

Table of Contents

Section I: Human Oriented Organization

1	Organizational innovations and knowledge based enterprises. Theoretical postulates and empirical issues E. Pawlowski, Poland	3
2	Chosen methods supporting management of enterprise's agility S. Trzcielinski, Poland	13
3	Workforce diversity and ergonomic challenges for sustainable manufacturing organizations A. Hussain, R. Marshall, S. Summerskill and K. Case, UK	23
4	Integrative production technology for high-wage countries - Resolving the polylemma of production C. Brecher, W. Karmann, S. Kozielski and C. Wesch-Potente, Germany	33
5	Management audit as part of an ergonomics management in production systems M. Bierwirth and R. Bruder, Germany	41
6	Ergonomic intervention plan for machinery operators M. Drzewiecka, B. Mrugalska and L. Pacholski, Poland	49
7	Human-machine-systems for future smart factories D. Zuehlke, Germany	59
8	The role of ergonomic factors in the modeling of project management organization P. Pietras, Poland	69
9	User-centered design of a game-based, virtual training system D. Goreky, Germany, G. Lawson, UK, K. Mura, Germany, S. Hermawati, UK, and M. Overby, Denmark	78
10	Age-appropriate workplace engineering with the aid of cardboard engineering G. Meyer and P. Nyhuis, Germany	88

11	A flexible intelligent algorithm for identification of optimum mix of demographic variables for integrated HSEE-ISO systems: The case of a gas transmission refinery M. Azadeh, Z. Jiryaei and B. Ashjari, Iran, and M. Saberi, Australia	100
12	Hybrid meta-heuristic based occupational health management system for Indian workers exposed to risk of heat stress Y. Anand, S. Srivastava and K. Srivastava, India	110
13	Adaptive assembly planning for a nondeterministic domain D. Ewert, M. Mayer, D. Schilberg and S. Jeschke, Germany	121
14	Planning-modules for the manual assembly using virtual reality techniques L. Goldhahn and K. Mueller-Eppendorfer, Germany	131
15	Learning and forgetting in production-inventory systems with perishable seasonal items I. Abdul, Nigeria, and A. Murata, Japan	141

Section II: Work Study - Improving the Skills, Quality and Effectiveness

16	Influence at years of experience on operation concerning Kyoto style earthen wall A. Goto, H. Sato, A. Endo, C. Narita, Y. Takai and H. Hamada, Japan	153
17	Comparison of painting technique of Urushi products between expert and non-expert A. Goto, A. Endo, C. Narita, Y. Takai, Y. Shimode and H. Hamada, Japan	160
18	Subjective evaluation of Kyo-Yuzen-dyed fabrics with different material in putting-past (Nori-oki) process T. Furukawa, A. Endo, C. Narita, T. Sasaki, Y. Takai, A. Goto and H. Hamada, Japan	168
19	Human motion of weaving “Kana-ami” technique by biomechanical analysis K. Tsuji, Y. Takai, A. Goto, T. Ota and H. Hamada, Japan	178

20	Subjective evaluation for beauty of texture on metal surface with chasing operation M. Nishina, G. Sasaki, Y. Takai, A. Goto and H. Hamada, Japan	187
21	Biomechanical analysis of “Kyo-Gashi” techniques and skills for Japanese sweets experts A. Goto, Y. Takai and H. Hamada, Japan	195
22	Analysis of operation and eye movement concerning master of wire net A. Goto, Y. Takai, T. Ota, H. Hamada and K.-I. Tsuji, Japan	205
23	Highly cultured brush manufactured by traditional brush mixing technique “KEMOMI” S. Kawabata, T. Kamada, M. Nasu, K. Nakahara, H. Tsukuda, A. Goto and H. Hamada, Japan	211
24	Virtual agent assistance for maintenance tasks in IPS ² - First results of a study U. Schmuntzsch, C. Sturm, R. Reichmuth and M. Roetting, Germany	221
25	Involving users in the design of augmented reality-based assistance in industrial assembly tasks K. Mura, D. Gorecky and G. Meixner, Germany	232
26	A new method for forecasting the learning time of sensorimotor tasks T. Jeske and C. Schlick, Germany	241

Section III: Human Factors in Work Systems

27	Industrial robots – The new friends of an aging workforce? D. Bortot, B. Hawe, S. Schmidt and K. Bengler, Germany	253
28	The effect of anthropomorphic movements of assembly robots on human prediction S. Kuz, A. Heinicke, D. Schwichtenhoevel, M. Mayer and C. Schlick, Germany	263
29	Design and Implementation of a comprehensible cognitive assembly system C. Brecher, S. Müller, M. Faber and W. Herfs, Germany	272

