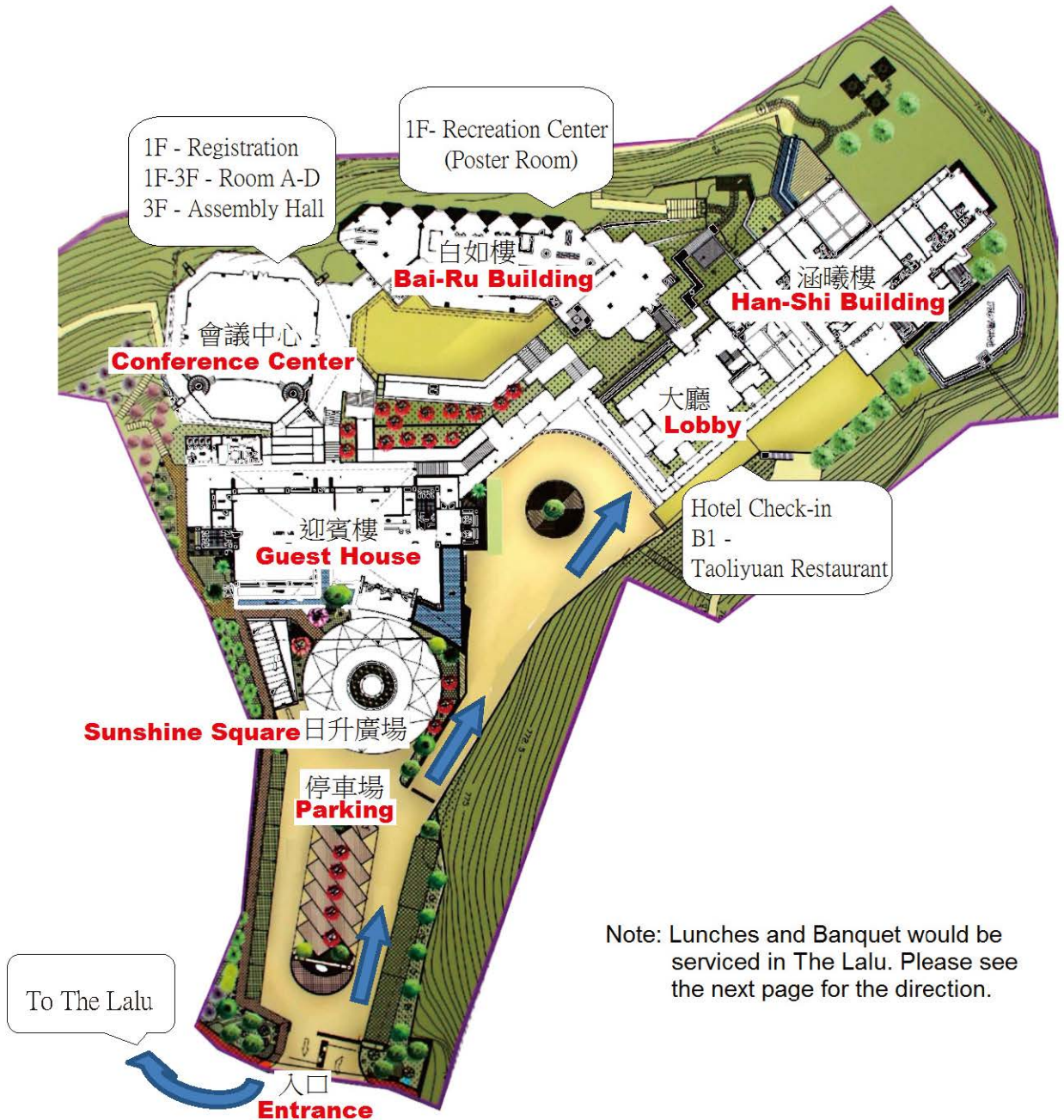
- [1] The presenters and session chairs are asked to keep to the paper sequence as shown in the Final Program. By following this predefined schedule, participants can switch between sessions without missing the particular papers of interest.
- [2] The presentation time for each presenter is 15 minutes including Q&A. The session chairs should allow the presenter for a 12-minute presentation and leave 3 minutes for discussions. All presenters are requested to report their attendance to the session chair 10 minutes before the session begins. If there are only 4-5 presenters in a session, then the session chair should allow the presenter for a 15-minute presentation and leave 3 minutes for discussions.
- [3] Notebook PCs and LCD projectors will be available in every session room. Presenters are encouraged to prepare their files in MS PowerPoint format on a USB and copy into the PC at session room before the session begins. Our session aids will assist the presenters to copy the file. If you wish to use your own notebook PC, please open the file before your presentation.
- [4] For unexpected events that cannot be handled on the spot, you may request through session chairs, session aids or make a direct notification to the Conference Secretary Desk.

4. Guideline for Posters

Standard Poster Size: 50 cm (width) X 90 cm (length)

