

Curriculum vitae Europass



Informații personale

Nume / Prenume **HĂNȚILĂ, Florea Ioan**

Adresă Splaiul Independenței nr. 313, birou EB 233, sector 6, București, ROMÂNIA, Cod postal: RO-060042

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Naționalitate Română

Data nașterii

Sex Masculin

Experiența profesională

Perioada	15.03.1970 - prezent
Funcția sau postul ocupat	<ul style="list-style-type: none"> • șeful Catedrei de Electrotehnică (1996 - 2012) • conducător de doctorat (din 1995) • prodecan al Facultății de Electrotehnică (1992 - 1996) • profesor la Catedra de Electrotehnică a Facultății de Electrotehnică (1993 - prezent) • conferențiar la Catedra de Electrotehnică a Facultății de Electrotehnică (1990 - 1993) • șef de lucrări la Catedra de Electrotehnică I a Facultății de Electrotehnică (1976 - 1990) • asistent titular la Catedra de Electrotehnică II a Facultății de Automatică (1973 - 1976) • doctorand cu frecvență în cadrul Catedrei de Mașini Electrice (15.03.1970 - 15.03.1973)
Activități și responsabilități principale	Activitate didactică și științifică în domeniul ingineriei electrice conform fișei postului. Coordonarea activităților didactice și de cercetare (funcții de conducere).
Numele și adresa angajatorului	Universitatea <i>Politehnica</i> din București, Splaiul Independenței 313, 060042, București, România, http://www.upb.ro , Facultatea de Inginerie Electrică (http://www.electro.pub.ro), fostă Electrotehnică
Tipul activității sau sectorul de activitate	Învățământ superior și cercetare științifică
Perioada	17.07.1967 - 15.03.1970
Funcția sau postul ocupat	Inginer stagiar și Cercetător științific
Activități și responsabilități principale	Coordonare contracte de cercetare (au fost înregistrate 4 brevete de invenție.): <ul style="list-style-type: none"> • proiectarea unei noi serii de motoare asincrone de medie și mare putere; • elaborarea unor metode și realizarea unor instalații necesare încercărilor mașinilor electrice în regimuri speciale; calculul câmpului magnetic în mașinile electrice cu rotor disc și cu magneti permanenți AlNiCo; • proiectarea mașinilor cu rotor disc și optimizarea dimensiunilor acestor mașini.
Numele și adresa angajatorului	Institutul de Cercetare și Proiectare pentru Industria Electrotehnică (ICPE), actualul ICPE S.A. 313 Splaiul Unirii, 030318, sector 3, București Tel: (+4) 0215893300, Fax: (+4) 0215893434, E-mail: icpe.sa@icpe.ro , http://www.icpe.ro
Tipul activității sau sectorul de activitate	Cercetare științifică și microproducție

