

**Universitatea Națională de Știință și Tehnologie Politehnica  
București/National University of Science and Technology POLITEHNICA  
Bucharest**

**Facultatea de Inginerie Chimică și Biotehnologii/Faculty of Chemical  
Engineering and Biotechnologies**

**Centrul de Cercetări pentru Protecția Mediului și Tehnologii Ecologice  
CPMTE/Research Centre for Environmental Protection and Eco-friendly  
Technologies**

**Colectiv Carbochimie/Carbochemistry Research Group**

<https://upb-cpmte.ro/>

## 1. Activitatea de cercetare științifică și publicistică (2014-2025)

Premiul Academiei Române, Gheorghe Munteanu-Murgoci 2020:  
**Georgeta Predeanu:** *Coals of Romania - Geology, petrology, and use.*

### Lucrări științifice elaborate și publicate:

- 1 capitol carte (autor), 2024;
- 1 Special Issue, Managing Guest Editor, 2018
- 1 carte (co-autor), 2017;
- 1 Volum Conferință ICCP Coord. Editor, Ed. Schweizerbart Science Publishers, Stuttgart, 2017
- 83 lucrari publicate/în curs de publicare, din care:
  - 37 in reviste cotate ISI
  - 46 in alte reviste/ISI proceedings/Conference proceedings cu comitet de program, cu ISSN/ISBN;
- 2 cereri de brevet în curs de evaluare;
- Proiecte relevante de cercetare:
  - 6 proiecte, din care: 5 internaționale/ 1 proiect POC.
  - 3 proiecte depuse în 2024, aflate în prezent evaluare.

### Georgeta Predeanu: Director proiect/Responsabil proiect UNSTPB (2015-2025):

- H2020 ERA-NET/ERA-MIN (PHIGO): Thermal Processing of P-rich ashes aiming for HIGH-GRADE PHOSPHORUS Products, 2021-2025.
- H2020 ERA-NET/ERA-MIN (DEASPHOR): Design of a product for SUBSTITUTION of phosphate rocks, 2018-2022.
- EU-RFCS (SUPERCOAL): Coal liquid based upgraded carbon materials for energy storage, 2015-2018.
- H2020 ERA-NET/ERA-MIN (CHARPHYTE): Coal char as a substituting material of natural graphite in green energy technologies, 2016-2019.
- H2020 ERA-NET/ERA-MIN (RAREASH): Assessment of possible recycling directions of heavy & rare metals recovered from combustion waste products, 2015-2018.
- POC 2014-2020, Contract nr. 386/390062/4.10.2021 MySMIS: 120696 " Valorificarea inovativa si integrata a deseurilor biopolimerice prin procese de sinteza inteligente în camp de microunde cu obținerea de materiale carbonice pentru aplicații de nișă" – 4WasteUpgrade", 2019-2023.

### Alte activități (Georgeta Predeanu):

- **2011-2019: Reprezentantul României** în Grupul Consultativ pentru Cărbune (CAG), Fondul de Cercetare pentru Cărbune și Oțel, **COMISIA EUROPEANA**, Directoratul General Cercetare și Inovare, (RFCS [http://cordis.europa.eu/coal-steel-rtd/manage\\_en.html](http://cordis.europa.eu/coal-steel-rtd/manage_en.html));
- **2017:** Inițierea și coordonarea celei de-a 69-a Conferințe Internaționale a Comitetului Internațional de Petrografie a Cărbunilor și Materialului Organic (ICCP2017 [www.iccop.org](http://www.iccop.org)), 3-9 septembrie 2017 desfășurată sub auspiciile Academiei Române și sub înaltul patronaj al Domnului Acad. Bogdan Simionescu.
- **Guest Editor:**
  - 2023:** Special Issue "Ash as a Potential Source of Secondary Raw Materials: Advances in Characterization, Recovery and Applications", MDPI.
  - 2019:** Special Issue *The 69<sup>th</sup> ICCP Meeting "Advances in applied Coal and Organic Petrology"* Symposium. International Journal of Coal Geology. DOI: [10.1016/j.coal.2019.02.002](https://doi.org/10.1016/j.coal.2019.02.002)
  - 2017:** Series of publications by the German Society for Geosciences (SDGG)/Schriftenreihe der Deutschen Gesellschaft für Geowissenschaften Heft 92, 2017. **Predeanu G.**, Popa M.E., **Mihalache R.D.**, Mariș I., Kus I., Ghiran M.D. Publisher Schweizerbart Science Publishers, Stuttgart, 2017. ISBN 978-3-510-49239-8. ISSN 1860-1782. 156 pp.