Sun Moon Lake Teacher's Hostel - Symposium Floor

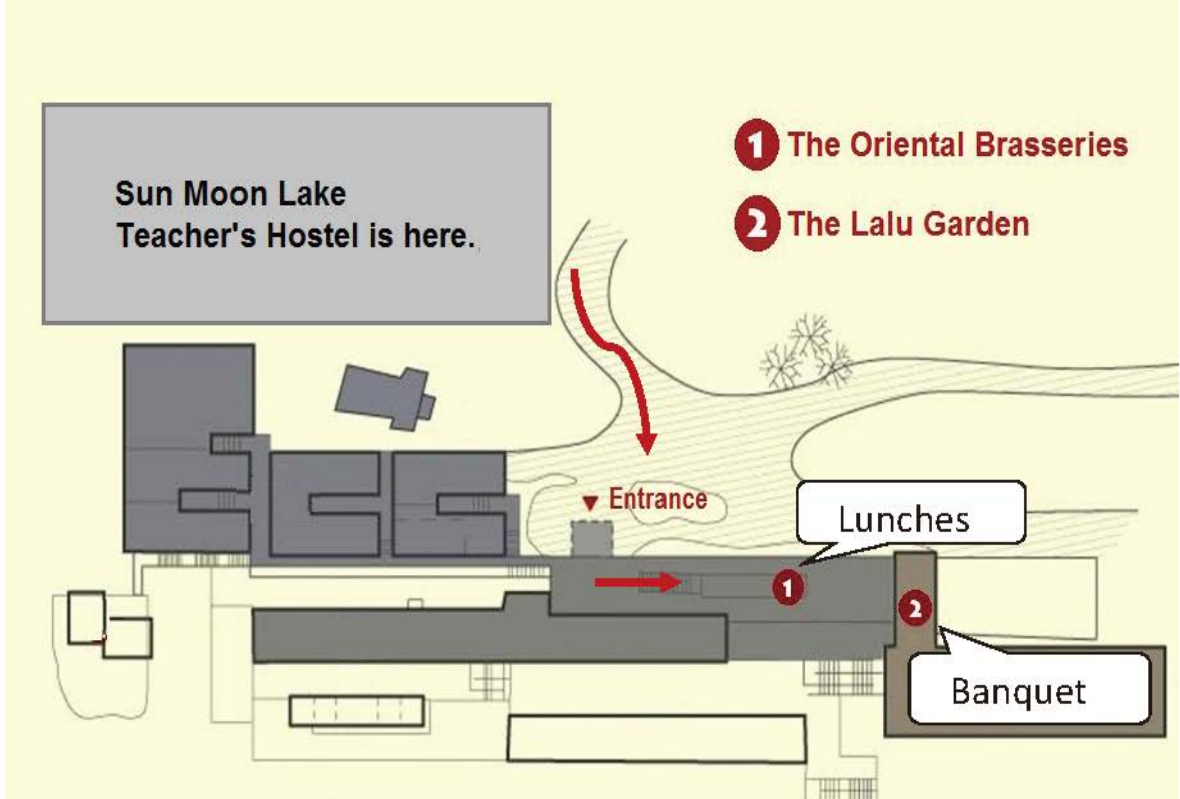
Plan



The Lalu - Symposium Floor Plan

The Lalu Services & Facilities Guide

涵碧樓設施配置圖





Transportation & Direction

➡ Arrive at Sungshan International Airport

Route 1 TRTC→ Kuo-Kuang Motor Transport

1. Please transfer to Taipei Main Station by taking Taipei Mass Rapid Transit (MRT).
2. Go to Taipei West Bus Station Terminal B to take Kuo-Kuang Motor Transport No.1833.

✓ Kuo-Kuang Bus Single Ticket: NT\$ 460

Route 2 MRT→THSR→Nantou Bus or Sun Moon Lake Route Taiwan Tourist Shuttle Bus

- A.** Taking THSR from Taipei Station to Taichung Station, and transfer to Nantou Bus No. 6670.

✓ Nantou Bus Single Ticket: NT\$ 190

- B.** The Taiwan Tourist Shuttle service: Sun Moon Lake Route

1. From THSR Taichung Station hall No.5, 6 Exit Escalator to 1st floor Bus Station
2. Go to No. 5 Exit, No. 3 Bus Platform to transfer the No. 6670 Nantou Bus or “The Taiwan Tourist Shuttle service: Sun Moon Lake Route”
3. The bus going to Sun Moon Lake comes every 60 minutes and it takes about 90 minutes

✓ Nantou Bus single Ticket: NT\$ 190

✓ The Taiwan Tourist Shuttle service fare: NT\$ 190 / one way, NT\$ 340 / round trip

➡ Arrive at Taoyuan International Airport

UBUS→ THSR→ Nantou Bus or Sun Moon Lake Route Taiwan Tourist Shuttle Bus

1. Please transfer to THSR Taoyuan Station by taking Ubus.

✓ Full fare: NT\$ 30, half fare NT\$ 15.

✓ Intervals: 5 - 10 minutes intervals during peak times.

✓ Trip length: 25 minutes.

2. Taking THSR from Taoyuan Station to Taichung Station
3. Arriving THSR Taichung Station, then transfer to Nantou Bus or “The Taiwan Tourist Shuttle service: Sun Moon Lake Route”.
 - ✓ Nantou Bus single Ticket: NT\$ 190
 - ✓ The Taiwan Tourist Shuttle service fare: NT\$ 190 / one way, NT\$ 340 / round trip

➡ **Arrive at Kaohsiung International Airport**

Kaohsiung Rapid Transit (KRTC) → THSR → Nantou Bus or Sun Moon Lake Route Taiwan Tourist Shuttle Bus

1. Please transfer to THSR Zuoying Station by taking KRTC.
2. Taking THSR from Zuoying Station to Taichung Station.
3. Arriving THSR Taichung Station transfer to Nantou Bus or “The Taiwan Tourist Shuttle service: Sun Moon Lake Route”.
 - ✓ Nantou Bus Single Ticket: NT\$ 190
 - ✓ The Taiwan Tourist Shuttle service fare: NT\$ 190 / one way, NT\$ 340 / round trip

Schedule-at-a-Glance

November 27 th (Fri.)	
15:00~18:30	Registration
18:30~	Welcome Reception

November 28 th (Sat.)		November 29 th (Sun.)	
8:30~9:40	Registration	9:30~12:00	Session 1
10:00~10:40	Opening	12:10~13:20	Lunch Break
10:40~11:15	Keynote Speech I	13:30~15:30	Session 2
11:15~12:00	Keynote Speech II		
12:10~13:20	Lunch Break		
13:30~16:00	Session 1		
16:00~16:15	Coffee Break		
16:15~17:00	Keynote Speech III		
17:00~17:45	Keynote Speech IV		
17:45~17:55	SPINTECH Technology -Thesis Award		
17:55~18:10	Group Photo		
18:30~20:30	Banquet		

