2003 Annual R & D Report

Sirindhorn International Institute of Technology
Thammasat University
A Leading Teaching / Learning and Research Institute
Building Facilities Engineering Program
2003 Publications

International Journals


National Journals


International Conferences


National Conferences


Book


Building Facilities Engineering Program

Faculty Members, 2003

1. Dr. Somnuk Tangtermsirikul  
Associate Professor and Head of the School of Building Facilities and Civil Engineering, and Chairperson of Building Facilities Engineering Program

2. Dr. Amorn Pimanmas  
Assistant Professor and Deputy Chairperson of Building Facilities Engineering Program
Civil Engineering Program

2003 Publications

**International Journals**


**National Journals**


**International Conferences**


Civil Engineering Program
Faculty Members, 2003

1. Dr. Pruettha Nanakorn  Associate Professor and Chairperson of Civil Engineering Program
2. Dr. Winyu Rattanapitikon  Associate Professor and Institute Secretary of SIIT
3. Dr. Taweep Chaisomphob  Associate Professor
4. Dr. Napat Harnpornchai  Assistant Professor
5. Dr. Krishna Murari Neaupane  Assistant Professor
6. Dr. Mongkut Piantanakulchai  Lecturer

Electrical Power Engineering Program
2003 Publications

International Journals


**International Conferences**


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**Electrical Power Engineering Program**

**Faculty Members, 2003**

1. Dr. Issarachai Ngamroo Assistant Professor and Chairperson of Electrical Power Engineering Program
2. Dr. Jovitha Jerome Assistant Professor (Until June 2003)
3. Dr. Pichai Jintakosonwit Lecturer (Joined SIIT in May 2003)

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**Industrial Engineering Program**

**2003 Publications**

**International Journals**


**International Conferences**


**Industrial Engineering Program**

**Faculty Members, 2003**

1. Dr. Navee Chiadamrong  
   Associate Professor, Head of the School of Manufacturing Systems and Mechanical Engineering, and Chairperson of Industrial Engineering Program

2. Dr. Pisal Yenradee  
   Associate Professor and Assistant Director for Special Affairs

3. Dr. Ruengsak Kawtummachai  
   Assistant Professor

4. Dr. Nguyen Van Hop  
   Assistant Professor

5. Dr. Chakguy Prakasvudhisarn  
   Lecturer

6. Dr. Karndee Prichanont  
   Instructor (Joined SIIT in November 2003)

**Mechanical Engineering Program**

**2003 Publications**

**International Journals**


**National Journals**


**International Conferences**


Book


Mechanical Engineering Program

Faculty Members, 2003

1. Dr. Bundit Limmeechokchai Associate Professor and Chairperson of Mechanical Engineering Program
2. Dr. Satha Aphornratana Associate Professor
3. Dr. Thananchai Leephakpreeda Associate Professor
4. Dr. Vladimir I. Kouprianov Associate Professor
5. Dr. Michele Pozzi Assistant Professor
6. Dr. Pichai Rusmee Assistant Professor
7. Dr. Phiphat Bijayendrayodhin Lecturer

Telecommunications Program

2003 Publications

International Journal


International Conferences


Book


Telecommunications Program
Faculty Members, 2003

1. Dr. Suwan Runggeratigul Assistant Professor, Acting Head of the School of Communications, Instrumentations and Control, and Chairperson of Telecommunications Program
2. Dr. Sawasd Tantaratana Professor and Deputy Director of SIIT
3. Dr. Banlue Srisuchinwong Assistant Professor and Executive Assistant Director
4. Dr. Chalie Charoenlarpnopparut Assistant Professor
5. Dr. Duangrat Eungdamrong Assistant Professor (Joined SIIT in January 2003)

Energy Technology Program
2003 Publications

International Journals


National Journal


International Conferences


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**Energy Technology Program**

**Faculty Members, 2003**

1. Dr. Supachart Chungpaibulpatana  
   Associate Professor, Head of the School of Power, Energy and Environmental Technology, and Chairperson of Energy Technology Program

2. Dr. Prida Wibulswas  
   Professor and Director of SIIT

3. Dr. Lalita Tantimuratha  
   Assistant Professor

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**Environmental Technology Program**

**2003 Publications**

**International Journals**


**National Journals**


**International Conferences**


Environmental Technology Program  
Faculty Members, 2003

1. Dr. Alice Sharp Assistant Professor and Chairperson of Environmental Technology Program
2. Dr. Suwanchai Nitisoravut Assistant Professor
3. Dr. Sandhya Babel Assistant Professor
4. Dr. Viboon Sricharoenchaikul Assistant Professor

