## IEEE資訊搜尋訣竅與學術生 涯晉升指南

李等 IEEE亞太區學術經理



### **Agenda**

- IEEE Introduction
- Effective Searching-literature review
- Quality Publishing-from idea to paper
- Quality Publishing-from idea to patent
- Career Development









## **IEEE Introduction**



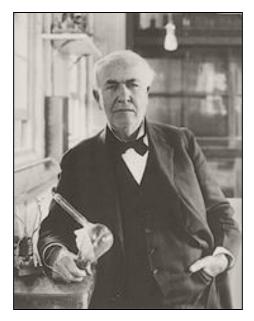


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#### **American Institute of Electrical Engineers (AIEE)**

Founding officers of the American Institute of Electrical Engineers in 1884:



**Thomas A. Edison** 



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## The Institute of Radio Engineers(IRE)

Founding member of the Institute of Radio Engineers in 1912:



**Guglielmo Marconi** 



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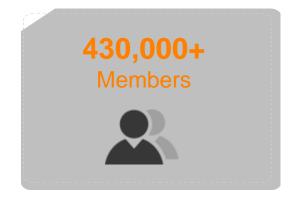


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## Today' s IEEE

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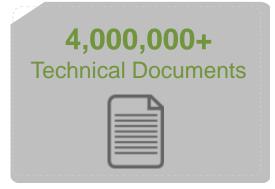


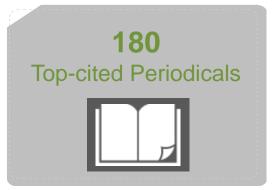




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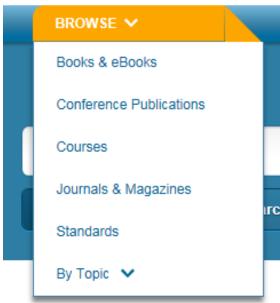
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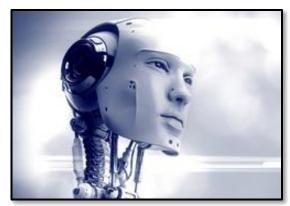


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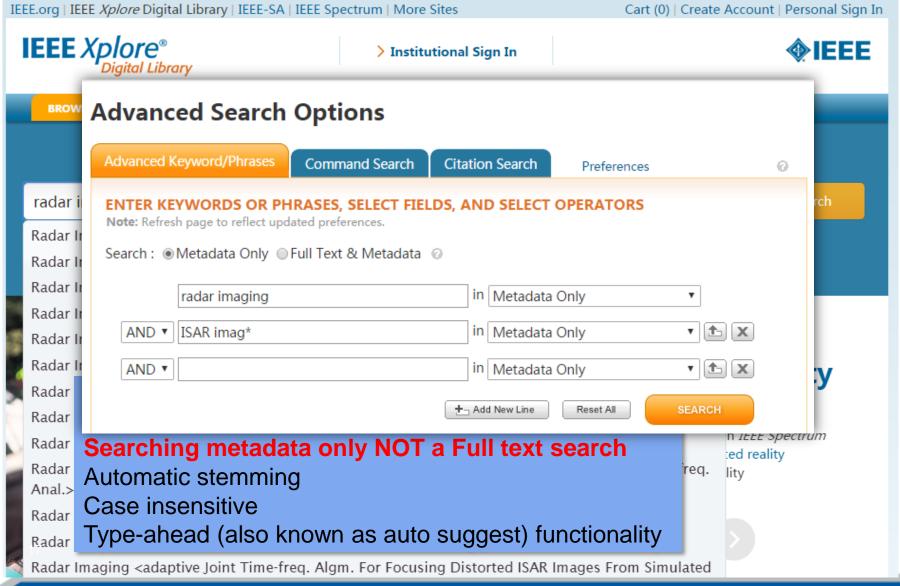
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- Conduct a Literature Review
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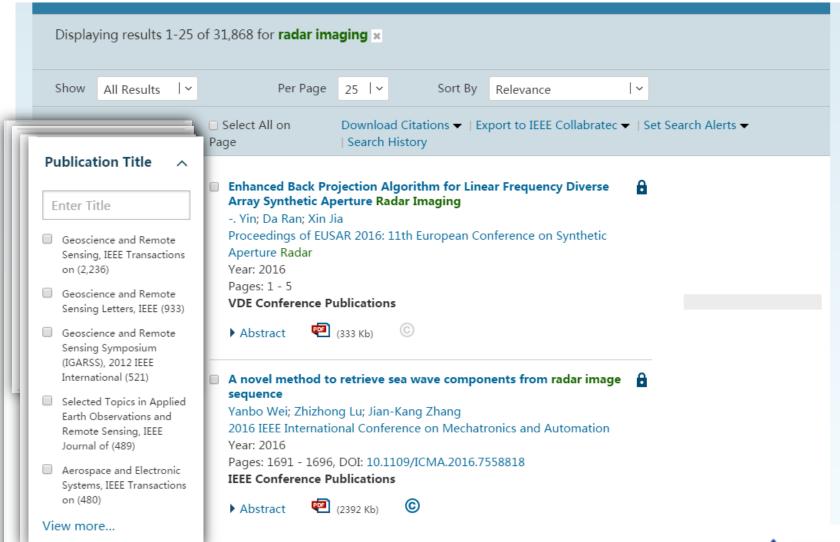