### Membru al Asociațiilor Profesionale (Georgeta Predeanu):

- **Membru plin** al International Committee of Coal and Organic Petrology (ICCP, [www.iccop.org](http://www.iccop.org))  
Competențe profesionale care acoperă profilul Petrografia Cărbunilor, Petrografia Materialului dispersat în rocile Sursă petrolieră, Petrografia Materialelor Carbonice, Coordonator Grup de Lucru „Microscopia materialelor Carbonice” (2008-prezent), grup cu o largă reprezentare internațională. Membru în alte 4 grupuri de lucru ale ICCP.  
În prezent sunt **singurul cercetător petrograf activ din România, cu experiență amplă și dovedită la nivel internațional** privind studiul unei game largi și variate de materii prime și materiale din domeniile geologic, minier, energetic, chimic care pot fi analizate prin microscopie optică (cu ajutorul microscopului OLYMPUS din cadrul UNSTPB-CPMTE) în scopul găsirii unor căi de valorificare a acestora.

## LISTA DE PUBLICATII:

### Cărți/ Capitoale cărți/Special Issues:

1. **Predeanu G.** Contribution of the ICCP and to the ICCP – focused on Romania. In: The 75<sup>th</sup> ICCP Meeting A Commemorative Book. Ed. Angeles G. Borrego, INCAR-CSIC. **2024**, 265-283, ISBN: 978-84-09-64254-0, 265-281.
2. **Predeanu G., (Managing Guest Edt.)**, Popa M.E., Littke R. (Eds.) *The 69-th ICCP Meeting “Advances in Applied Coal and Organic Petrology”*, International Journal of Coal Geology, **2018**, 130 pp. (in Engleza).
3. **Predeanu G. (Coord. Edt.)**, Popa M.E., Mihalache R.D., Mariș I., Kus J., Ghiran M.D. (Eds.) Schriftenreihe der Deutschen Gesellschaft für Geowissenschaften, Hefte 92. *Abstracts Book and Program, 69<sup>th</sup> ANNUAL MEETING OF THE INTERNATIONAL COMMITTEE FOR COAL & ORGANIC PETROLOGY (ICCP-2017)*, Septembrie 3 - 9, Ed. Schweizerbart Science Publishers, Stuttgart, **2017**, ISBN 978-3-510-49239-8, 153 pp. (in Engleza).
4. Popa, M.E., **Predeanu, G.**, Ghiran, M.D., Mariș, I., Pirnea, R. *Pliocene Coals and Neogene Formations of the Prahova County: Field Trip Guide*. Ed. Universitatii Bucuresti, **2017**, 66 pp., ISBN 978-606-16-0905-5 (în Engleză).