Information Technology Program  
2003 Publications

International Journals


National Journal


International Conferences


**Information Technology Program Faculty Members, 2003**

1. Dr. Thanaruk Theeramunkong Assistant Professor and Chairperson of Information Technology Program
2. Dr. Ekawit Nantajeewarawat Associate Professor, Assistant Institute Secretary
3. Dr. Stanislav S. Makhanov Associate Professor
4. Dr. Komwut Wipusitwarakun Assistant Professor and System Manager of Computer Center
5. Dr. Mud-Armeen Munlin Assistant Professor
6. Dr. Bunyarit Uyyanonvara Lecturer
7. Dr. Kritchalach Thitikamol Lecturer (Until October 2003)
Instrumentation and Control Systems Program

2003 Publications

International Journal


National Journal


Instrumentation and Control Systems Program

Faculty Members, 2003

1. Dr. Waree Kongprawechnon Assistant Professor and Acting Chairperson of Instrumentation and Control Systems Program
2. Dr. Prinya Tantaswadi Assistant Professor

Management Technology Program

2003 Publications

International Journal


International Conferences


**National Conference**


**Management Technology Program**

**Faculty Members, 2003**

1. Dr. Somrote Komolavanij  
   Assistant Professor, Acting Head of the School of Information and Management Technology, and Chairperson of Management Technology Program