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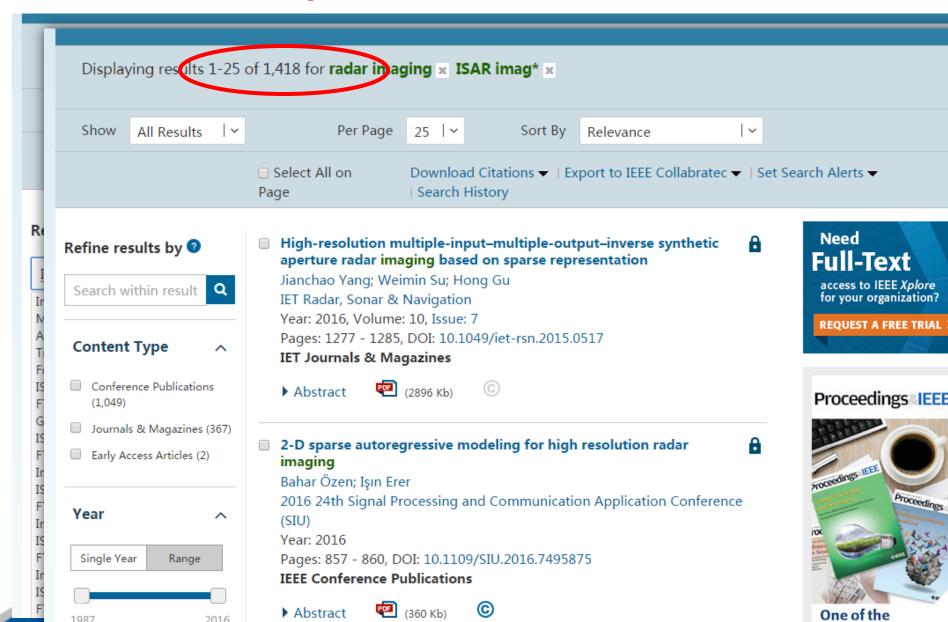


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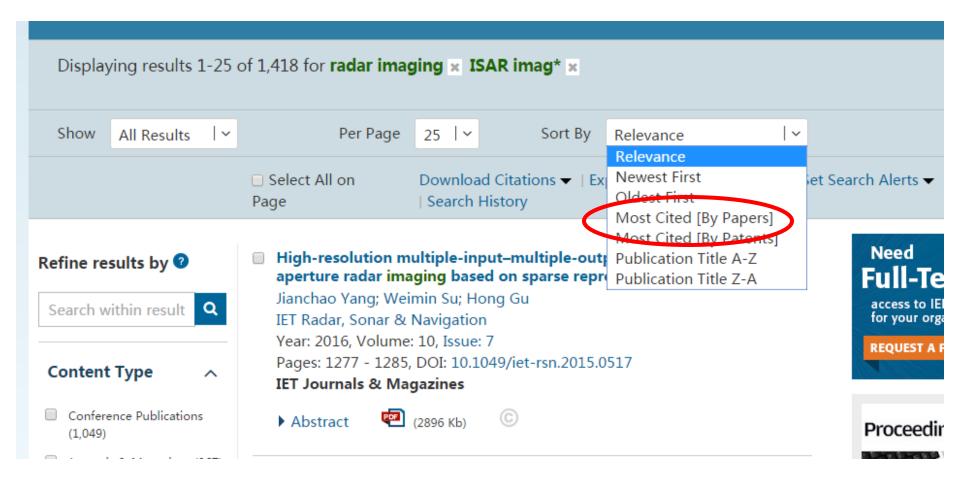




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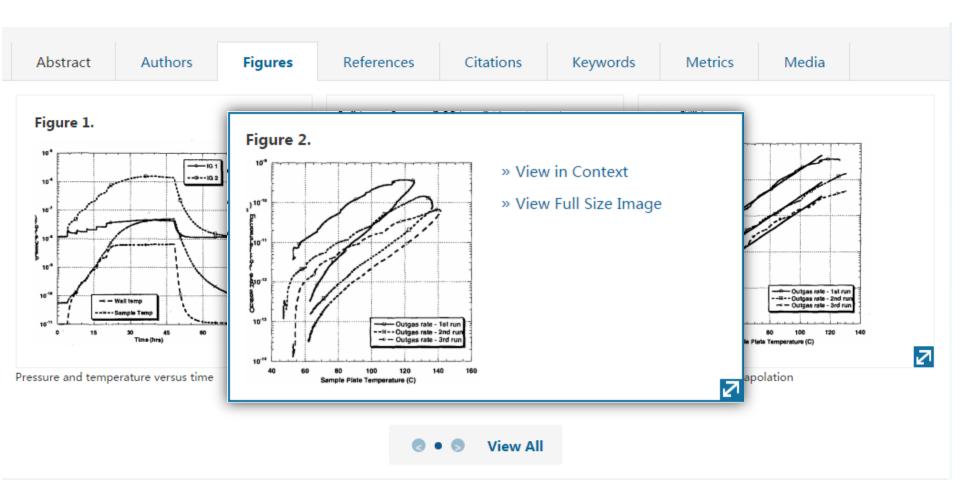
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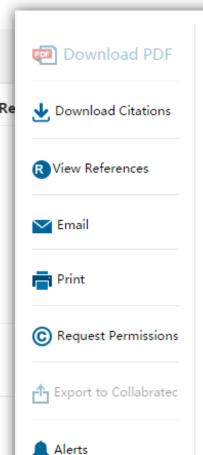
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## **Images**





#### References



#### References

- 1. F. Dörfler, F. Bullo, "Synchronization in complex networks of phase oscillators: A survey", Automatica, vol. 50, no. 6, pp. 1539-1564, 2014.
  - ▶ Show Context CrossRef
- 2. Y. Tang, H. Gao, J. Kurths, J.-A. Fang, "Evolutionary pinning control and its application in UAV coordination", IEEE Trans. Ind. Informat., vol. 8, no. 4, pp. 828-838, Nov. 2012.
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- 3. B. Shen, Z. Wang, X. Liu, "Bounded \\$H\_infty \\$ synchronization and state estimation for discrete time-varying stochastic complex networks over a finite horizon." IEEE Trans. Neural Netw., vol. 22, no. 1, pp. 145-
  - Ouick Abstract
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- with uncertain inner coupling and incomplete measurements ", IEEE Trans. Neural Netw. Learn. Syst., vol. 24, no. 12, pp. 2027-2037, Dec. 2013.
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IEEE Publications (3428)

Other Publications (809)

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Article

2. Ming He, Zongpeng Li, Chuan Wu and Xunrui Yin, "On uniform matroidal networks", Information Theory Proceedings (ISIT) 2013 IEEE International Symposium on, pp. 2730-2734, 2013, ISSN 2157-8117.

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Communications and Networking

Conference (WCNC) 2014 IEEE, pp.

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concurrent multipath transfer using

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3. Zhuofeng Li, Changgiao Xu,

network coding in wireless

networks", Wireless

2845-2850, 2014.