### Articole în Reviste Stiintifice (cotate ISI):

1. **Predeanu, G.**, Valentim, B., Guedes, B. A., **Bălănescu, M.N.**, **Drăgoescu, M.F.**, **Slăvescu, V.**, **Vasile B.S.**, **Nicoară, A.I.**, Popescu, L.G., Abagiu, A.T., Anghelescu, L., Santos, A. C., Olgun, E.H., Kutlu, Ö., Mousa, E., Ye G., Bontempi, E., Massa, M., Bialecka, B., Cempa, M. *Characterization of the ash samples before and after the microwave thermal extraction targeting products reuse in construction*. International Journal of Coal Geology, *in press* 2025
2. Fahimi, A., Massa, M., Mousa, E., Ye, G., **Predeanu G.**, Olgun, H., Mousavinezhad, S., Vahidi, E., Valentim, B., Bialecka, B., Bontempi, E. **2024**. *Enhancing Phosphorus Recovery from Poultry Litter Ash through Microwave-Assisted Thermochemical Treatment for Improving Its Solubility*. Journal of Environmental Management *in press* 2025.
3. Valentim, B., Guedes, A., Kuźniarska-Biernacka, I., Dias, J.M., **Predeanu, G.** **2024**. Variation in the composition of municipal solid waste incineration. Minerals, 14, 1146. <https://doi.org/10.3390/min14111146>
4. **Predeanu G.**, M. Wojtaszek-Kalaitzidi, I. Suarez Ruiz, **Bălănescu M.N.**, A. Gomez Borrego, M.D. Ghiran, P.C. Hackley, S. Kalaitzidis, J. Kus, M. Mastalerz, M. Misz-Kennan, S. Pusz, S. Rodrigues, G. Siavalas, A. Varma, A. Zdravkov, D. Zivotic. **2024**. *Structure and morphology of chars and activated carbons obtained from thermal treatment of coal and biomass origin materials, including their wastes: Results from the ICCP Microscopy of Carbon Materials Working Group*. International Journal of Coal Geology, 104519. <https://doi.org/10.1016/j.coal.2024.104519>
5. Popescu, L.G., Popa, R.G., Anghelescu, L., Cazalbaşu, R., **Predeanu, G.**, **Vasile, B.S.** *New possibilities of using the ash resulting from the energy recovery of poultry litter within the circular economy concept*. Scientific Papers. Series E. Land Reclamation, Earth Observation & Surveying, Environmental Engineering. Vol. XIII, 2024, 212-217. ISSN 2285-606.
6. Santos A.C., Badenhorst C., Bialecka B., Cameán I., Guedes A., Moreira K., **Predeanu G.**, Suárez-Ruiz I., Wagner N., Valentim B. *Graphitization: Microstructural and microtextural transformations of residual char from international coal combustion ash*. International Journal of Coal Geology, **2024**, 285, 104470. <https://doi.org/10.3390/min10110986>
7. Ioniță D., Cristea M., Cosmulescu S.F., **Predeanu G.**, Harabagiu V., Samoilă P. *Thermal and viscoelastic response of selected lignocellulosic 2 wastes: similarities and differences*. Polymers **2023**, 15, 2100. <https://doi.org/10.3390/polym15092100>
8. Moyseowicz A., González Z., Melendi-Espina S., Acevedo B., **Predeanu G.**, Axinte S.M., Fernández J.J., Granda M., Minta D., Moyseowicz A., Gryglewicz G. *Hydrothermal nitrogen doping of anthracene oil-derived activated carbons for wide voltage asymmetric capacitors*. Journal of Energy Storage 60, **2023**, 106704, <https://doi.org/10.1016/j.est.2023.106704>
9. Enache A.C., Cojocar C., Samoila P., Ciornea V., Apolzan R., **Predeanu G.**, Harabagiu V. **2023**. *Adsorption of Brilliant Green Dye onto a Mercerized Biosorbent: Kinetic, Thermodynamic, and Molecular Docking Studies*, Molecules 28, 4129. <https://doi.org/10.3390/molecules28104129>
10. **Predeanu G.**, **Slăvescu V.**, **Drăgoescu M.F.**, **Bălănescu N.M.**, Fiti A., **Meghea A.**, Samoila P., Harabagiu V., Ignat M., **Manea-Saghin A.M.**, **Vasile B.S.**, **Badea N.** **2023**. *Green Synthesis of Advanced Carbon Materials Used as Precursors for Adsorbents Applied in Wastewater Treatment*. Materials, 16, 1036. <https://doi.org/10.3390/ma16031036>
11. Ghiran M.D., Popa M.E., Mariș I., **Predeanu G.**, Gheorghe S., **Bălănescu N.M.** *Thermal Maturity and Kerogen Type of Badenian Dispersed Organic Matter from the Getic Depression, Romania*. Minerals **2023**, 13, 202. <https://doi.org/10.3390/min13020202>
12. Enache A.C., Samoila P., Cojocar C., Apolzan R., **Predeanu G.**, Harabagiu V. *An Eco-Friendly Modification of a Walnut Shell Biosorbent for Increased Efficiency in Wastewater Treatment*. Sustainability **2023**, 15, 2704.

