

**Author: Prof. dr. eng. Aurel Fratu**

**Title:           SERVOSYSTEMS FOR MOTION CONTROL IN THE  
                  ROBOTS' TECHNIQUE**

**Domain: Electrical engineering**

## **PUBLICATIONS LIST**

### **RELEVANT PAPERS**

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1.       (2009) **Fratu A.**, Sisak F., Vermeiren L., Dequidt A.: Modelling and robot simulation in Delphi environment. *18th International Workshop on Robotics in Alpe-Adria-Danube Region*, ISBN 978 -606-521-315-9, Brasov, Romania, May 25-27, 2009.
2.       (2009) Dequidt A., Vermeiren L., **Fratu A.**: Design of flexible drive systems for feed forward control: a mechatronic approach. *18th International Workshop on Robotics in Alpe-Adria-Danube Region*, ISBN 978 -606-521-315-9, Brasov, Romania, May 25-27, 2009.
3.       (2010) **Fratu, A.**, Vermeiren, L., Dequidt, A.: *Using the Redundant Inverse Kinematics System for Collision Avoidance*. The 3<sup>rd</sup> International Symposium on Electrical and Electronics Engineering – ISEEE-2010, 16-18 sept. Galati, Romania, Proceedings ISBN 978-1-4244-8407-2, pp.88-93.
4.       (2011) **Fratu, A.**, Dequit, A., Vermeiren, L.: *Virtual Scissors for Haptic Portable Torque-Feedback Device*, Proceedings of the Remote Engineering and Virtual instrumentation Conference - REV 2011, pp.10-15.
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8.       (2013) **Fratu, A.**, Becar, J.P.: *Robots Collision Avoidance Using Learning through Imitation*, The 4<sup>th</sup> International Symposium on Electrical and Electronics Engineering ISEEE-2013, 978-1-4799-2442-4/13/\$31.00 ©2013 IEEE, Galati, Romania
9.       (2014) J.P. Becar, M. Fratu, **A. Fratu**, J.C. Canonne: *Example based learning for virtual prototyping engineering*, Edulearn14 Proceedings of the 6th International Conference on Education and New Learning Technologies, ISBN: 978-84-617-0557-3, ISSN: 2340-1117, 7-9 July, 2014, Barcelona, Spain, pp. 6027-6034
10.      (2014) **Fratu, A.**, Riera, B., and Vrabie, V.: *Predictive strategy for robot behavioral control*, Journal Proceedings in Manufacturing Systems, ICMA S 2014, ISSN 2067-9238 Vol. 9, Issue 3, Bucharest, Romania, pp.125–130.

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**PhD THESIS**

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**REASERCH REGARDING POSITIONING SYSTEM WITH SYNCHRONOUS SERVO-MOTOR AND MICRTOCOMPUTER FOR INDUSTRIAL ROBOTS**

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**PATENTS**

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1. Nicolaide, A., **Fratu, A.**: Method and installation to experimental determination of the losses by eddy currents, Patent Number(s): RO129909 (A0)
2. **Fratu, A.**: Method and installation for programming the motion paths of robotic arm articulations, Patent Number(s): RO – 129121(A0).
3. **Fratu, A.**, Fratu, M.: Method for Detecting Petroleum Fluid Leaks from Cracked Underground Metal Pipes, Patent Number(s): RO - 125179 (A2).
4. **Fratu, A.**: Control method for the electric inverters and inverter according to the method. Patent Number(s): RO112454 (B)
5. **Fratu, A.**: Oil dipper rod with electric signaling. Patent Number(s): RO97147 (B1)
6. **Fratu, A.**: Method and system for adjusting speed of direct current motors. Patent Number(s): RO97567 (B1)
7. **Fratu, A.** et al: Method and system for adjusting speed of the electric induction motors, Patent Number(s): RO 73734.
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9. **Fratu, A.**: One-way coupling. Patent Number(s): RO96273 (B1)
10. **Fratu, A.** et al: Systeme electrique de saisir du niveau d'huile. Patent Number(s): RO66668 (A2)
11. Saal C., **Fratu, A.** et al: Electromagnetic linear synchronous oscillomotor. Patent Number(s): RO98403 (B1)
12. Saal, C., **Fratu, A.** et al: Methode et installation pour la modification de la vitesse des machines asynchrones triphases planes. Patent Number(s): RO79433 (A2)
13. Saal, C., **Fratu, A.** et al: Methode et installation pour le fonctionnement en regime pas-a-pas avec pas angulaire constant du moteur asynchrone triphase. Patent Number(s): RO90590 (A2)
14. Saal, C., **Fratu, A.** et al: Methode dispositif pour l'obtention des frequences d'oscillation diminuees aux oscillateurs electriques synchrones lineaires. Patent Number(s): RO77841 (A2)
15. Baltac, M., **Fratu, A.** et al: Level indicator, with electric resistance. Patent Number(s): RO108087 (B1)
16. Popa, A. , **Fratu, A.** et al: Machine for smoothing wooden elements with profiled surfaces. Patent Number(s): RO93403 (A2)
17. Baltac, M., **Fratu, A.** et al: Relais de pression. Patent Number(s): RO76926 (A2)
18. Baltac, M., **Fratu, A.** et al: Machine pneumatique a visser et a devisser. Patent Number(s): RO76530 (A2)
19. Baltac, M., **Fratu, A.** et al: Alternative pneumatic motor. Patent Number(s): RO67876
20. Meiu, G., **Fratu, A.** et al: Installation for directing galvanizing manipulators. Patent Number(s): RO96125 (B1)
21. Ilie, Al., **Fratu, A.** et al: Installation for modifying speed of an electric shaft actuated by asynchronous machines. Patent Number(s): RO92205 (B1)
22. Ilie, Al., **Fratu, A.** et al: Installation for modifying the displacement speed of rolling girders by using linear asynchronous machines. Patent Number(s): RO92027 (A2)

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Prof. dr. eng. Aurel Fratu