2. Dr. Suebsak Nanthavanij  
   Associate Professor

3. Dr. Junalux Chalidabhongse  
   Assistant Professor and Assistant Director for Student Affairs

4. Dr. Pornpimol Chongphaisal  
   Lecturer (Half-time, joined SIIT in June 2003)

**Department of Common and Graduate Studies**

**2003 Publication**

**International Journal**


**Department of Common and Graduate Studies**

**Faculty Members, 2003**

1. Dr. Damrong Khummongkol  
   Professor of Chemical Engineering, Head of the Department of Common and Graduate Studies

2. Dr. Luckhana Lawtrakul  
   Assistant Professor and Chairperson of General Studies

3. Dr. David Harding  
   Assistant Professor

4. Dr. Pisanu Toochinda  
   Lecturer (Joined SIIT in November 2003)

<table>
<thead>
<tr>
<th>Program</th>
<th>Principal Investigator</th>
<th>Title</th>
<th>Sponsoring Organization</th>
<th>Total Project Budget (Baht)</th>
<th>Duration</th>
</tr>
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<td>BF</td>
<td>Dr. Somnuk T.</td>
<td>Bleeding of Fly Ash Concrete</td>
<td>Electricity Generating Authority of Thailand (EGAT)</td>
<td>200,000</td>
<td>Nov. 2001- Present</td>
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<tr>
<td>BF</td>
<td></td>
<td>Improvement of Strength and Durability of Laminated Cementitious Fiber Board</td>
<td>Mahaphant Fiber-Cement Public Co., Ltd.</td>
<td>190,200</td>
<td>Oct. 2002- Feb. 2004</td>
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<td>BF</td>
<td></td>
<td>The Feasibility Study on Commercial Investment and Marketing Strategy for Mae Moh Lignite Ashes</td>
<td>Electricity Generating Authority of Thailand (EGAT)</td>
<td>100,000</td>
<td>Jan. 2003 - Present</td>
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<td>BF</td>
<td></td>
<td>Chloride Movement and Sulfates Attack Models for Concrete with Mae Moh Fly Ash</td>
<td>Electricity Generating Authority of Thailand (EGAT)</td>
<td>400,000</td>
<td>Dec. 2002 - Present</td>
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<tr>
<td>BF</td>
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<td>Early Age Strength Development of Concrete with Mae Moh Fly Ash</td>
<td>Electricity Generating Authority of Thailand (EGAT)</td>
<td>400,000</td>
<td>Dec. 2002 - Present</td>
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<td>A Study on Carbonation of Concrete with Mae Moh Fly Ash</td>
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<td>BF</td>
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<td>Development of Self-Compacting Concrete for Application in Thailand</td>
<td>National Metal and Materials Technology Center (MTEC)</td>
<td>596,750</td>
<td>Apr. 2003 - Present</td>
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<td>BF</td>
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<td>Use of CaCO₃ Powder in Concrete</td>
<td>Surint Omya Chemicals (Thailand) Co., Ltd.</td>
<td>216,500</td>
<td>Jan. 2004 - Present</td>
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<tr>
<td>CE</td>
<td>Dr. Taweep C.</td>
<td>Loading Test for 3 Flyover Bridges Crossing Srinakarin Road: On-Nuch, Udomsuk, Pattanakarn</td>
<td>Unique Engineering &amp; Construction Co., Ltd.</td>
<td>404,800</td>
<td>May 2003 – Jan. 2004</td>
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<td>CE</td>
<td></td>
<td>Applications of the Smartruss System to Roof Construction in Thailand</td>
<td>BlueScope Lysaght (Thailand) Ltd.</td>
<td>736,000</td>
<td>May 2003 - Present</td>
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<td>CE</td>
<td>Dr. Taweep C.</td>
<td>A Universal Joint System for Steel Houses</td>
<td>Siam Yamato Steel Co., Ltd.</td>
<td>48,500</td>
<td>Aug. 2003 - Nov. 2003</td>
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<td>CE</td>
<td>Dr. Pruettha N.</td>
<td>Loading Test of the National Housing Authority’s Ua-Arthorn Steel House</td>
<td>BlueScope Lysaght (Thailand) Ltd., The Thai Olympic Fiber-Cement Co., Ltd., Viva Industried Co., Ltd., Siam Gypsum Industry (Saraburi) Co., Ltd.</td>
<td>160,000</td>
<td>Jul. 2003 - Nov. 2003</td>
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<td>Program</td>
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<td>Duration</td>
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<td>INS</td>
<td>Dr. Prinya T.</td>
<td>Optical Birefringence Modulator</td>
<td>Thaikhadi Research Institute, TU</td>
<td>100,000</td>
<td>Nov. 2001 - May 2003</td>
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<tr>
<td>TC</td>
<td>Dr. Banlue S.</td>
<td>VLSI Implementation of a Symmetric Cipher Using Cellular Automata</td>
<td>National Electronics and Computer Technology Center (NECTEC)</td>
<td>344,547</td>
<td>Sep. 1997 - Present</td>
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<td></td>
<td></td>
<td>Development of a Standard Cipher for Telephone Through TMS 320</td>
<td>National Electronics and Computer Technology Center (NECTEC)</td>
<td>751,620</td>
<td>Feb. 1995 - Present</td>
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<td></td>
<td>Dr. Chalie C.</td>
<td>Applications of Groebner Bases in Multidimensional Systems and Signal Processing</td>
<td>The Thailand Research Fund (TRF)</td>
<td>480,000</td>
<td>Jul. 2002 - Present</td>
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<td></td>
<td>Dr. Sawasd T.</td>
<td>VLSI Design and Implementation of Multiplier-Free Digital Signal Processors</td>
<td>National Electronics and Computer Technology Center (NECTEC)</td>
<td>1,582,295</td>
<td>Aug. 1997 - Present</td>
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<td>IE</td>
<td>Dr. Navee C.</td>
<td>Research on Supply Chain Management in Thailand</td>
<td>Thaikhadi Research Institute, TU</td>
<td>129,800</td>
<td>Oct. 2002 - Apr. 2004</td>
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<td>ME</td>
<td>Dr. V. I. Kuprianov</td>
<td>Influence of Coal Quality and Operating Conditions on Thermal Efficiency and Environmental Performance of Coal-fired Boilers of a Thermal Power Plant</td>
<td>Joint Graduate School of Energy &amp; Environment (JGSEE)</td>
<td>175,000</td>
<td>Jun. 2002 - Oct. 2003</td>
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<tr>
<td></td>
<td>Dr. Supachart C. and Dr. Phiphat B. (with 3 Universities)</td>
<td>R&amp;D in Utilization of Vegetable Oils in Diesel Engines</td>
<td>National Research Council of Thailand (NRCT)</td>
<td>3,500,000</td>
<td>Jan. 2002 - Present</td>
</tr>
<tr>
<td></td>
<td>Dr. Kritchalach T.</td>
<td>Supporting Shared Memory Parallel Applications on Cluster of Heterogeneous Computers</td>
<td>The Thailand Research Fund (TRF)</td>
<td>400,000</td>
<td>Jul. 2001 - Jun. 2003</td>
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<td></td>
<td>Dr. S.S. Makhanov</td>
<td>A New Software for 5-Axis Machining, Optimization, Simulation, and Verification</td>
<td>National Electronics and Computer Technology Center (NECTEC)</td>
<td>1,383,600</td>
<td>Oct. 2000 - Sep. 2003</td>
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<td></td>
<td>Dr. Thanarak T.</td>
<td>Research and Development of Resources for Processing Very Large-Scaled Information on the Internet - Information Retrieval and Data Mining</td>
<td>National Electronics and Computer Technology Center (NECTEC)</td>
<td>1,207,192</td>
<td>Mar. 2002 - Apr. 2003</td>
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<td>Program</td>
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<td>Total Project Budget (Baht)</td>
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<td></td>
<td>Dr. Bundit L.</td>
<td>Long-term Energy and Environmental Planning in Thailand</td>
<td>Joint Graduate School of Energy &amp; Environment (JGSEE)</td>
<td>250,000</td>
<td>June 2001 - Oct. 2003</td>
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<td></td>
<td>Direct-Contact Ice Slurry Production System</td>
<td>National Science and Technology Development Agency (NSTDA)</td>
<td>800,000</td>
<td>Dec. 2001 - Dec. 2003</td>
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<td>ET</td>
<td>Dr. Bundit L. and Dr. Supachart C.</td>
<td>Long-term Energy and Environmental Planning in Asia (ARRPEEC II)</td>
<td>Swedish International Development Cooperation Agency (Sida) &amp; AIT</td>
<td>500,000</td>
<td>Oct. 2002 - Aug. 2004</td>
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<td></td>
<td>Dr. Supachart C.</td>
<td>Development of a Built-in Storage Solar Water Heater</td>
<td>80,000</td>
<td>Feb. 2002 - Present</td>
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<td>Dr. Supachart C. and Dr. Phiphat B.</td>
<td>R&amp;D in Utilization of Vegetable Oils in Diesel Engines</td>
<td>National Research Council of Thailand (NRCT)</td>
<td>3,500,000</td>
<td>Jan. 2002 - Present</td>
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<td>EV</td>
<td>Dr. Suwanchai N.</td>
<td>Contamination Fate, and Transportation of Lead in Khli Ti Watershed</td>
<td>Joint Graduate School of Energy &amp; Environment (JGSEE)</td>
<td>120,000</td>
<td>Jan. 2004 - Present</td>
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<td>CGS</td>
<td>Dr. Luckhana L.</td>
<td>Molecular Dynamics Simulations of Mutant Types of HIV-1 Reverse Transcriptase: Structural Information for Drug Development</td>
<td>The Thailand Research Fund (TRF)</td>
<td>480,000</td>
<td>Jul. 2003 - Jun. 2005</td>
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SIIT Doctoral Faculty Members’ 2003 Publications