Educație și formare

Perioada 1970 - 1976

Calificarea / diploma obținută Doctor inginer

Disciplinele principale studiate / competențe profesionale dobândite	Analiza câmpului electromagnetic (metode numerice de tratare a neliniarităților, teoreme de existență și unicitate, metode integrale pentru calculul câmpului indus în medii neomogene în mișcare). Titlul tezei de doctorat: “ Contribuții asupra teoriei mașinilor de curent continuu cu magneti permanenți” – contribuții originale: o nouă metodă de calcul al câmpului electromagnetic în medii nelineare, cunoscută în literatura sub numele de Metoda Polarizației sau Metoda Punctului Fix, o nouă metodă de suprarelaxare dinamică, o nouă metodă de calcul al câmpului magnetic cuasistaționar în structuri 3-D, cu medii neliniare și corpuri în mișcare.																																							
Numele și tipul instituției de învățământ	Universitatea Politehnică din București, Catedra de Mașini Electrice																																							
Nivelul în clasificarea internațională	ISCED 6																																							
Perioada	1962 - 1967																																							
Calificarea / diploma obținută	Inginer Electrotehnician																																							
Disciplinele principale studiate / competențe profesionale dobândite	Matematică, Fizică, Bazele Electrotehnicii, Limbaje și algoritmi de programare, Metode numerice, Teoria câmpului electromagnetic, Convertoare electromecanice, aparate și acționări electrice, Metode de calcul al câmpului electromagnetic, Proiectare asistată de calculator, Tehnici de comunicare profesională, Modul pedagogic.																																							
Numele și tipul instituției de învățământ	Institutul Politehnic din București, Facultatea de Electrotehnică																																							
Nivelul în clasificarea internațională	ISCED 5A																																							
Aptitudini și competențe personale																																								
Limba(i) maternă(e)	Română																																							
Limba(i) străină(e) cunoscută(e)																																								
Autoevaluare																																								
Nivel european (*)																																								
Engleză	<table><tr><th colspan="4">Înțelegere</th><th colspan="4">Vorbire</th><th colspan="2">Scriere</th></tr><tr><th colspan="2">Ascultare</th><th colspan="2">Citire</th><th colspan="2">Participare la conversație</th><th colspan="2">Discurs oral</th><th colspan="2">Exprimare scrisă</th></tr><tr><td>C1</td><td>Utilizator experimentat</td><td>B2</td><td>Utilizator independent</td><td>B1</td><td>Utilizator independent</td><td>B2</td><td>Utilizator independent</td><td>C1</td><td>Utilizator experimentat</td></tr></table>										Înțelegere				Vorbire				Scriere		Ascultare		Citire		Participare la conversație		Discurs oral		Exprimare scrisă		C1	Utilizator experimentat	B2	Utilizator independent	B1	Utilizator independent	B2	Utilizator independent	C1	Utilizator experimentat
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(*) Nivelul Cadrului European Comun de Referință Pentru Limbi Străine																																								
Competențe și abilități sociale	Aptitudini sociale specifice dobândite din experiența didactică și coordonare a activităților de cercetare: - capacitatea de comunicare și înțelegere interpersonală, - capacitatea de organizare și lucru în echipă, - capacitatea de adaptare la medii multiculturale.																																							
Competențe și aptitudini organizatorice	<ul style="list-style-type: none">• Competență de conducere și coordonare echipe pentru diferite activități didactice și de cercetare (funcții de conducere alese – prodecan, șef de catedră, director științific centru de, peste 27 de contracte de cercetare obținute prin competiție în calitate de director, unele dintre ele presupunând coordonarea unor consorții).• Competențe de management academic: participare constantă la toate activitățile specifice activității academice (concepere și coordonare de programe studii de licență, master, practică de specialitate, organizare admitere, comisie de licență, elaborare planuri de învățământ și state de funcțiuni etc.).• Înființarea (coordonarea) de laboratoare în cadrul catedrei.• Organizarea unor conferințe naționale și internaționale.• Conducerea științifică a peste 20 doctorate.• Gândire sistemică, capacitatea de identificare a problemelor, capacitatea de rezolvare a problemelor, evaluare de proiecte de cercetare și dezvoltare, abilități de planificare și foresight.																																							