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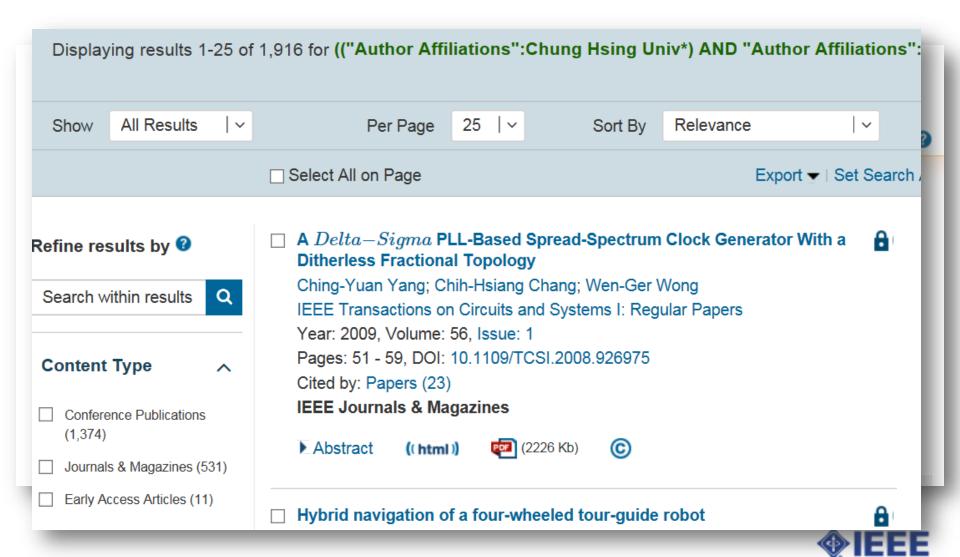
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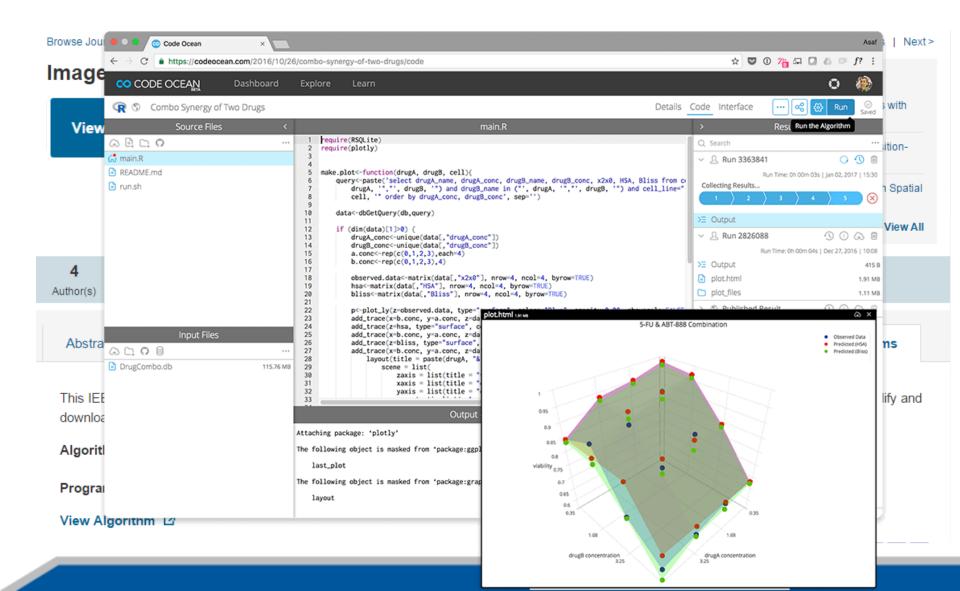
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- Gather References & Citations
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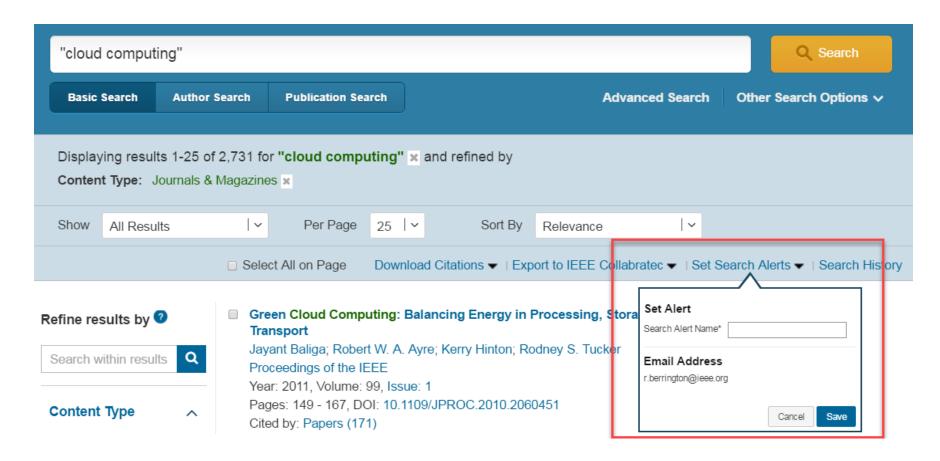