Social Event November 30 th (Mon.)	
9:00~11:00	Lake Tour by Boat (Gratis)
12:00~13:30	Lunch at Jindu Restaurant
14:00~17:00	Visiting of Chung Tai Chan Monastery
17:00~18:00	THSR Taichung Station National Chung Hsing University

- **Time for each presentation** (Including the question-and-answer period)
 - ✓ Keynote Speech: 45 mins
 - ✓ Presentation: 15 mins

		3F Room A (Assembly Hall)	2F Room B (3rd Meeting Room)
Sat., November 28th	Oral Session I 13:30-16:00	A1. IV-Intelligence Computational and Control Approaches for Multi-Physic Coupling Engineering Systems (Open for submission VI-Vibroengineering of dynamical systems (macro-, micro-, nano- mechanical, mechatronic, biomechanics and etc. systems) (I)-Patent based inventions in applied science and engineering <i>Yi-Hung Liu, National Taipei University of Technology, Session Chair</i> <i>Chin-Sheng Chen, National Taipei University of Technology, Session Chair</i>	B1. B-Computational and Mathematical Sciences J-Laser applications in sensing, diagnosis and manufacturing (6) Inventions in processes <i>Hsiang-Chuan Liu, Asia University, Session Chair</i> <i>Huei Chu Weng, Chung Yuan Christian University, Session Chair</i> <i>Chao-Ching Ho, National Yunlin University of Science and Technology, Session Chair</i>
		A1-1. 13:30	B1-1. 13:30
		IV124 - A Brain-Computer Interface based Healthcare Control System Integrating P300 and Steady-State Visual Evoked Potentials of EEG <i>Yi-Hung Liu, Shih-Hao Wang</i>	B031 - A novel DEMATEL theory based on Liu's ordering theory <i>Hsiang-Chuan Liu, Yih-Chang Ou, Ben-Chang Shia, Hsien-Chang Tsai,</i>
		A1-2. 13:45	B1-2. 13:45
		IV106 - Design of an Image-servo Mask Alignment System Using Dual CCDs with a XXY Stage <i>Chih-Jer Lin, Chiang-Ho Cheng, Hui-Hsiang Hsu</i>	B091 - Towards Shift Tolerant Visual Secret Sharing Scheme without Pixel Expansion <i>Justie Su-Tzu Juan, Yung-Chang Chen, Song Guo</i>
		A1-3. 14:00	B1-3. 14:00
		IV109 - Optimal Control Strategy Development for a Series Hydraulic Hybrid Vehicle <i>Chih-Keng Chen, C.W. Hung, T.Y. Vu</i>	B093 - Optimal Improvement Ratios of Multi-Secret Sharing Schemes Can Be Achieved <i>Justie Su-Tzu Juan, Jennifer Hui-Chan Tsai, Yi-Chun Wang</i>
		A1-4. 14:15	B1-4. 14:15
		IV110 - Simultaneous Control of Robot End-Effector and Gesture based on Augmented Multi-Tasking Method via Human Teleoperation <i>Hsien-I Lin, Yu-Chen Liu</i>	B133 - Combined forced and thermocreep convection in a long microchannel <i>Huei-Chu Weng</i>
		A1-5. 14:30	B1-5. 14:30
		IV131 - Gradient-based Pose Estimation Using Perspective Deformable Matching <i>Chin-Sheng Chen, Chien-Liang Huang</i>	J061 - A Study of the Application of Micro Stamping without a Lower Die to Tapered Bore Forming <i>Yong-Zhou Hong, Yuan-Jen Chang, Chia-Lung Kuo, Jin-Chen Hsu, Chao-Ching Ho</i>
		A1-6. 14:45	B1-6. 14:45
		VI083 - Parameter sensitivity of vibration transfer path systems in frequency domain <i>Wei Zhao, Na Zhou, Yi-Min Zhang</i>	6229 - A Predicted-based Real-Time Collision Prevention System for Five-Axis Machine Tools <i>Ching-Hung Lee, Cheng-Wei Lee, Chung-Yi Lin</i>
		A1-7. 15:00	B1-7. 15:00
		1196 - Modeling of Intermesh Schedule for Strong Heavy Plate Roller Straightener and Finite Element Method Modification <i>Xu Meng, Sun Dengyue, Xu Shimin, Chen Peng, Sun Hao</i>	6214 - Liu's Generalized Correlation Coefficient based on Log Likelihood Ratio Test Statistic <i>Hsiang-Chuan Liu</i>
		A1-8. 15:15	B1-8. 15:15
		A1-9. 15:30	B1-9. 15:30
		A1-10. 15:45	C1-10. 15:45