13. Condurache B.C., Cojocaru C., Samoila P., Cosmulescu S.F., **Predeanu G.**, Enache A.C., Harabagiu V. *Oxidized Biomass and Its Usage as Adsorbent for Removal of Heavy Metal Ions from Aqueous Solutions*. *Molecules* **2022**, *27*, 6119, 1-19. <https://doi.org/10.3390/molecules27186119>
14. Fahimi, A.; Bontempi, E.; Fiameni, L.; Guedes, A.; Guimarães, R.; Moreira, K.; Santos, A.C.; Valentim, B.; **Predeanu, G. Bălănescu, N.M.**, Olgun H., Boiron M.C., Cathelineau M. *Incineration of Aviary Manure: The Case Studies of Poultry Litter and Laying Hens Manure*. *Waste and Biomass Valorization*, **2022**, volume 13, 3335–3357.
15. Fiameni, L., Fahimi, A., Marchesi C., Sorrentino, G.P., Zanoletti, A., Moreira, K., Valentim, B., **Predeanu, G.**, Depero L.E., Bontempi, E. *Sustainability analysis supported by a statistical approach to evaluate a zero-waste recovery process: the case of rice husk poultry litter ash for phosphorous and silica recovery*. *Materials* **2021**, *14*, 6297, 1-14.
16. Fernandes, D.M, Fernández, V.K.A., Badenhorst, Ch., Bialecka, B., Guedes, A., **Predeanu, G.**, Santos, A.C., Valentim, B., Wagner, N., Freire, C. *Coal chars recovered from fly ash as promising electrocatalysts for oxygen reduction reaction*. *International Journal of Hydrogen Energy*, Volume 46, Issue 70, 11 October **2021**, 34679-34688. <https://doi.org/10.1016/j.ijhydene.2021.08.009>
17. **Predeanu, G.; Slăvescu, V.; Bălănescu, M.; Mihalache, R.D.; Mihaly, M.; Marin, A.C.; Meghea, A.**; Valentim, B.R.; Guedes, A.; **Abagiu, A.T.**; Popescu, L.G.; **Manea-Saghin, A.M.; Vasile, B.Ș.; Drăgoescu, M.F.** **2021**. *Coal bottom ash processing for capitalization according to circular economy concept*. *Minerals Engineering*, *170*, 107055, DOI:[10.1016/j.mineng.2021.107055](https://doi.org/10.1016/j.mineng.2021.107055)
18. González Z., Acevedo B., **Predeanu G.**, Axinte, S.M., **Drăgoescu M.F., Slăvescu V.**, Fernandez J.J., Granda M., Gryglewicz G., Melendi-Espina S. **2021**. *Graphene materials from microwave-derived carbon precursors*. *Fuel Processing Technology*, *217*, 106803 <https://doi.org/10.1016/j.fuproc.2021.106803>
19. Fiameni L., Assi A., Fahimi A., Bruno V., Moreira K., **Predeanu G., Slăvescu V., Vasile B.Ș.**, Nicoară A.I., Borgese L., Boniardi G., Turolla A., Canziani R. and Bontempi E. **2021**. *Simultaneous amorphous silica and phosphorus recovery from rice husk poultry litter ash*. *RSC Advances*, *11*, 8927-8939. <https://doi.org/10.1039/d0ra10120f>
20. Badenhorst C., Santos C., Lázaro-Martínez J., Bialecka B., Cruceru M., Guedes A., Guimarães R., Moreira K., **Predeanu G.**, Suárez-Ruiz I., Cameán I., Valentim B., Wagner N. **2020**. *Assessment of Graphitized Coal Ash Char Concentrates as a Potential Synthetic Graphite Source*. *Minerals*, *10*, 986, 1-28; doi:[10.3390/min10110986](https://doi.org/10.3390/min10110986).
21. Fahimi A., Bilo F., Assi A., Dalipi R., Federici S., Guedes A., Valentim B., Olgun H., Ye G., Bialecka B., Fiameni L., Borgese L., Cathelineau M., Boiron M.C., **Predeanu G.**, Bontempi E. **2020**. *Poultry litter ash characterization and recovery*. *Waste Management* *111*, 10–21. <https://doi.org/10.1016/j.wasman.2020.05.010>