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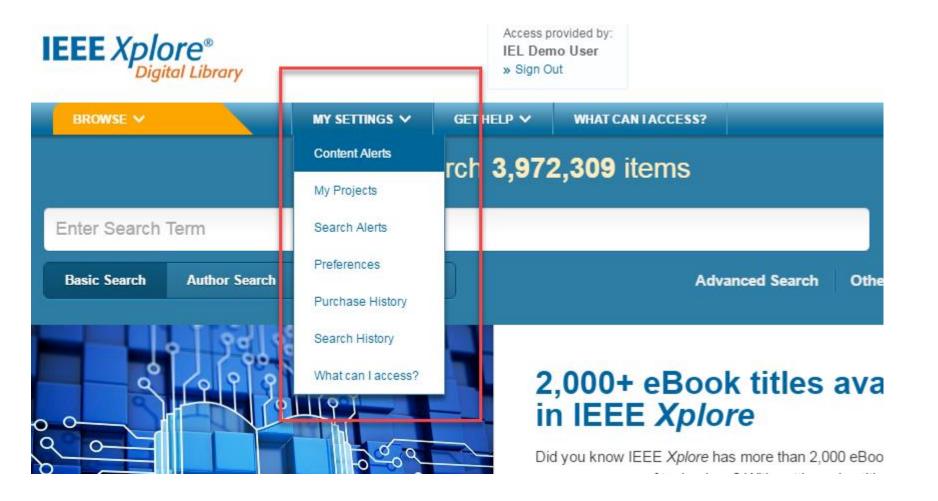
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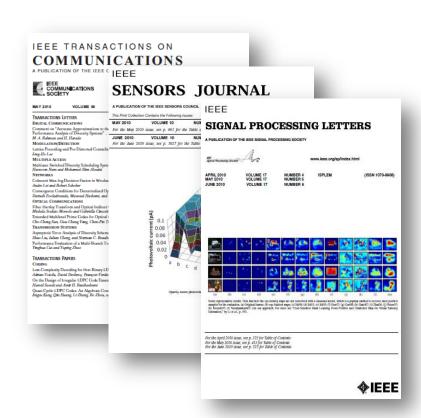
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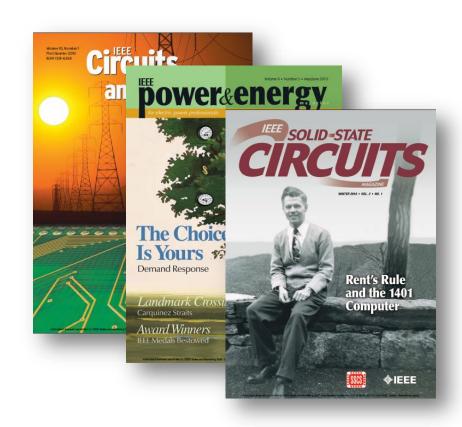
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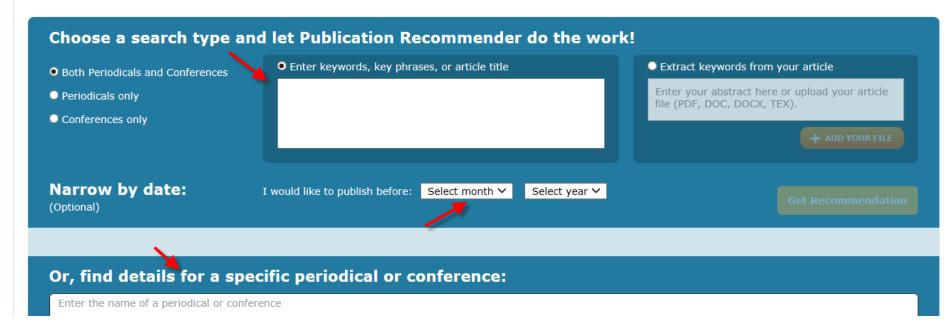
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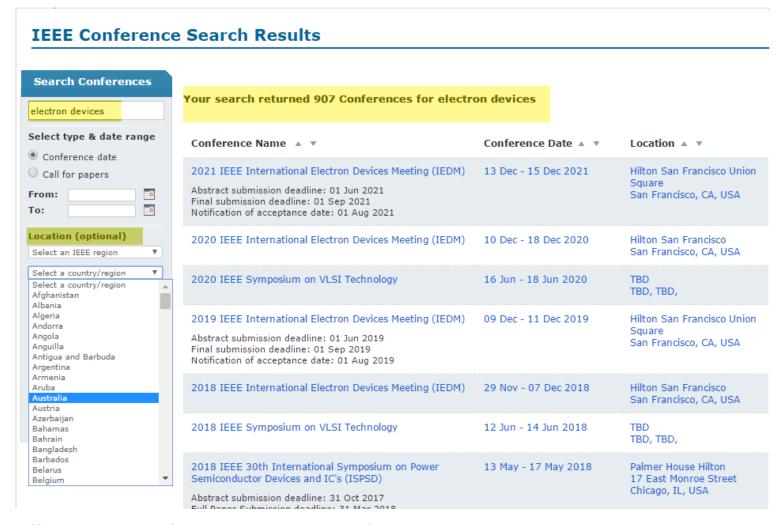
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If your paper is intended for a conference, please contact your conference editor concerning acceptable word processor formats for your particular conference.

This paragraph of the first footnote will contain the obste on which you used to the contained your paper of er review. It will also contain support information, including sponsor and financial support acknowledgment. For example, "This work was supported in part by the U.S. Department of Commerce under Grant BS123450".

The next few paragraphs should contain the authors' current affiliations, including current address and c-mail. For example, F. A. Author is with the National Institute of Standards and Technology, Boulder, CO 80305 USA (c-mail: authors) boulder aint;pov).

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#### II. GUIDELINES FOR MANUSCRIPT PREPARATION

When you open TRANS-JOUR.DOC, select "Page Layout" from the "View" menu in the menu bar (View | Page Layout), (these instructions assume MS 6.0. Some versions may have alternate ways to access the same functionalities noted here). Then, type over sections of TRANS-JOUR.DOC or cut and paste from another document and use markup styles. The pull-down style menu is at the left of the Formatting Toolber at the top of your Word window (for example, the style at this point in the document is "Text"). Highlight a section that you want to designate with a certain style, then select the appropriate name on the style menu. The style will adjust your fonts and line spacing. Do not change the font sizes or line spacing to squeeze more text into a limited number of pages. Use italics for emphasis; do not underline.

To insert images in Word, position the cursor at the insertion point and either use Insert | Picture | From File or copy the image to the Windows clipboard and then Edit | Paste Special | Picture (with "float over text" unchecked).

IEEE will do the final formatting of your paper. If your paper is intended for a conference, please observe the conference page limits.

#### A. Abbreviations and Acronyms

Define abbreviations and acronyms the first time they are used in the text, even after they have already been defined in the abstract. Abbreviations such as IEEE, SI, ac, and dc do not have to be defined. Abbreviations that incorporate periods should not have spaces: write "C.N.R.S.," not "C. N. R. S." Do not use abbreviations in the title unless they are unavoidable (for example, "IEEE" in the title of this article).

#### B. Other Recommendations

Use one space after periods and colons. Hyphenate complex modifiers: "zero-field-cooled magnetization." Avoid dangling participles, such as, "Using (1), the potential was calculated." [It is not clear who or what used (1).] Write instead, "The potential was calculated by using (1)," or "Using (1), we calculated the potential."