		2F Room B (3rd Meeting Room)	1F Room C (1st Meeting Room)
Sun., November 29th	Oral Session I 09:30–12:00	B1. K.-Recent Trends in Computer Applications (Invited manuscripts only) K.-Others <i>Hung-Jen Yang, National Kaohsiung Normal University, Session Chair</i> <i>Fen-Pen Huang, Oriental Institute of Technology, Session Chair</i>	C1. F.-Advanced analysis, design and manufacturing technology for precision Engineering <i>Hau-Wei Lee, Industrial Technology Research Institute, Session Chair</i> <i>Dya-Cheng Chen, National Changhua University of Education, Session Chair</i>
		B1-1. 9:30	C1-1. 9:30
		X079 - A Study of Effects of Open Ceremony on e-learning Account Sustainability <i>Hung-Jen Yang, Lung-Hsing Kuo, Li-Ming Chen</i>	F019 - Study of 6061 aluminum alloy thread turning <i>Dya-Cheng Chen, Ci-Syong You, Mu-Jung Yu</i>
		B1-2. 9:45	C1-2. 9:45
		X080 - Exploring Effects of Different Roles on Using an E-learning Service <i>Hung-Jen Yang, Lung-Hsing Kuo</i>	F039 - Study on cutting forces in the hard milling of hardened SKD 61 steel using Taguchi and response surface methodology <i>Quang-Cherng Hsu, Huu-That Nguyen</i>
		B1-3. 10:00	C1-3. 10:00
		X081 - Identify User's Satisfaction from Platform Using Behavior <i>Hung-Jen Yang, Lung-Hsing Kuo</i>	F089 - Study on minimum quantity lubricant conditions to reduce the surface roughness in hard milling of SKD 61 <i>Quang-Cherng Hsu, The-Vinh Do</i>
		B1-4. 10:15	C1-4. 10:15
		X100 - Dynamic Model of the Friendship Network Evolution and Academic Achievement for Adolescence <i>Hsieh-Hua Yang, C. I. Wu</i>	F119 - Discussion for the Relationship between LaserTRACER ISO Test Result and Linear Positioning Error of Machine Tools <i>Hau-Wei Lee, Shan-Peng Pan, Hua-Chung Liou, Po-Br Hsu</i>
		B1-5. 10:30	C1-5. 10:30
		X144 - Exploring subjective well-being in social network sites? - Supplementary fit and social support perspective <i>Ying-Chieh Liu, Hung-Yi Chen, Bo-Yen Yao</i>	F067 - Symmetrical Continuous Multidirectional Ultra-light Ultra-Strong Space Truss Structure <i>Mindaugas Ramaška</i>
		B1-6. 10:45	C1-6. 10:45
		X150 - The Study of Inter-organizational Cooperation in Hospital - A Perspective of Resource-based Theory <i>Ying Chieh Liu, Chi-Wen Juan, Hung-Chih Lai, Ping-Liang Chen</i>	F085 - Reliability optimization design of cylindrical gear-drive with multi-failure modes <i>Na Zhou, Wei Zhao, Xu-Fang Zhang, Chun Mei Lv, Yi-Min Zhang</i>
		B1-7. 11:00	C1-7. 11:00
		X152 - Investigation on the Relationship between Information Communication Technology and Reading Literacy for Northeast Asian Students <i>Yi-Horng Lai</i>	F104 - Machining stability of a milling machine with hybrid guideway system <i>Jui-Pin Hung, Wei-Zhu Lin, Tzou-Lung Luo</i>
		B1-8. 11:15	C1-8. 11:15
		X157 - An Empirical Study of Roadrunners Acceptance of Smart Wearable Devices through Health Anxiety <i>Fen-Pen Huang, Yi-Horng Lai, Hsieh-Hua Yang</i>	F186 - Hybrid Electrical Discharge Drilling and Simultaneous Grinding with A High Speed Spindle and Micro Co-Deposition Diamond Tool <i>Albert Wen-Jeng Hsue, Yu-Fu Chang</i>
		B1-9. 11:30	C1-9. 11:30
		K076 - Relationships between Health Promotion Lifestyle and Health Related Physical Fitness for Middle-Aged and Elderly in Taiwan <i>Tsui-Br Lee</i>	
		B1-10. 11:45	C1-10. 11:45
		K084 - The Effects of the Intervention of Physical Fitness Exercise and Dietary Guidelines on Adolescent Overweight Girls <i>Tsui-Br Lee</i>	

