

IRZA SUKMANA

Permanent Address

Advanced Engineering Materials and Biomaterials Research Group (AEMBRG), Department of Mechanical Engineering, Gedung H, Jalan Prof. Soemantri Brojonegoro 1, Bandar Lampung 35143, Indonesia
Phone/Fax.: +62-721-704 947
Email: isukmana@yahoo.com
Web: <http://www.unila.ac.id/~ft-mesin/>

Present Address

Department of Chemical and Biotechnological Engineering, University of Sherbrooke, 2500 University Boulevard, Sherbrooke, Quebec, Canada J1K 2R1
Phone: +1-819-821-8000 ext 63162
Web: <http://www.chimique.usherbrooke.ca/Biogenie/>

RESEARCH INTERESTS

Design and characterization of biomaterials and advance engineering materials, mechanical and production engineering, corrosion and biodegradation, biomechanics, applied biotechnology and biomedical engineering.

EDUCATION

- Ph.D.** Department of Chemical and Biotechnological Engineering, University of Sherbrooke, Canada
Expected Degree, Year: July, 2010
Supervisor: Professor Patrick Vermette
Research Lab: Bioengineering and Biophysics Lab
Thesis Title: Development of a tridimensional cell culture system to orient microvessel formation.
- M.E.** Master's degree in Material Engineering, Department of Mechanical Engineering, Institute of Technology Bandung, Indonesia
Graduation Year: 2001
Supervisors: Professor Rochim Suratman and DR. Bambang Widyanto
Research Lab: Corrosion and Prevention Lab of Indonesian Corrosion Association (INDOCOR)
Thesis Title: Research of stress corrosion cracking of austenitic stainless steel AISI 304 with U-Bend method at room temperature and chloride environment.
- B.E.** Bachelor degree in Production Engineering, Department of Mechanical Engineering, Institute of Technology Bandung, Indonesia
Graduation Year: 1996
Supervisor: DR. Taufiq Rochim
Thesis Title: Research on the optimization of face surface grinding process with respect to surface roughness of tool steel.

PUBLICATIONS

Peer-reviewed International Journals

- **Sukmana, I.** and Vermette, P. (2010) "The Effect of co-culture with fibroblasts and angiogenic growth factor on microvascular maturation and multi-cellular lumen formation in HUVEC-oriented polymer fibre constructs." *Biomaterials* **31**, pp. 5100-5109. **Journal's Impact factor: 6.646.**
- **Sukmana, I** and Vermette, P. (2010) "Polymer fibres as contact guidance to orient microvascularization in a 3D environment". *J.Biomed.Mater.Res.A* **92**, pp. 1587-1597. **Journal's Impact factor: 2.706.**
- **Sukmana, I** and Vermette, P. (2009) "Polymer monofilaments as a cellular guidance of angiogenesis development in three-dimensional environment" *Regenerative Medicine* **4 (6), Supplement 2**, pp. S292-S293 (A Special edition for The World Conference on Regenerative Medicine). **Journal's Impact factor: 2.786.**

Conferences

- **Sukmana, I.** and Vermette, P. "Polymer monofilaments as a cellular guidance of angiogenesis development in three-dimensional environment". The World Conference on Regenerative Medicine. Leipzig, Germany, 29-31 October 2009 (Poster).

- **Sukmana, I.**, Glacial, F., Dubois, J., Chouinard, J. and Vermette, P. "Development of scaffolds and bioreactor to grow patterned microvessel networks". Annual Conference of Tissue Engineering and Regenerative Medicine Society North America (TERMIS-NA), San Diego, CA, 7-8 December 2008 (Poster).
- **Sukmana, I.** "Magnesium alloys as a new trend in material development and its corrosion behaviors". International Collaboration Workshop between Keio University-Japan and Brawijaya University, Malang, Indonesia, 14-16 August 2004 (**Invited speaker**).

National Accredited Journals*)