Competențe și aptitudini tehnice	<p>1. Analiza numerică a câmpului electromagnetic.</p> <p>1.1. O nouă metodă de calcul al câmpului electromagnetic în medii nelineare. Cunoscută în literatură sub numele de Metoda Polarizației sau Metoda Punctului Fix, este, alături de Metoda Newton-Raphson, una din cele două importante metode de soluționare a problemelor de câmp electromagnetic în medii neliniare. Numeroase citări se referă la această metodă (din care 42 pot fi găsite în baza de date a revistelor cotate ISI).</p> <p>1.2. O nouă metodă de suprarelaxare dinamică. Metoda este utilă pentru accelerarea procedurilor iterative descrise de operatori contractivi. Într-un studiu invitat privind procedurile de suprarelaxare (Chiampì s.a., "Ferromagnetic hysteresis and magnetic field analysis", International Compumag Society Newsletter, vol.6, no.1, 1999), metoda este recomandată ca una din cele mai performante proceduri de suprarelaxare.</p> <p>1.3. O nouă metodă de calcul al câmpului magnetic cuasistaționar în structuri 3-D, cu medii neliniare și corpuri în mișcare. Mult citată în literatura de specialitate, metoda se bazează pe ecuația curenților turbionari și Metoda Polarizației și utilizează potențialul electric vector, condiția de etalonare topologică iar necunoscutele active sunt asociate elementelor de muchie pentru corzi.</p> <p>1.4. Calculul erorilor față de soluția exactă în metodele numerice de calcul al câmpului magnetic. Pentru prima dată sunt stabilite proceduri simple de determinare a unor margini superioare pentru erorile de calcul al câmpului magnetic în medii neliniare, atunci când pentru calculul numeric al câmpului de la fiecare iterație se folosește Metoda Elementului Finit (pentru domenii mărginite) sau Metoda Funcției Green (pentru domenii nemărginite).</p> <p>1.5. O nouă metodă a elementelor de frontieră. Se folosește potențialul magnetic vector \mathbf{A} și o ecuație integrală ce leagă componentele tangențiale ale lui \mathbf{A} și $\text{rot}\mathbf{A}$. Sunt introduse elementele de muchie pe frontieră și este stabilită relația între valorile de muchie pe corzi ale componentelor tangențiale ale lui \mathbf{A} și componentelor tangențiale ale lui $\text{rot}\mathbf{A}$ pe fețe.</p> <p>1.6. O nouă metodă de soluționare a problemelor de curenți turbionari, în regim periodic, în medii neliniare. Mult mai eficientă decât cunoscutele metode a "forței brute" sau "balanței armonice", permite separarea soluției pe armonice.</p> <p>2. Analiza numerică a circuitelor electrice.</p> <p>2.1. O nouă metodă de rezolvare a circuitelor cu elemente rezistive neliniare. Mult citată în literatura sub numele de Metoda Surselor Echivalente, metoda este o procedură de tip Picard-Banach, cu avantajele acestei proceduri. Are avantajul separării topologiei circuitului de relațiile u-i ale elementelor de circuit.</p> <p>2.2. Calculul numeric al câmpului electromagnetic în elementele de circuit cu efect de câmp. Procedura, citată în literatura cotate ISI, permite determinarea relațiilor u-i pentru elementele de circuit cu efect de câmp. Sunt sintetizate și scheme cu parametri concentrați, valabile pentru anumite benzi de frecvență.</p> <p>3. Analiza calitativă a problemelor de câmp electromagnetic și de circuite electrice.</p> <p>3.1. Teoreme de existență și stabilitate pentru câmpul staționar în medii nelineare. Componentele câmpului (\mathbf{B}, \mathbf{H}) sunt elemente ale spațiilor L_2, iar ecuațiile câmpului sunt descrise de operatori în mulțimea distribuțiilor.</p> <p>3.2. Teorema de existență pentru cel puțin o soluție a circuitelor rezistive neliniare.</p> <p>4. Probleme inverse.</p> <p>4.1. O nouă metodă de reconstrucție a defectelor în controlul nedestructiv. Este o metodă semideterministă, aplicabilă la reconstrucția zonelor îmbătrânite din corpurile feromagnetice. Viteza de reconstrucție este de cel puțin 222 ori mai mare decât în cazul procedurilor de căutare raportate în literatură.</p> <p>4.2. Detecția termografică a locației și dimensiunilor tumorilor de sâni.</p> <p>4.3. Detecția excentricității rotorice a generatorului sincron.</p> <p>5. Procesarea materialelor.</p> <p>5.1. O metodă eficientă de determinare a câmpului de temperaturi și a evoluției suprafeței de schimbare de fază în procesele de solidificare (turnare) a pieselor feromagnetice.</p>
Competențe și aptitudini de utilizare a calculatorului	<ol style="list-style-type: none"> 1. Programare Fortran. 2. Utilizare pachete programe: Microsoft Office (Word, Excel, Power Point), FEMM, Maple 12; Matlab, Flux; 2D/3D/Cedrat; HFSS 3D Full-Wave Electromagnetic Field Simulation/ANSOFT; Opera 2D/3D-Vector Fields, CST MICROWAVE STUDIO; COMSOL Multiphysics, ANSYS Multiphysics
Competențe și aptitudini artistice	Șahul.
Permis de conducere	A, B

Informații suplimentare

Activitate didactică - titular cursuri: Bazele Electrotehnicii I, II, Teoria câmpului.