		1F Room D (2nd Meeting Room)		2F Room B (3rd Meeting Room)
Sun., November 29 th	Oral Session I 09:30-12:00	D1. VII-Multimedia communication (Invited manuscripts only) IX- Computing and Network Systems (6)-Inventions in processes <i>Jui-Feng Yeh, National Chiayi University, Session Chair</i> <i>Young-Long Chen, National Taichung University of Science and Technology, Session Chair</i>	Oral Session II 13:30-15:30	B2. G- Advance Manufacturing and analysis technology for Microsystem technology and nanotechnology I- Automation and Intelligent Systems (Invited manuscripts only) (1)- Patent based inventions in applied science and engineering H- Control and Automation Technology, Mechatronics, Robotics for Manufacture and Industry V- Nanomaterials for Flexible and Stretchable Devices: Synthesis, Processes, and Applications (Open for submission) <i>Pei-Ching Chang, St. John's University, Session Chair</i> <i>Kuan-Chen Lin, Far East University, Session Chair</i> <i>Yi-Cheng Huang, National Changhua University of Education, Session Chair</i> <i>Ming-Tsang Lee, National Chung Hsing University, Session Chair</i>
		D1-1. 9:30		B2-1. 13:30
		VIII12 - Efficiency Analysis of Partial Shortening Name Prefix in Named Data Networking <i>Jenq-Muh Hsu, Jui-Yang Chang</i>		G072 - Flexible OLEDs encapsulated with gas barrier films prepared by atomic layer deposition <i>Pei-Ching Chang, Fa-Ta Tsai, Ching-Kong Chao, Pei-Sin Jhu</i>
		D1-2. 9:45		B2-2. 13:45
		IX094 - A robust cloud access scheme with mutual authentication <i>Chin-Ling Chen, Yong-Yuan Deng</i>		I035 - Design of a two-wheeled self-balancing vehicle utilizing a chattering-free sliding mode control technique <i>Kuan-Chen Lin, Cong-Hui Huang, Chung-Chi Huang</i>
		D1-3. 10:00		B2-3. 14:00
		IX165 - GLCM-based 2D histogram modification for high- capacity reversible data hiding <i>Wan-Ting Fang, H. C. Wu, C.S. Tsai</i>		I235 - Numerical silitation into slope-climbing capability of PEM fuel cell hybrid scooter <i>Jenn-Kun Kuo</i>
		D1-4. 10:15		B2-4. 14:15
		IX167 - Reversible data hiding for binary images based on 2D histogram modification <i>Jie-Ru Wen, C.S. Tsai, H. C. Wu</i>		H063 - Hybrid Particle Swarm Optimization Strategy for Designing Iterative Learning Controller for Precise Positioning a Linear Motor <i>Yi-Cheng Huang, Ming-Chi Hsu, Jen-Ai Chao, Ming-Yu Ma</i>
		D1-5. 10:30		B2-5. 14:30
		IX161 - Applications of FLC for management schedules with cloud platforms <i>Young-Long Chen, Y.S. Liu</i>		V095 - A Study on Characteristic Evaluation and Fabrication of Sintered Cu-CNT Composite <i>Sam-Chul Huh, Ji-Hun Pak, Bo-Sung Kim, Gwi-Nam Kim, Hyun-Suk Lee, Hyeon-Woo Joo, Jung-Pil Noh</i>
		D1-6. 10:45		B2-6. 14:45
		6197 - A New Invented ERP After-sale Service <i>Jung-Sing Jwo</i>		V099 - Optimization of Aluminum Nitride Coatings to Enhance Thermal Performance of light-Emitting Diode Modules <i>Ming-Der Jean, Maw-Tyan Sheen</i>
		D1-7. 11:00		B2-7. 15:00
		VIII39 - Chinese Spelling Checker for Secondary Language Learners using Error Template Matching <i>Jui-Feng Yeh, K. H. Yu, C. H. Yeh</i>		V236 - Development of laser direct synthesis and patterning technology for fabricating flexible electronics <i>Ming-Tsang Lee, S.L. Cai, Y.K. Liu</i>
		D1-8. 11:15		B2-8. 15:15
		VI066 - Clinical Specialty Supporting in Interactive Question Answering System <i>Jui-Feng Yeh, Ming-Da Kuo, Kao-Pin Hwang</i>		H204 - Design and Implementation of Hardware-in-the-loop Real- time Simulation Platform for Electromechanical Actuator Based on Matlab/SPACE <i>Yun-Hua Li, J.T. Jia</i>
		D1-9. 11:30		
		D1-10. 11:45		

		1F Room C (1st Meeting Room)	1F Room D (2nd Meeting Room)
Sun., November 29th	Oral Session II 13:30~15:30	C2. II-Sensing Control Analysis and Experiment for Advanced Materials (Open for submission) C-Modeling, numerical simulation and optimization <i>Cheng-Chi Wang, National Chin-Yi University of Technology, Session Chair</i> <i>Rong-Shue Hsiao, National Taipei University of Technology, Session Chair</i> <i>Ta-Cheng Chen, Asia University, Session Chair</i> <i>Wei Yang, Chongqing University, Session Chair</i>	D2. D-Computer and Information design and analysis Technologies (3)-Inventions in devices, sensors and actuators (5)-Inventions in design <i>Ray-Hwa Wong, Hwa Hsia University of Technology, Session Chair</i> <i>Sheng-Iye Hwang, National Cheng Kung University, Session Chair</i>
		C2-1. 13:30	D2-1. 13:30
		II021 - Design of a magnetic flywheel control for fuel cell vehicles <i>Chung-Neng Huang, Yui-Sung Chen</i>	D126 - Energy and Performance Analysis of the Acoustic Echo Canceller with the Hybrid Memory <i>Yao-Hua Chen, Hsu-Chang Huang</i>
		C2-2. 13:45	D2-2. 13:45
		III20 - Device-free indoor localization based on statistical classifiers <i>Rong-Shue Hsiao, Mekuanint Agegnehu Bitew, Shinn-Jong Bair, Hsin-Piao Lin</i>	3189 - Invention of a Electrohydraulic Servo Control Volumetric Type Bending Machine <i>Ray-Hwa Wong, Ming-Chuan Chen, Jim Su, Thong-Daw Yang, Wei-Heng Wong</i>
		C2-3. 14:00	D2-3. 14:00
		II051 - PIV measurement of hydrodynamic properties of raceway pond with the effect of central wall <i>Cheol Woo Park, Kyung Won Kim, Woo Hyoung Lee, Yeon Ho Lee, Haider Ali, Moon Kyu Kwak</i>	5215 - Design with White-Light-LEDs for an Automotive Low Beam Projector Headlamp <i>Sheng-Iye Hwang, Yueh-Ying Chiang, Huei-Huang Lee, Deng-Yuan Hwang, Chien-Chih Liao</i>
		C2-4. 14:15	D2-4. 14:15
		C023 - The Design of Modified PSO Guidance Law Using Predictor and LOS Rate Evaluation <i>Kuei-Yi Chen, Yung-Lung Lee, Sheng-Ju Liao</i>	5216 - Pressure Controller Design for a Servo Hydraulic System <i>Sheng-Iye Hwang, Tzu-Hua Wang, Huei-Huang Lee, Deng-Yuan Huang, Chien-Jung Chen</i>
		C2-5. 14:30	D2-5. 14:30
		C116 - Multi-objective Competitive Location Problem with Distance-Based Attractiveness <i>Sheng-Chuan Wang, Ta-Cheng Chen</i>	5185 - Intelligent Driving Circuit for Ultrasonic Transducers <i>Shiang-Hvua Yu, Yi-Fei Hsieh, Yi-Ling Chen, Jen-Jie Wang, Fei-Ying Lai, Chih-Po Yang, Pei-Kun Lin</i>
		C2-6. 14:45	D2-6. 14:45
		C096 - A Study on Analysis Method of Offshore Heave Compensator <i>Gwi-Nam Kim, Sung-Gu Hwang, Jang-Hwan Hyeon, Young-Hwan Yoon, Yong-Gil Jung, Sun-Chul Huh</i>	3219 - Calculation and Analysis of the Responsivities and Efficiencies of the β -FeSi ₂ p-i-n Photodiodes <i>Jung-Sheng Huang, Kuan-Wei Lee, Tian-Cheng Lin, Che-Chi Li, Chang-Lin Tsai</i>
		C2-7. 15:00	D2-7. 15:00
		C153 - Parametric Study of Defect Detection in Pipes with Bend Using Focused Guided Waves <i>Xin Wang, J. J. Tan, N. Guo, J. H. Ho</i>	3220 - Calculation and Analysis of the Responsivities and Efficiencies of the BaSi ₂ p-i-n Photodiodes <i>Jung-Sheng Huang, Kuan-Wei Lee, Tian-Cheng Lin, Quan-Sheng Xie, Wei-Ming Li, Zhong-Ying Jiang</i>
		C2-8. 15:15	D2-8. 15:15
		C179 - Modeling and modal analysis of a Hoist Equipped with Two-stage Planetary Gear Transmission System <i>Wei Yang, Xiaohu Tang, Xiaolan Chen, Bo Qian</i>	