Use a zero before decimal points: "0.25," not ".25." Use 
"cm²," not "cc." Indicate sample dimensions as "0.1 cm × 0.2 
cm." not "0.1 × 0.2 cm²." The abbreviation for "seconds" is 
"s," not "sec." Use "Whim" or "webers, per square meter," 
not "yebers/m²." When expressing a range of values, write "7 
to 9" or "7-9." not "7-9."



## **Author Tool: PDF Checker**

#### **IEEE PDF Checker**

# Paper Title: IEEE Publication Title: Aerospace & Electronics Systems Magazine, IEEE File: Browse Upload File

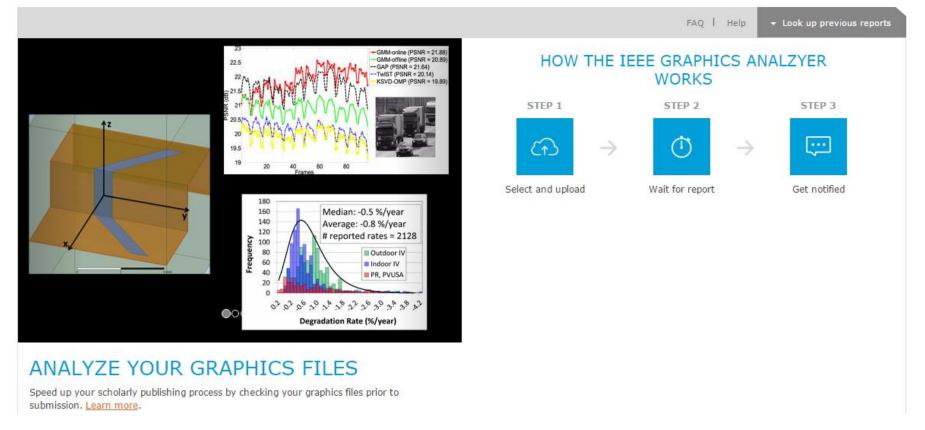
http://www.ieee.org/publications\_standards/publications/authors/pdf\_checker.html



# **Author Tool: Graphics Analyzer**



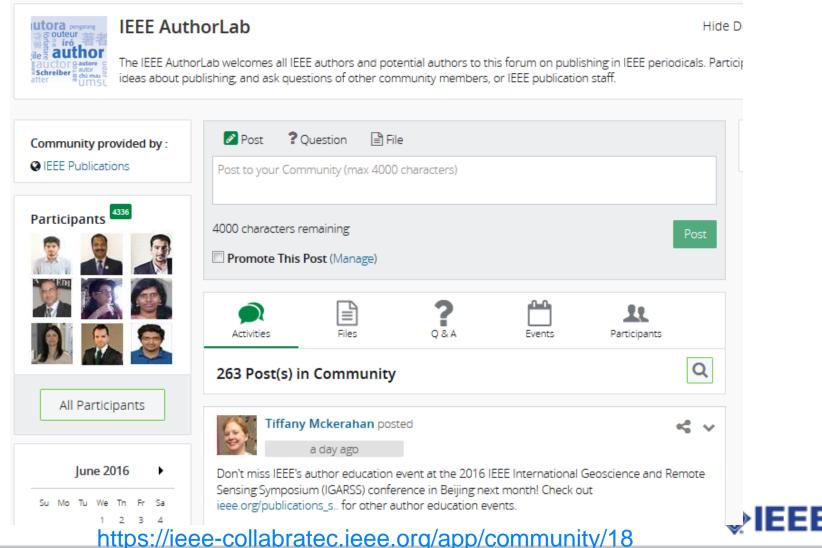




http://graphicsqc.ieee.org/



# Use AuthorLab in IEEE Collabratec for additional support and help



# Quality Publishing -from idea to patent

# **Prior Art Searching!**



# Are university researchers at risk for patent infringement?

- "Academic researchers have regularly ignored patents on key technologies as a strategy to maneuver around patent thickets and freedom-to-operate issues, but they may be more at risk than they realize."
- "An earlier report to the National Academy of Sciences suggests ... regular infringement of patents by university researchers, which is neither a sustainable nor a desirable solution."
  - Amy Yancey & C Neal Stewart Jr. **Are university researchers at risk for patent infringement?** Nature Biotechnology 25, 1225 1228 (2007)



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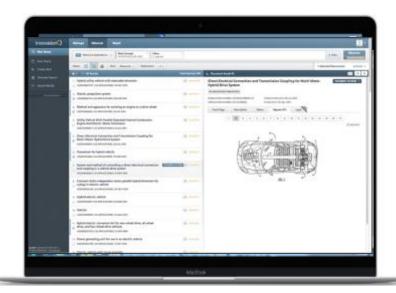
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- Invention disclosures of <u>licensable technology</u> from universities



## **Innovative Features**

### Patented Semantic search platform

- Patented IQ+ search engine allows users to find valuable content that is buried in complex patent and technical documents, allowing IP professionals to more effectively analyze prior art and increase productivity.
- Visualizations for Competitive Intelligence and Landscaping
- Visualize concepts with the Map tool
  - A visual representation of critical documents based on concepts and meaning extracted from content. Easily identify whitespace and quickly highlight documents by specified organizations.
- More features to streamline your workflow
  - Filters, collaboration tools, save results, export







# **Prior Art Searching: The Old Way**

- Understand the patent application
- Identify key concepts of the invention
- Identify databases to search
- Create sets of synonyms
- Develop a search strategy
- Perform an author/inventol search
- Save your search history





## What if You Could Turn This...

## Query:

ALL=(surgical OR curve OR segment) AND suture AND (((intervertebral OR cutting OR member OR arcuate OR guide)
NEAR5 (bone OR seal)) SAME (tissure OR jaw\*)) AND (Instrument OR cannula\*1) AND DP>=(19930101) AND IC=(H01L 39/02 OR H01L 39/12 OR H01F 38/14)



## **Into This?**

## Query:

A surgical cannula with curved segments used to guide a medical instrument through a curved or bowed path