<table>
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<th>Publications(^{(1)})</th>
<th>2003</th>
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<tr>
<td>International Journal Papers</td>
<td>32.05(^{(3)})</td>
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<td>Regional/National Journal Papers</td>
<td>15.67</td>
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<td>International Conference Papers</td>
<td>64.35</td>
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<td><strong>Total</strong></td>
<td><strong>112.07</strong></td>
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<td><strong>Total Equivalent International Journal Papers(^{(2)})</strong></td>
<td><strong>58.44</strong></td>
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| No. of International Journal Papers / Faculty Member | 0.65 |
| No. of Equivalent International Journal Papers / Faculty Member | 1.19 |

\(^{(1)}\) Publications with non-SIIT co-authors are weighted according to the number of SIIT authors

\(^{(2)}\) Equivalent Number: International Journal Paper in International Database x 1.0, International Journal Paper x 0.75, National Journal Paper x 0.5, International Conference Paper x 0.33

\(^{(3)}\) 21.38 International Journal Papers in International Databases (x 1.0) and 10.67 International Journal Papers (x 0.75)

SIIT Graduate Students, 2\(^{nd}\)/2003 Semester

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<th>Program</th>
<th>PhD</th>
<th>MS</th>
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<td>Building Facilities Engineering</td>
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<td>4</td>
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<tr>
<td>Civil Engineering</td>
<td>6</td>
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<tr>
<td>Industrial Engineering</td>
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<tr>
<td>Mechanical Engineering</td>
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<tr>
<td>Telecommunications (formerly Electrical Engineering)</td>
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<td>Energy Technology</td>
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<td>Information Technology</td>
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<td>Management Technology</td>
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<td><strong>28</strong></td>
<td><strong>80</strong></td>
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* Includes 2 students of the Joint Civil Engineering Program between SIIT and Faculty of Engineering, Thammasat University.
### Royal Golden Jubilee & ADB Scholarships for Graduate Students

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<th>Scholarships</th>
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### External Research Grants and Internal Research Support

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<th>Programs</th>
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<th>Internal Research Support*, Baht</th>
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<td></td>
<td>Academic Year (June - May)</td>
<td>Academic Year (June - May)</td>
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<tr>
<td>Building Facilities Engineering</td>
<td>202,159</td>
<td>884,590</td>
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<tr>
<td>Civil Engineering</td>
<td>851,127</td>
<td>832,450</td>
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<td>Electrical Power Engineering</td>
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<td>Industrial Engineering</td>
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<td>Mechanical Engineering</td>
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<td>Telecommunications (formerly EE)</td>
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<td>6,549,280</td>
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<td>Energy Technology</td>
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<td>Environmental Technology</td>
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<td>Instrumentation and Control</td>
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<td>Department of Common and</td>
<td>-</td>
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<td>Graduate Studies</td>
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<tr>
<td><strong>Total</strong></td>
<td>5,634,884</td>
<td>12,710,494</td>
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* Internal research support includes financial support for graduate thesis, for paper presentation and publication.