IF Poster Room (Recreation Center)			
Sun., November 29th	Poster 1 10:00-10:40	Poster 1. B056 - Power-Flow Analysis of an 11-Speed Internal Hub Transmission <i>Yi-Chang Wu, M.Y. Hsieh, L.A. Chen</i>	Poster 14. I011 - Development of Intelligent Fuzzy controller for two axis solar tracking system <i>Cong-Hui Huang, Chia-Hung Wang, Jing-Fang Lin, Yu-Tang Su, Jun-Jie Chen</i>
		Poster 2. C033 - Simulation of Mechanical Resistive Loading Effect on Optimal Respiratory Control Model with added Dead Space and CO ₂ Breathing <i>Shyan-Liang Lin, Hsing-Cheng Chang, Chieh-Liang Wu</i>	Poster 15. I070 - Using multiple-selection particle swarm optimization for achieving optimal security-based preventive dispatch in power systems <i>Cong-Hui Huang, Yi-Ming Tsao, Yu-Tang Su, Heng-Yau Pan, Cheng-Kai Tsai</i>
		Poster 3. C092 - A Synchronizer Based Optimal Voltage Control Scheme with Successive Voltage Stability Margin Improvement <i>Heng-Yi Su, Yi-Chung Chen, Yu-Liang Hsu</i>	Poster 16. I1024 - Thermal Strain Measured by Fiber Bragg Grating Sensors <i>Shuh-Chuan Hor, Chieh-Ying Huang</i>
		Poster 4. C098 - Helical Cathode Bulb-Shaped Field Emission Lamps Using Carbon Nanocylindrical Electron Emitters <i>Yi-Ping Chou, Nen-Wen Pu, Tih-Ming Liu, Ming-Der Ger, Kung-Hsu Hou, Meng-Jey Yauh</i>	Poster 17. I1078 - Optimization of operating condition of geothermal system based on supercritical CO ₂ heat extraction <i>David T.W. Lin, Bo-Yen Shih, Jui-Ching Hsieh</i>
		Poster 5. D013 - Design of cam mechanism with negative radius roller-follower <i>Jung-Pa Hsieh, Wen-Chang Hsieh</i>	Poster 18. I1130 - Data Association of Aerial Robot Monocular Visual Localization and Mapping <i>Yin-Tien Wang, Chang-Hsun Su, Ting-Wei Chen, Chen-Tung Ch</i>
		Poster 6. D198 - A Study on the Development of Realistic Testbed for the UX(User eXperience) Profiling in a Service Design <i>Song Yi Kim, Youngchoong Park, Byounggha Park, Seong-Dong Kim, Kwang-Mo Jeong, Myung-Hyun Yoon</i>	Poster 19. J032 - Characterization of the controlled laser cleaving on ultra-thin glass with advanced laser technique <i>Hsiang-Chen Hsu, Shih-Jeh Wu, Wen-Pai Lin</i>
		Poster 7. F123 - Surface analysis of AISI 410 stainless steel cladding with AlN and Si ₃ N ₄ powder <i>Tzung-Ming Chen, Hsin-Min Lee, Shang-Seheng Wu, Zhong-Jia Huang</i>	Poster 20. K117 - Effect of acid rain on surface of human hair cuticles <i>Chia-Ling Chang, Tsung-Han Ho, Te-Hua Fang</i>
		Poster 8. G077 - Pull-in behavior Analysis for the Double-Clamp NEMS Incorporating Casimir and van der Waals Forces <i>Chin-Chia Liu</i>	Poster 21. V071 - Effect of Sputtering Power on Optical and Electrical Properties of ITO Films <i>Shuh-Chuan Hor, Chian-Ru Chang</i>
		Poster 9. H047 - Robust Hinf Observer-Based Control of Uncertain Neutral Systems with Mixed Delays <i>Jong-Der Chen, Ruop-Shin Chen, I-Te Wu, Chin-Tan Lee</i>	Poster 22. H034 - Remote Control of a Mobile Robot for Indoor Patrol <i>Nhi-Gau Juang, S.Y. Juang</i>
		Poster 10. H132 - Sequentially switched fuzzy control for wheeled mobile robots <i>Chung-Hsun Su, Yin-Tien Wang, Sheng-Kai Huang</i>	Poster 23. I1097 - Explore Unknown Environment Using Ultrasonic and Infrared Sensors <i>Nhi-Gau Juang, Yu-Che Yang</i>
		Poster 11. H137 - An FPGA-Based Multiple-Axis Velocity Control Chip Design <i>Chiu-Keng Lai, Wei-Nan Chen, Yaw-Ting Tsao</i>	Poster 24. I1148 - Adaptive control of active magnetic bearing against milling dynamics <i>Rong-Mao Lee</i>
		Poster 12. I010 - Advanced MPPT Control Strategy for Wind/PV/Fuel Cell Hybrid Power System in Mikro-grid application <i>Cong-Hui Huang, Chieh-Ming Hong, Kuan-Chen Lin, Shang-Jen Chuang</i>	Poster 25. K073 - Evaluating performance of DGM(2,1) model and its modified models <i>Hoang-Sa Dang, Ting-Fang Huang, Chia-Nan Wang, Shun-Te Lai</i>
		Poster 13. I1087 - Optimization and Application of Composite Ultrasonic Extraction Method to Analysis of Effective Constituents of Green Tea <i>Cheng-Chi Wang, T.E. Lee</i>	Poster 26. I195 - Variable twist blade design and realization for a more effective wind generation <i>Piero GILLI, Giacomo PRULLA</i>