# Discover Unreturned Results Through InnovationQ Plus

## **Boolean:**

Autonomous vehicle

### **Concept Search:**

Autonomous vehicle

Car

Automobile

Driver

Truck

Robot

**GPS** 

Transport

Satellite

Navigation

Network

Locomotive

**Fuel** 

Transport

Route

Passenger

Brake

Engine

Accelerator

Van

**Pilot** 

Self driving

Wheels

Tram

Train

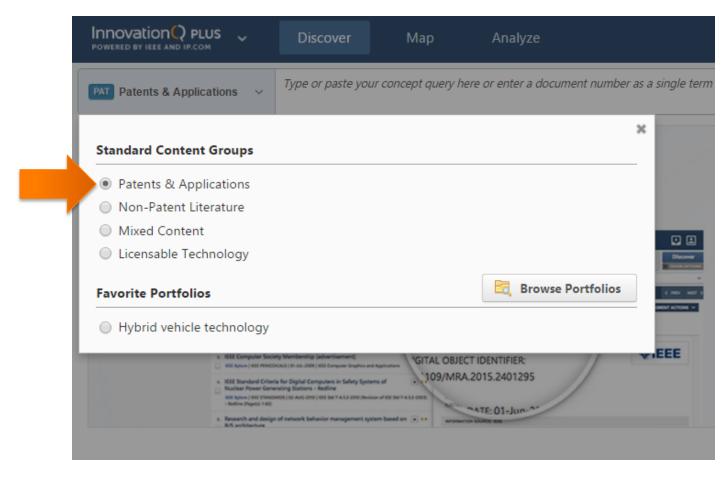
Bus

Taxi



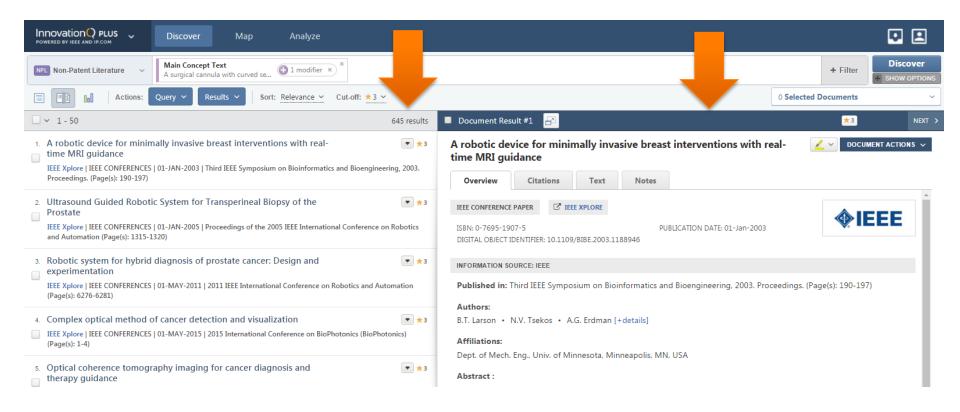
# **Discover: Content Groups**

Search Patents & Applications, Non-Patent Literature, Mixed Content or Licensable Technology





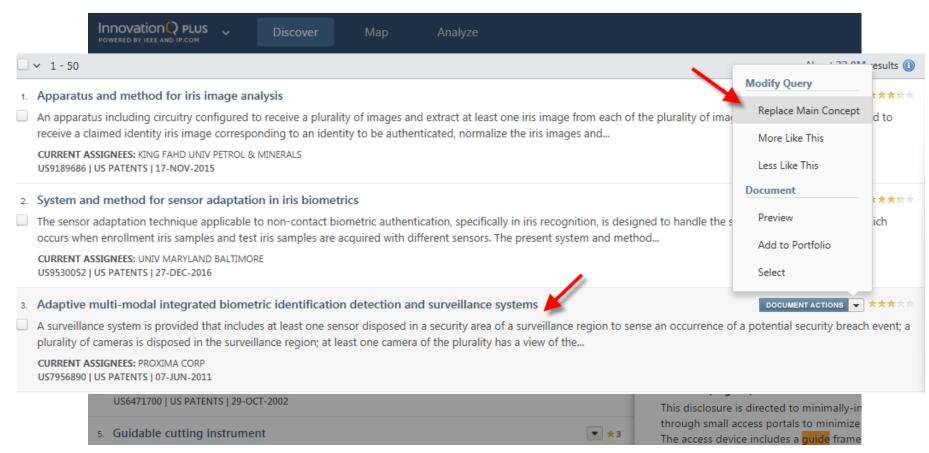
# **Discover: Results Split View**





# **Add Concept Modifiers**

Add terms and phrases to your concept and refine result set with "More Like This" and "Less Like This"

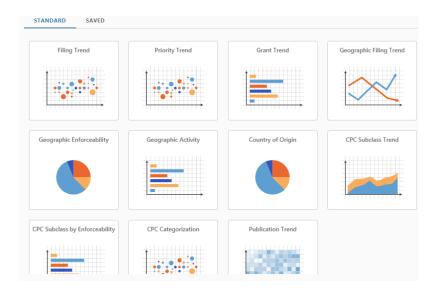




## **Build a Patent Portfolio**

#### **Technical Intelligence:**

- Knowledge of the "art" (subject matter)
- 2. Prior Art searching
- 3. Technology trends
- 4. Technology applications (old, current and future)

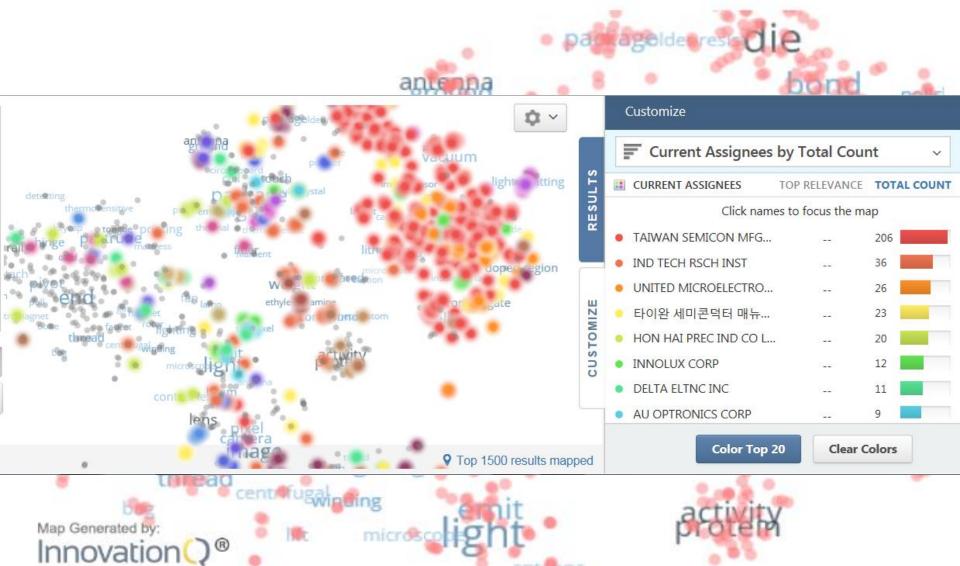


#### **Competitive Intelligence:**

- 1. Who (organizations) are in this tech space? (assignee/applicant)
- 2. Who (people) are the professionals? (author/inventor)
- 3. Who are they collaborating with?
- 4. What are they doing?
- 5. How are they doing it? (patent claims)
- 6. How can I track these alliances or competitors? (search alerts)
- 7. Where are they interested in doing business?