Diseminarea rezultatelor (peste 355 lucrări științifice și peste 198 citări (excluse autocitările):

- **peste 135 articole** (în revistele de prestigiu: IEEE Transaction on Magnetics, Studies in Applied Electromagnetics and Mechanics, Balkan Journal of Geometry and its Applications, International Journal of Applied Electromagnetics and Mechanics, COMPEL, Journal of Materials Processing Technology, Journal of Optoelectronics and Advanced Materials)
- peste 121 comunicări la conferințe internaționale,
- peste 88 comunicări la conferințe naționale;
- **19 cărți;**
- 4 brevete de invenție.
- peste 87 rapoarte de cercetare la 25 contracte de cercetare coordonate, precum și numeroase rapoarte la contracte de cercetare coordonate de colegi.

Membru al asociațiilor profesionale:

- **Membru titular al Academiei de Științe Tehnice (din 2006);**
- Președintele Asociației Inginerilor Electricieni și Electroniști din România (din 2004);
- Membru IEEE;
- Membru al Societății Române de Materiale Magnetice;
- Membru al Asociației Naționale a Constructorilor de Micromașini Electrice;
- **DHC al Universității din Oradea, 2010.**

Premii:

- **"Applied Electromagnetics and Mechanics Award" din partea Japan Society of Applied Electromagnetics and Mechanics, 2009;**
- **Premiul "The high commended paper", al revistei COMPEL (ISI), 2004;**
- Diploma "Pro-RELANSIN", acordată de AMCSIT, în 26 aprilie 2002, pentru calitatea realizărilor științifice și tehnice prezentate la expoziția "Pro-RELANSIN 2002";
- Premiul special al Academiei de Științe Literatură și Arte (ASLA) la Salonul internațional de carte, 08.09.2001, din Oradea, pentru cartea "Analiza numerică a proceselor de încălzire prin curenți turbionari".
- Premiul AGIR, 1996;
- **Premiul Academiei Române, 1994;**
- **3rd prize International Mathematics Olympiad, Prague, 1962.**

Membru în comitetul de redacție al Revistei Academiei Române: Revue Roumain Science Technique, Serie Electrotechnique et Energetique, membru în numeroase comitete de organizare, comitete științifice și chairman în cadrul a numeroase conferințe naționale și internaționale, dintre care:

- Comitete de organizare: RJJSAEM'96, Sept. 24-26, 1996, Neptun, Romania; IWSSIP 2001, June 7-9, 2001; ECCSC'08, July 10- 11, 2008;
- Comitete științifice: RJJSAEM'98, 16-18 nov., 1998, Kiryu, Japan; COMPUMAG'99, Oct.25-28, 1999, Sapporo, Japan; OPTIM 2000, 11-12 may, 2000, Brasov, Romania; COMPUMAG'03, Saratoga Springs, NY, USA, July 13-17, 2003; JAPMED'03, Athena, May 19-21, 2003; ISEM'03, May, 12-14 2003, Versailles, France; CEFC 2004, June 6-9, 2004, Seoul, Korea; ISEM'05, September 12-14, Bad Gastein, Austria, 2005; JAPMED'05, September 17-20, 2005, Cairo, Egypt; CEFC 2006, April 30 - May 3, 2006, Miami, Florida, USA; ICEM 2006, September 2-5, 2006, Chania, Crete Island, Greece; JAPMED'07, September 16-19, 2007, Larnaca, Cyprus; ISEM'07, 9-12 September, Michigan State University, MI USA; COMPUMAG'07, Aachen, Germany, 24-28, 2007; CEFC 2008, May, 11-15, 2008, Athens, Greece, OPTIM'08, May, 19-23, 2008, Brasov, Romania, JAPMED'6, July, 27-29, 2009, Bucharest, Romania, (Co-Chairmen).