IF Poster Room (Recreation Center)			
Sun., November 29th	Poster 2 10:40-11:20	Poster 1.	Poster 14.
		VIII146 - A Heat Collection Solar Tracker with Fresnel Lens for Solar Thermal Application <i>Tzung-Chieh Cheng, Chao-Kai Yang</i>	4238 - Identification of alcohol concentration by photonic sensors <i>Hsin-Her Tu, Wen-Kai Kuo, Hueh-Ping Weng, Jyun-Sheng Hsu</i>
		Poster 2.	Poster 15.
		F138 - Fluid flow and heat transfer characteristics of LED finned heat sink with built-in piezoelectric fan <i>Sheng-Chang Tzeng, T. M. Jeng, C.X. Wang, X.Y. Peng</i>	3180 - The Effects of Adhesive and Bonding Length on the Strain Transfer of Optical Fiber Sensors <i>Shieh-Chuan Hor, Chih-Ying Huang</i>
		Poster 3.	Poster 16.
		F154 - Experimental study of heat transfer in the radially rotating convergent channel of vented brake disk for automobile <i>Sheng-Chang Tzeng, T. M. Jeng, Bo-Jun Yang, Guang-Siang Jiang</i>	B050 - Bio-Mathematics Models and Applying Contact Network Technique Studies for Novel Influenza <i>Chun-Yen Chang, Hung-Yuan Chung</i>
		Poster 4.	Poster 17.
		F155 - Feasibility test of the thermoelectric generator system installed at a real engine <i>Sheng-Chang Tzeng, Tze-Ming Jeng, Bo-Jun Yang</i>	IX074 - Efficient Conference Key Protocol Based on Secret Sharing <i>Hui-Peng Huang, Yang-Peng Lu, An-Ting Liu</i>
		Poster 5.	Poster 18.
		F136 - Technique development and performance testing of the novel heat exchangers with cross runners <i>Sheng-Chang Tzeng, T. M. Jeng, H.H. Chen, C.H. Chang</i>	E025 - Elucidating the Microwave Dielectric Properties of (Mg _{1-x} Ca _x)SnO ₃ Ceramics <i>Yih-Chien Chen, Chih-Hung Li</i>
		Poster 6.	Poster 19.
		4212 - Sa-benzotriazole (BTA) Composite Bio-nano oil by Chemical Reduction <i>Chen-Yang Wu, Mu-Jung Kao</i>	I156 - Development of Intelligent Auxiliary System for Customized Physical Fitness and Healthcare <i>Chang-Chi Huang, Hsiao-Mon Liu, Yen-Ting Ke</i>
		Poster 7.	Poster 20.
		5172 - Development of a Globally Active Balance Module with Range Extension Effect <i>Jeng-Chyan Lin, Xiang-Lin Lai</i>	VIII158 - Photodynamic Antimicrobial Effects of Erythrosine and Methyl Blue on <i>Staphylococcus Aureus</i> and <i>Escherichia Coli</i> <i>Shih-Chen Shih, Wen-Ke Huang</i>
		Poster 8.	Poster 21.
		5213 - Fatigue Analysis and Optimization Design of the CNC Cylindrical Grinder <i>Jiu-Chang Lin, Cheng-Jen Lin, SUPERTEC MACHINERY INCORPORATED</i>	II055 - Design of an Intelligent Vehicle Control based on the COG of Pilot <i>Chang-Neng Huang, Chian-Lung Wu</i>
		Poster 9.	Poster 22.
		4218 - Photosensitization study on the oxidizing chemiluminescence of the aromatic diazenes <i>Jia-Yao Xie, Shun-Chi Chen, Chung-Wen Sun, Rang-Chi Chang, Shun-Hsuan Yeh</i>	J118 - The Effects of Different Parameters on the Temperature Field of Plasma Assisted Machining Titanium Alloy (Ti-6Al-4V) <i>Shiao-Hsien Chen, Cheng-Shen Ko</i>
		Poster 10.	Poster 23.
		3222 - Total Ionization Radiation Sensor Performance Improvement by Using Si-rich MONOS Device <i>Wen-Ching Hsieh, Daniel Hao-Tyen Lee, Puh-Cheng Jong, Shieh-Chuan Wu, Dawei Heh, Tzu-I Tsai</i>	VI006 - Application of damage locating vectors approach on monitoring shock isolation system <i>Wei-Chih Su, Q.T. Le, C.S. Huang</i>
		Poster 11.	Poster 24.
		C058 - Design and optimization of bi-directional-rotation herringbone-grooved journal bearings <i>Chien-Sheng Liu, Chien-Yu Chen, Yu-Cheng Li</i>	VIII046 - High frequency vibrating interrogation system combined with the bending fiber induced whispering gallery mode filter and FBG sensor <i>Sheng-Peng Wang, Chien-Chang Huang, Chia-Chin Chiang, Liren Tsai, Tao-Hsing Chen</i>
		Poster 12.	Poster 25.
		6233 - An Inverse Electroacoustic Method Estimate Nonlinear Electrical Parameters of Moving-Coil Loudspeaker <i>Chi-Chang Wang, Jin-Huang Huang, Thi-Thao Ngo</i>	3206 - Optical fiber gas sensor utilizing long-period fiber grating coated with nanoporous silica films <i>Chia-Chin Chiang, Chao-Wei Wu</i>
		Poster 13.	Poster 26.
		1247 - Innovative methodology to 3-D Point Cloud Registration Problem for Automatic Object Digitization in Robot Scanning <i>Liang Chia Chen, Dinh-Cuong Hoang, Hsien-I Lin, Thanh-Hung Nguyen</i>	