## Discover What You Don't Know



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For more information: innovationqplus.ieee.org



# Career development with IEEE



# **IEEE Membership Grade**

- Student Member
- Associate Member/Member
- Senior Member
  - Senior Member Grade
- Fellow
  - Fellow Program
- Life Member/Fellow

http://www.ieee.org/membership\_services/membership/join/
emember.html



## **IEEE Student Portfolio**

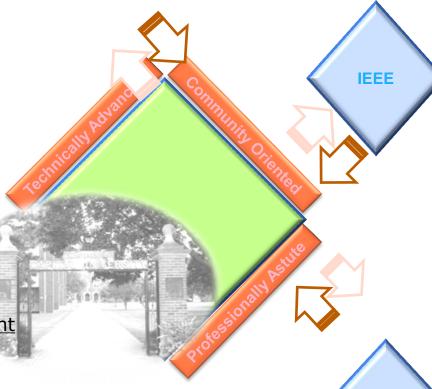
#### <u>Technical Programs &</u> <u>Opportunities</u>

- ➤ Technical Chapters
- **≻**IEEEXtreme
- ➤ Robotics & Paper Contests
- ➤ Project Showcases
- ➤ Technical Speakers
- ➤ IEEE Potentials
- **≻**Discounts
- ➤ Student Tracks

#### Volunteer Development

- ➤ Student Congresses
- ➤ Training Webcasts
- Student Branch

**Development Resources** 



#### <u>Public Programs</u> <u>& Opportunities</u>

- ➤ Humanitarian Initiatives
- >President's Change the
- World Competition
- ➤ Awards & Recognition

#### <u>Career Programs</u> <u>& Opportunities</u>

- ➤ IEEE ResumeLab
- ➤ Soft-skill Seminars
- **>**Professional

IEEE

Awareness Events

- ➤ Engineers Week
- ➤ Networking events
- >Ethics Competitions





IEEE ResumeLab is an online service that allows IEEE members to develop a resume or curriculum vitae using specialized tools tailored for each step of the job seeking process.







www.ieee.org/resumelab



# IEEE **JobSite**

Are You An Employer? If you're looking to post a job, go to our employer website. (Thanks, but I'm searching for a job).)



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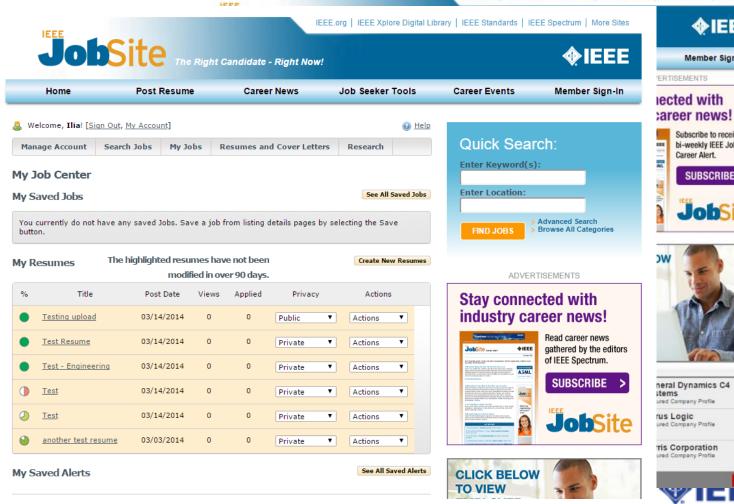
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# IEEE Standard Education-Connect with Industry Leaders

#### **Standards Education**

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Student Application Papers

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Glossary

Announcements

**Additional Resources** 

As the world's leading standards developer, IEEE is also a leading source of information and resources on standards, their applications, and their impact on designing new products, processes, and services.

#### On this Page:

- > Commitment to standards education
- > Resources

#### Commitment to standards education



IEEE is committed to:

promoting the importance of standards in meeting technical, economic, environmental, and societal challenges;

disseminating learning materials on the application of standards in the design and development aspects of educational programs;

- actively promoting the integration of standards into academic programs;
- providing short courses about standards needed in the design and development phases of professional practice.

t top of page

Resources

"If you control an industry' s standards, you control it lock, stock and ledger."

"Standardization programs offer one of the best, most important means to evaluate current technology and provide a glimpse of where future technology innovations may occur.

The Strategic Value of Standards Education
A Global Survey conducted by
the Center for Global Standards Analysis



## **IEEE Collaboratec-Online Community**





#### **IEEE Young Professionals**

IEEE Young Professionals is a global community of enthusiastic, dynamic, and innovative members and volunteers, who are passionate about the development and advancement of new technologies. Our products, services, programs, and initiatives aim to address the needs of early-career professionals pursuing technology-related careers in engineering, business, management, marketing, and law. IEEE is committed to helping young professionals evaluate their career goals, polish their professional image, and create the building blocks of a lifelong and diverse professional network. Participate in discussions, post links, watch videos, participate in polls and more by accessing

Learn More





1060 participants



#### Women in Leadership

This community supports and advances the leadership aspirations of women engineers and scientists, in conjunction with an annual conference. Participate in discussions, post links, watch videos, participate in polls and more by accessing this community on G+. Simply attach your Google+ account and select the "Access now" or "Request invitation" button

Learn More









301 participants

## Scholarships, Grants, and Fellowships

http://www.ieee.org/membership\_services/membership/students/awards/sag.html

#### Scholarships, grants, and fellowshi

IEEE Charles LeGeyt Fortescue Fellowship: This so approximately US\$24,000 and is awarded to a first-year master's degree in Electrical Engineering at an engineer located in the United States.