Profesor invitat la:

- **Universitățile Cassino și Napoli, 3 luni, 1992;**
- **Universitatea Tehnică din Atena, 3 luni, 1993, 1994;**
- **Tokyo University din Japonia, un semestru, 1994;**
- **Manitoba University din Canada, în 2001, 2005, 2009, cate un semestru.**

Stagii formare Programului Comunitar Leonardo da Vinci:

- 01.05.2004-16.05.2004, Technical Engineering Institute of Kozani, Grecia (program RO/2003/91139/EX, RE-MAT "New approach in the management of materials recycling")
- 26.08-06.09.2007, University of Patras, Grecia (program RO/2006/ 97029-EX, "Continuous Training Programme in the Field of Non-Destructive Technologies and Equipments for Structural Integrity Evaluation Of Advanced Materials")

Anexe

Lista lucrărilor științifice

LISTA DE LUCRARI

A) Teze de doctorat

- A1. "Contributii asupra toriei masinilor de curent continuu cu magneti permanenti", Bucuresti, Facultatea de Electrotehnica, catedra Masini electrice, 1976, conducator stiintific **prof. Constantin Bala**

B) Lucrari publicate in reviste

- B.1 Fl. Hantila, "Mathematical models of the relation between B and H for nonlinear media", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.3, 1974, p.429-448,
- B.2 Fl. Hantila "On the uniqueness theorems of the stationary and quasistationary electromagnetic fields in nonlinear media", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.2, 1975, p.211-219,
- B.3 Fl. Hantila, "A method for solving stationary magnetic field in nonlinear media", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.3, 1975, p.397-407,
- B.4 Fl. Hantila "A method for solving nonlinear resistive networks", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.2, 1979, p.217-226,
- B.5 F., Spinei, Fl. Hantila "A generalization of the Vaschy theorem", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.3, 1979, p.501-503,
- B.6 Fl. Hantila, Constantinescu, "A numerical method for the calculation of the stationary magnetic fields in nonlinear and inhomogeneous media", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.1, 1980, p.3-16
- B.7 Fl. Hantila, F. Spinei, "On the solutions existence in nonlinear electrical resistive networks", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.2, 1980, p.225-234,
- B.8 Fl. Hantila, Constantinescu, "The calculation of the separation characteristics for a magnetic separator", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.3, 1980, p.369-377,
- B.9 Fl. Hantila "Existences and stability theorems of the stationary fields without sources and with null boundary conditions in nonlinear media", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.3, 1981, p.345-353,
- B.10 Fl. Hantila "Existences and stability theorems for stationary fields without source nonlinear media", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.3, 1981, p.355-361,
- B.11 Fl. Hantila "Existences and stability theorems for stationary fields in nonlinear media", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.4, 1981, p.501-509,
- B.12 Fl. Hantila, "Observatii privind organizarea marimilor primitive si a legilor teoriei macroscopice a cimpului electromagnetic", *Electrotehnica* nr.1, 1983, p.31-33,
- B.13 Fl. Hantila, G. Grama, "An overrelaxation method for the computation of the fixed point of a contractive mapping", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.4, 1982, p.395-398,
- B.14 S. Zissu, Fl. Hantila, "A method for solving steady-state electromagnetic field in nonlinear media", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.3, 1983, p.231-237,
- B.15 Fl. Hantila, "A method based on the components of polarization for solving stationary fields problems", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.2, 1983, p.121-126,
- B.16 C. Ifrim, Fl. Hantila, I. Barsan, G. Grama, N. Voicu, "Program de calcul al problemelor termice tridimensionale", *Electrotehnica*, nr.4, 1989,
- B.17 M. Vasiliu, Fl. Hantila, R. Enache, A. I. Nicolae, "Low-frequency shielding of periodic sequences of magnetic pulses", *Buletinul Institutului Politehnic Bucuresti*, vol.54, nr.3-4, 1992
- B.18 Fl. Hantila, "A method for solving 3-D eddy current problems in nonlinear media", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.3, 1992, p.267-281,
- B.19 Fl. Hantila, C. Trambitas, Fl. Constantinescu, "Iterative solving of integral equations of eddy currents", *Buletin U.P.B.*, nr.3-4, 1992, p.147-153,
- B.20 M. Vasiliu, Fl. Hantila, "Eigenfunction expansion in a non-sinusoidal magnetic shielding problem", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.2, 1993, p.199-206,
- B.21 M. Vasiliu, Fl. Hantila, R. Enache, "Ecranarea cimpului magnetic nesinusoidal", *Electrotehnica*, nr.4-5, 1993, p.9-15,
- B.22 N. Peios, Fl. Hantila, Er. Della Giacomo, "Boundary conditions in the diffusion problems of the electromagnetic field", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.1, 1993, p.53-64,
- B.23 M. Vasiliu, Fl. Hantila, "Solutia problemei de regim cuasistationar periodic permanent in serie de functii proprii spatiale", *Electrotehnica*, 6, 1993, p.6-12