30	Navigation as a key for self-optimizing assembly processes R. Schmitt, P. Jatzkowski and A. Schönberg, Germany	282
31	Assembly motion planning using controlled collisions C. Brecher, D. Behnen, T. Breitbach and W. Herfs, Germany	292
32	Improving operator's conformity with expectations in a cognitively automated assembly cell using human heuristics M. Mayer and C. Schlick, Germany	302
33	Cooperative disassembly of human and robot using an augmented vision system B. Odenthal, M. Mayer, W. Kabuß and C. Schlick, Germany	312
34	Artificial intelligence in optimizing environmental factors towards human performance A. Ismail, B. Deros and Y. Yusoff, Malaysia	322
35	Perceptions of traffic enforcers on road traffic noise and its potential non-auditory effects A. Matias, K. Baraquel, M. Barrios, L. Millare and C. Ocampo, Philippines	328
36	Temporal strategy and performance during a short-cycle fatiguing repetitive task T. Bosch, S. Mathiassen, D. Hallman, M. de Looze, E. Lyskov, B. Visser and J. van Dieën, The Netherlands	336
37	Kitting as an information source in manual assembly A. Brolin, Sweden/UK, G. Bäckstrand, P. Thorvald and D. Högberg, Sweden, and K. Case, Sweden/UK	346
38	A biomechanical evaluation of dynamic and asymmetric lifting using the AnyBody™ commercial software: A pilot study X. Jiang and A. Sengupta, USA	354
39	Real-time measuring system of eye-gaze location and writing pressure in calligraphy A. Murata, K. Inoue, T. Hayami and M. Moriwaka, Japan	363
40	Use of a monocular see-through head-mounted display while walking: A comparison of different user interfaces K. Tanuma, K. Kurimoto, M. Nomura and M. Nakanishi, Japan	373

- 41 A game system for visually impaired utilizing Kinect 383
N. Takahashi, T. Shogen, Y. Ikegami and M. Ohkura, Japan

- 42 A case study of participatory ergonomics in the quality assessment of 389
a drilling “dog house”
M. Camilli, G. Forte, G. Massara, L. Spirito, C. Strinati and
S. Mastrangelo, Italy

Section IV: Toward an Ergonomic Product

- 43 A calculation model for ergonomics cost-benefit analyses in early 399
product development stages
A.-C. Falck and M. Rosenqvist, Sweden

- 44 Evaluating the effectiveness of haptic feedback on a steering wheel 409
for BSW
J. Chun, G. Park, S. Oh, J. Seo, I. Lee, S. Choi and S. Han,
South Korea

- 45 Identifying Affective Satisfaction elements of a smartphone 417
application
J. Park, S. Han, J. Park and H. Kim, South Korea

- 46 Identifying elements of user value for smartphones through a 423
longitudinal observation
J. Park and S. Han, South Korea

- 47 Development of an affective satisfaction model for smartphones 429
H. Kim, S. Han, J. Park and J. Park, South Korea

- 48 Determination of ringtone volumes of mobile phones: Applying 436
signal detection theory
H. Moon and S. Han, South Korea

- 49 Design and evaluation of methods to aid one-handed input in mobile 442
touch screen devices
S. Oh, S. Han, J. Seo and D. Park, South Korea

- 50 Evaluation method for product end-of-life selection strategy 449
Z. Ghazalli, Malaysia, and A. Murata, Japan

- 51 Studying customer experience for Chinese fast-food service 463
N. Chen, P.-L. Rau and M.-Q. Wang, China

52	Effects of preference on crape structure of Saijo Japanese paper H. Hu, Y. Takai, N. Saiki, T. Tsujinaka, M. Ochi, A. Goto and H. Hamada, Japan	471
53	One new anthropometrical method for body measurement in motion Y. Wang, China	480
54	Experimental measurement of body size and practice of teaching and research X. Zhou and S.-Z. Hu, China	493
55	A study on shoe sizing systems: Foot anthropometry of Filipino children aged 7-12 A. Matias, R. Macaranday, J. Mangubat, R. Reyes and J. Tan, Philippines	500
56	The customer requirements for sandals-Inspirations for design S. Tsang, J. Ho and A. Chan, Hong Kong	508
	Index of Authors	519