- **Sukmana, I.** "Friction Stir Welding as new emerging trend in joining technology for aluminum alloys". Journal TEKNIK (Engineering Faculty of STT Jakarta); Volume 10, Nomor 2, December 2007.
- **Sukmana, I** and Burhanuddin Y. "The effect of sensitization temperature on stress corrosion cracking of stainless steel AISI 304 in sulphate acid environment". Journal TEKNIK (Engineering Faculty, Brawijaya University); Volume 14 Nomor. 2, Agustus 2007.
- **Sukmana, I.** "The effect of force coefficient and specific energy parameters of face surface grinding for tool-steel VCN 150" (*in Indonesian language*). Journal POROS (Department of Mechanical Engineering, Tarumanagara University, Jakarta); Volume 10 Nomor 1, Januari 2007.
- **Sukmana, I.** "New emerging trend in the application of magnesium alloys: from mechanical to bioengineering". Journal TEKNIK (Engineering Faculty of STT Jakarta); Volume 9, Nomor 2, Desember 2006.
- **Sukmana, I.** "The atmospheric corrosion of pre-coated low carbon steel ST-30 in rural, city and industrial area at Lampung Province". Journal Teknik REKAYASA (Engineering Faculty of Mataram University); Volume 8 Nomor 2, Desember 2006.
- **Sukmana, I.** "Potentiality and drawback of the application of magnesium and its alloys in the automobile industry" Journal Kajian Teknologi (Engineering Faculty, Tarumanagara University; Volume/No: Mai 2006
- **Sukmana, I.** "Research on the optimization of face-surface grinding process of medium carbon steel JIS SS41" (*in Indonesian Language*). Journal of POROS (Department of Mechanical Engineering, Tarumanagara University – Jakarta); Volume 8 No. 3, July 2005
- **Sukmana, I.** "Effect of Heat Input to the Spot Welding Quality on Welding Process of Connector at Automobile Battery". Journal POROS (Department of Mechanical Engineering, Tarumanagara University – Jakarta); Volume 8 No. 1, Januari 2005.
- **Sukmana, I.** "Research on marine corrosion phenomenon and its prevention method at service Point-D, Panjang Harbour (*in Indonesian language*). Journal POROS (Department of Mechanical Engineering Tarumanagara University – Jakarta; Volume 7 No. 3, July 2004.

**) Accredited by Directorate General for Higher Education of Indonesia*

Course and Practicum Handouts **)

- **Sukmana, I.** "Corrosion Engineering". Mechanical Engineering Department, University of Lampung, Indonesia, December 2005.
- **Sukmana, I.** "Occupational Safety and Health Administration (OSHA)". Mechanical Engineering Department, University of Lampung, Indonesia, June 2005.
- **Sukmana, I.** "Welding technology". Mechanical Engineering Department, University of Lampung, Indonesia, April 2005.
- Harun, S and **Sukmana, I** "Lab Work Guidance for Practicum of Production Process I". Mechanical Engineering Department, University of Lampung, Indonesia, December 2004.
- **Sukmana, I.** "Lab Work Guidance for Practicum of Welding Techniques". Mechanical Engineering Department, University of Lampung, Indonesia, August 2004.
- **Sukmana, I.** "Engineering Entrepreneurship". Mechanical Engineering Department, University of Lampung, Indonesia, April 2004.
- **Sukmana, I.** "Engineering Ethics". Mechanical Engineering Department, University of Lampung, Indonesia, September 2003.

***) Approved by the Research Institute of University of Lampung, Indonesia*

SCHOLARSHIPS

- | | | |
|--|---|------------------------------|
| ○ Merit Scholarship Program for High Technology Scholarship | Islamic Development Bank (IDB), Jeddah, Saudi Arabia | January 2007 – 2010 |
| ○ Friendship Program scholarship | Japan International Cooperation Agency (JICA) | January – February, 2001 |
| ○ Engineering Education Development Project (EEDP) Scholarship for Master study | National Minister of Education and Culture of Indonesia in cooperation with JICA, Japan | September 1998 – August 2000 |
| ○ Professional training scholarship in management and consultation for small and medium size enterprises | <i>Carl Duisberg Gessellschaft</i> (CDG) in cooperation with Federal Ministry of Germany for Economic Cooperation and Development (BMZ) | June 1996 – September 1997 |

GRANT AND AWARDS

- | | | |
|--|---|------------------|
| ○ Student travels grant (September 2009) | Department of Chemical and Biotechnological Engineering, University of Sherbrooke | 507 CAD* |
| ○ Graduate award (September 2009) | Quebec Network for Research on Aging (RQRV) | 1,000 CAD |
| ○ Educational Project grant for Engineering Entrepreneurship course (2005/2006) | Directorate General for Higher Education of Indonesia | 14,500,000 IDR** |
| ○ Social Responsibility grant for Management training (2004/2005) | University of Lampung | 2,500,000 IDR |
| ○ Research grant for study of atmospheric corrosion phenomena (2004/2005) | Forum for Higher Education Development Services (HEDS Forum) | 5,000,000 IDR |
| ○ Educational Project grant for Development of Jominy test equipment (2003/2004) | University of Lampung | 1,500,000 IDR |
| ○ Educational Project grant for course hand-out (2003/2004) | DIKS funding, University of Lampung | 650,000 IDR |
| ○ Research grant for study of stress corrosion cracking (2002/2003) | Forum for Higher Education Development Services (HEDS Forum) | 5,000,000 IDR |
| ○ Research grant for evaluation study of corrosion protection at <i>Panjang Harbor</i> (2002/2003) | DIKS funding, University of Lampung | 2,000,000 IDR |