- B.24 Fl.Hantila, D.Ioan, "Integral method for finding of the time constants in electromagnetic time diffusion", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.1, 1993, p.71-80,
- B.25 Fl.Hantila, M.Vasiliu, C.Ifrim, "Topological gauge condition for avoiding spurious modes in resonant cavities", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.3, 1993, p.333-338,
- B.26 M.Vasiliu, Fl.Hantila, "Time-periodic boundary value problems in non-sinusoidal magnetic diffusion", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.3, 1993, p.311-321,
- B.27 Fl.Hantila, N.Voicu, "Metoda iterative de rezolvare a cimpului termic cu conditii de frontiera mixte neliniare", *Electrotehnica*, nr.4-5, 1993, p.29-34,
- B.28 Fl.Constantinescu, M.Nitescu, Fl.Hantila, "Synthesis of a non-linear transfer characteristic using Zener diodes of a given type", *Buletin U.P.B.*, nr.1-2, 1991, p.181-184,
- B.29 Fl.Constantinescu, C.Cojocar, M.Nitescu, Fl.Hantila, "Volterra analysis of a frequency doubler", *Buletin U.P.B.*, nr.3-4, 1993, p.143-153,
- B.30 Fl.Hantila, C.Ifrim, Fl.Constantinescu, "Eddy current losses in axial air gape DC machines", *Buletin U.P.B.*, nr.3-4, 1993, p.183-188,
- B.31 C.Ifrim, Fl.Hantila, "Boundary element technic for transient magnetic strenght computation in ferromagnetic media", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.3, 1993, p.349-356,
- B.32 Fl.Hantila, M.Vasiliu, "Cavitati rezonante", *Electrotehnica*, nr.3, 1993, p.19-22
- B.33 Fl.Hantila, D.C.Ioan, N.N.Peios, J.A.Tegopoulos, "Integral method for computation of eddy current time constant", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.1, 1994, p.15-23,
- B.34 M.Vasiliu, Al.Nicolae, Fl.Hantila, "Finite integral transform approach to non-sinusoidal eddy-current problems", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.4, 1993, p.473-481,
- B.35 F.Hantila, D.Ioan, "Voltage-Current Relation of Circuit Elements with Field Effects", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.3, 1994, p.405-416,
- B.36 F.Constantinescu, M.Nitescu, F.Hantila, A.Georgescu, "A finite difference method for computation of the periodic steady state in nonlinear circuits", *Revista Academiei Tehnice Militare*, nr.1, 1994, p.158-163
- B.37 R.Albanese, F.Hantila, G.Rubinacci, "Eddy Current Integral Formulation for Nonlinear Media", *Revue Roum. Sci. Techn. Ser. Electrotechnique et Energ.*, no.2,1995, p.151-158,
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