1F Poster Room (Recreation Center)			
Sun., November 29th	Poster 3 11:20-12:00	Poster 1.	Poster 13.
		3194 - Experimental Study for Thermoelectric Self Cooling <i>Kuo-Chi Liu, Yaen-Shan Chen, Mu-Kai Chen</i>	5232 - Measurement of Pupil Size by Direct Measurable Pen Flashlight and Scanned Pen Flashlight <i>Piao-Yi Chou, Pei-hung Liao, Chien-yu Chen, Chang-Rong Chao, Pei-Jung Wu, Yong-Zhi Lin, Shu-Ying Lee</i>
		Poster 2.	Poster 14.
		4224 - High Refractive Organic-Inorganic Hybrid Films Prepared by Low Water Sol-Gel and UV-Irradiation Processes <i>Chien-Hsin Yang, Hsiao-Yuan Ma, Pei-Yu Chang</i>	1243 - Development of a high precision real-time optical straightness and angular error measuring system <i>Hsu-Wei Lee, Yu-Chi Liu, Chien-Hung Liu</i>
		Poster 3.	Poster 15.
		5239 - Innovation of medicine giving pacifier and its effect <i>Pei-Hung Liao, Piao-Yi Chou, Shu-Ying Lee, Yong-Zhi Lin, Pei-Kai Chiang</i>	4211 - Mechanical and microstructural analysis of NiAl alloy with different Copper contents <i>Tao-Hsing Chen, Jian-Hong Wu</i>
		Poster 4.	Poster 16.
		1173 - Surface and Nanofriction Characteristics of Hair Cuticles <i>Chia-Ling Chang, Tsung-Han Ho, Te-Hua Fang</i>	11135 - Investigation for the Influence of Excitation Frequency to Atomic Force Microscope System <i>Cheng-Chi Wang, H.T. Yau, Y.S. Hsieh</i>
		Poster 5.	Poster 17.
		1240 - Measurement of displacement system by moiré phase analysis <i>Yang Yang, Hung-Sheng Chang, Ju-Yi Lee</i>	VIII160 - Fatigue Life Analysis of Cantilever Probe on Wafer Test <i>Te-Ching Hsiao, Shyh-Chour Huang, Hao-Yuan Chang</i>
		Poster 6.	Poster 18.
		BI29 - Comprehensive Weighted Clique Degree Ranking Algorithms and Evolutionary Model of Complex Network <i>Jie Xu, Zhen Liu</i>	C014 - High Performance Concrete Compressive Strength Simulation Using Ensemble Intelligence Models <i>Jia-Sheng Chou</i>
		Poster 7.	Poster 19.
		II225 - Investigations on the co-sputtered ITO-ZnO transparent electrode ohmic contacts to n-GaN <i>Day-Shan Liu, Wei-Hua Hsiao, Tai-Hong Chen, Li-Wen Lai, Ching-Ting Lee, Jyun-Yong Li, Hong-Jyun Lin, Nan-Jay Wu</i>	C082 - Finite Element Analysis of Total Knee Joint Replacement during Deep Double Leg Descending Flexion <i>Shyh-Chour Huang, Usman</i>
		Poster 8.	Poster 20.
		F012 - Investigation of a Mixed Fe and Al ₂ O ₃ Particles Impregnated Polishing Pad during Polishing of Single-Crystal Silicon Carbide <i>M.Y. Tsai, C.C. Tsai</i>	3208 - A Study of Fiber Bragg Grating in Underwater Pressure Vessel Deformation Monitoring <i>Chia-Chen Chiang, Kuan-Chieh Chen, Tso-Sheng Hsieh, Chao-Wei Wu, Yung-Chang Li</i>
		Poster 9.	Poster 21.
		IV122 - Reconfiguration for the maximum dynamic wrench capability of a parallel robot <i>Chen-Ta Chen, Chih-Jer Lin</i>	3207 - A notched long-period fiber grating magnetic field sensor with ferrofluid <i>Chia-Chen Chiang, Sheng-Rong Wang</i>
		Poster 10.	Poster 22.
		IX113 - Medical Resources Governance by a Cloud-based Medical Information System <i>Chih-Kuo Ke, Jia-Chi Liao, Min-Cheng Chen</i>	VII1030 - Skip N-gram modeling for Near-Synonym Choice <i>Will Cheng-Wai Li, Shih-Ting Chen, Liang-Chih Yu</i>
		Poster 11.	Poster 23.
		VIII048 - Optical and Electrical Properties of GZO Thin Film Deposited on Flexible Substrates <i>Tao-Hsing Chen, Ting-You Chen</i>	B026 - Heliograph imaging Based on CS with latent feature maps <i>Shuzhen Wang, L.M. Wang</i>
		Poster 12.	Poster 24.
		F111 - Analysis of the real-time compensation for thermal error at CNC milling machine <i>Tsung-Chia Chen, Chia-Jung Chang</i>	