IEEE Computational Intelligence Society Conferer a number of travel grants to assist IEEE Student meml (Neural Networks Society) sponsored conferences.

IEEE Computational Intelligence Society Summer scholarships of US\$1,000 to US\$4,000 for deserving gr support for their research during a summer period.

IEEE Computer Society Merwin Scholarship: This sactive leaders in the IEEE Computer Society Student Escholarships are available and awarded on an annual b

IEEE Dielectrics and Electrical Insulation Society of fellowship was designed to support graduate research in Two US\$7,500 or three US\$5,000 scholarships are away

IEEE Electron Devices Society Graduate Student F recognizes, and supports graduate-level study and rest fellowship awarded to students in each of the main ged Europe/Mid-East/Africa, Asia/Pacific.

IEEE James C. Klouda Memorial Scholarship Awa Memorial Scholarship awards a scholarship to a qualifi an electrical engineering degree with emphasis in the fi a related discipline, from an accredited US university of **IEEE Life Members' Fellowship in Electrical History:** This fellowship in Electrical History supports either one year of full-time graduate work in the history of electrical science and technology at a college or university of recognized standing, or up to one year of post-doctoral research for a scholar in this field who has received his or her Ph.D. within the past three years. The stipend is US\$17,000, and a research budget of US\$3,000 is available.

IEEE Life Member Graduate Study Fellowship in Electrical Engineering: This renewable US\$10,000 fellowship is awarded annually to a first-year, full-time graduate student obtaining his or her master's degree for work in the area of electrical engineering, at an engineering school/program of recognized standing worldwide.

**IEEE Masters Student Fellowship:** This one-year fellowship is awarded to promote, recognize, and support graduate masters-level study and research within the Electron Devices Society's field of interest. The prize is US\$2,000 and a plaque to the student, to be presented by the dean or department head of the student's enrolled graduate program.

IEEE Microwave Theory and Techniques Society Graduate Fellowships: This program was created to support graduate research studies in microwave engineering. Fellowships are in the amount of US\$5,000 each, and the deadline for submission is 30 November annually.

**IEEE Nuclear and Plasma Sciences Society Graduate Scholarship Award:** This scholarship recognizes contributions to the fields of nuclear and plasma sciences. Scholarships are in the amount of US\$500 and are awarded annually, with submission deadline on 31 January.

**IEEE Photonics Society Graduate Student Fellowship Program:** This fellowship program provides ten fellowships of US\$5,000 each. They will be awarded based on the student membership in each of the main geographic regions: Americas, Europe/Mid-East/Africa, Asia/Pacific.

**IEEE Power and Energy Society Scholarship Program:** This program is being offered for the second year with scholarships to students. The prize is US\$2,000 and a plaque to the student, to be presented by the Dean or Department head of the student's enrolled graduate program.

# **Student Travel grants**

#### IEEE Student Travel Grants

Student Program **Highlights** 

• TFFF Student IEEE is pleased to offer a number of Student Travel Grants to assist Student Members in attending conferences and presenting papers. Additional student grant opportunities may be found by visiting an IEEE Conference Web site(s) matching your technical interest.

ent dent e(s)

- - Student Scholarships
- IEEE Potentials Magazine
- Student Member Benefits
  - Find IEEE Student Branches by Region
- Student Volunteer Resources

#### IEEE Societies Offering Grants



Below are some of the grants offered by IEEE Societies that are designated for Student Members only. To apply, you will need to follow the appropriate link to obtain eligibility and applications.

- > IEEE Circuits and Systems Society
- > IEEE Computational Intelligence Society
- > IEEE Communications Society
- > IEEE Engineering in Medicine and Biology Society

- > IEEE Industry Applications Society
- > IEEE Information Theory Society
- IEEE Instrumentation & Measurement Society
- > IEEE Microwave Theory and **Techniques Society**

- > IEEE Nuclear and Plasma Sciences Society
- IEEE Power Electronics Society
- > IEEE Signal Processing Society
- > IEEE Solid-State Circuits Society



# **IEEEXtreme Competition**



IEEEXtreme is a global challenge in which teams of IEEE Student members compete in a 24-hour time span against each other to solve a set of programming problems.

#### **Grand Prize:**

All expense-paid trip to an IEEE conference of choice, anywhere around the world!

www.ieee.org/xtreme





Place	Country		Team Name
1		Iceland	viRUs
2		USA	WhySoConcrete
3		Sri Lanka	oops

IEEE.tv ANNOUNCEMENT: <a href="http://goo.gl/Du8993">http://goo.gl/Du8993</a>

#### **2014 Competition Stats**

- 2,288 teams registered
  - 5,900 students; 600 proctors; 100 volunteers/staff
- 63 countries and 480 universities represented
- More than 320,000 solutions submitted
- Expanded committee includes Public Relations Ambassadors

### 24 October 2015

0:00:00 GMT - 23:59:59 GMT









#### **Business and Leadership Model**

- Adopted new business model towards cost containment
- Provided digital gift bundle to all participants and tangible prize bundle to top 100 teams
- Planning move from ad-hoc to standing subcommittee of SAC and adoption of proven infrastructure to ensure future success



# **Student Branch Activities**

The IEEE Student Branch is an operating organizational unit of IEEE at the college/university level constituted by a minimum of twelve (12) IEEE student members

- Goal: Engage students in the mission, benefits, and opportunities of the IEEE
- Sponsors activities and events with technical, professional, and humanitarian aspirations
  - Guest speakers
  - Paper contests
  - Local community initiatives
- Fun, too!
  - Social events to bring together students with faculty
  - PI Day





## **IEEE Student Branches in Taiwan**

Taipei Section	Chung Yuan Christian University
	Nat'L Taiwan Univ of Sci & Tech
	National Central Univ
	National Changhua University of Educatio
	National Chung Hsing University
	National Taipai University of Technology
	National Taiwan Univ
	National Tsing Hua University
	Natl Chiao Tung Univ
	Natl Sun Yat-Sen Univ
	Natl Taiwan Ocean Univ
	Yuan-Ze Univ
Tainan Section	Natl Cheng Kung Univ



http://www.ieee.org/go/clientservices ces http://www.ieee.org/training

有問題請聯繫 李箐 li.q@ieee.org