* CAD is a universal symbol of Canadian Dollar

** IDR is a universal symbol of Indonesian Rupiahs

ACHIEVEMENTS

- | | | |
|--|---|----------------|
| ○ Best lecturer (2 nd winner) | University of Lampung, Indonesia | September 2005 |
| ○ The best lecturer | Faculty of Engineering, University of Lampung | August 2005 |

EXPERIENCE IN ACADEMIA

- Senior lecturer Mechanical Engineering Department, University of Lampung July 2005 – present (5 years)
- Head of Production and Mechanics Technology Lab Mechanical Engineering Department, University of Lampung September 2002 – August 2005 (3 years)
- Academic supervisor Mechanical Engineering Department, University of Lampung September 2003 – August 2005 (2 years)
- Lecturer Mechanical Engineering Department, University of Lampung December 2002 – June 2005 (2 and half years)
- Head of Project assessment for the development of diploma program (D2) Mechanical Engineering Department, University of Lampung July – December 2004 (6 months)
- Assistant lecturer Mechanical Engineering Department, University of Lampung December 2001 – November 2002

Courses Taught (Year), (Course title)

2006/2007	Production Engineering I Practicum of Welding Techniques
2005/2006	Welding technology Engineering Ethics Research methodology and presentation techniques Corrosion and preventions Occupational Safety and Health Administration (OSHA)
2004/2005	Engineering entrepreneurship Corrosion and preventions Practicum of Welding Techniques Practicum of Production Process Research methodology and presentation technics
2003/2004	Engineering ethics Machining technology Welding Technology Forming technology Corrosion and preventions
2002/2003	Machining technology Engineering Entrepreneurship Basic Industrial Management

Supervision of undergraduate final research project

(Academic session), (student`s name), (project title), (role as), (status)

- 2005/2006
 - Ikhwan, M. “The effect of surface tempering process on the atmospheric corrosion behavior of low carbon steel”, as co-supervisor, finished on June, 2006.
 - Waluyo, E.B. “The optimum transversal speed for friction stir welding of low carbon steel”, as main supervisor, finished on December, 2005.

- 2004/2005
 - Azis, A. "The effect of hot-dip galvanizing parameter on the atmospheric corrosion behavior of low carbon steel in Lampung Province", as main supervisor, finished on September 2005.
 - Utomo, A.F. "Study of pole burning quality and its microstructure for the application of automobile batteries", as supervisor, finished on July 2005.
 - Marwan "The effect of spot welding parameter on welding quality of aluminum alloys", as co-supervisor, finished on May 2005.
 - Wibowo, A. "Research on the atmospheric corrosion phenomena of low carbon steel in the industrial, city, rural, and marine area at Lampung Province", as supervisor, finished on February, 2005.
 - Ade, S. "The effect of sensitization temperature on stress corrosion cracking behaviour of austenitic stainless steel AISI 304 in sulphate acid environment", as main supervisor, finished on November 2004.
- 2003/2004
 - Prabowo, A. "The dimension of cutting tips and the effect of friction stir welding quality of Aluminum alloy Al-1100", as main supervisor, finished on May 2004.
 - Sustiono, A. "The utilization of conventional milling machine MILKO-600 for friction stir welding of Aluminum alloy Al-1000", as main supervisor, finished on December 2003.
 - Arief, M. "The optimization of milling machining parameters in respect of tool wear on orthogonal cutting processes", as main supervisor, finished on September 2003
- 2002/2003
 - Tambunan, R. "Design of Piston for 4 stroke diesel engine with maximum power of 83 PS and maximum speed of 4200 RPM", as co-supervisor, finished on April 2003.

PROFESSIONAL AFFILIATIONS

- Student member Material Advantage (including four professional society membership: The American Ceramic Society (**ACerS**), Association for Iron & Steel Technology (**AIST**), **ASM International**, and The Minerals, Metals and Materials Society (**TMS**) September 2009 – present
- Graduate student member Quebec Network for Research on Aging (RQRV) June 2009 – present
- Professional member Indonesian Corrosion Association (INDOCOR) since 2005/2006