22. Misz-Kennan M., Kus J., Flores D., Avila C., Buckun Z., Choudhury N., Christanis K., Joubert J., Kalaitzidis S., Karayigit A.I, Malecha M., Marques M., Martizzi P., O'Keefe J., Pickel W., **Predeanu G.**, Pusz S., Ribeiro J., Rodrigues S., Singh A.K., Suarez-Ruiz I., Sýkorová I., Wagner D., Zivotic D. **2020**. *Development of a petrographic classification system for organic particles affected by self-heating in coal waste. (An ICCP Classification System, Self-heating Working Group – Commission III)*. *International Journal of Coal Geology*, *220*, 103411, <https://doi.org/10.1016/j.coal.2020.103411>.
23. **Predeanu G.**, Axinte S.M., **Drăgoescu M.F.**, González Z., Álvarez P., Granda M., Menéndez R., Fiti A., Acevedo B., Melendi-Espina S., Gryglewicz G., Fernández J.J., **Slăvescu V.** *Microwave heating as a novel route for obtaining carbon precursors from anthracene oil*. *Fuel Processing Technology* *192*, **2019**, 250–257.
24. Valentim B., **Abagiu T.A.**, Angheliescu L., Flores D., French D., Goncalves P., Guedes A., Ribeiro J., Popescu L.G., **Predeanu G., Slăvescu V.**, Ward C. *Assessment of landfilled Oltenia lignite bottom ash (Romania) as a source of rare earth elements*. *Special Issue of Minerals (Trace elements and minerals in coal and coal combustion residues)*. *International Journal of Coal Geology* *201*, **2019**, 109–126.
25. **Predeanu G.**, Popa M.E., Littke R. *Editorial of the Special Issue: The 69<sup>th</sup> ICCP Meeting “Advances in applied Coal and Organic Petrology” Symposium*. *International Journal of Coal Geology* *207*, **2019**, 73–74.
26. Popa M.E., **Predeanu G.** *Coals of Romania-Geology, petrology, and use*. *International Journal of Coal Geology* *200* (**2018**) 103–122.
27. Anastasiu N., Simionescu B.C., Popa M.E., Mihai M., Rusu R.D., **Predeanu G.** *Romanian coal reserves and strategic trends*. *International Journal of Coal Geology* *198*, **2018**, 177–182.
28. Valentim B., Bialecka B., Gonçalves P., Guedes A., Guimarães R., Cruceru M., Moszko J.K., Popescu L.G., **Predeanu G.**, Santos C. S. *Undifferentiated inorganics in coal fly ash and bottom ash: calcispheres, magnesiocalcispheres, and magnesiaspheres*. *International Journal of Coal Geology, Special Issue of Minerals (Trace elements and minerals in coal and coal combustion residues)* *Minerals* **2018**, *8*, 140.
29. Suárez-Ruiz I., Valentim B., Borrego A.G., Bouzinos A., Flores D., Kalaitzidis S., Malinconico M.L., Marques M., Misz-Kennan M., **Predeanu G.**, Montes J.R., Rodriguez S., Siavalas G., Wagner N. *Development of a petrographic*

classification of fly-ash components from coal combustion and co-combustion. (An ICCP Classification System, Fly-Ash Working Group – Commission III.) International Journal of Coal Geology 183, **2017**, 188-203.

30. Sereanu V., Feraru L., **Predeanu G., Meghea A.** Microstructure, and chemical characterization of *Rapana Thomasiana* shell. U.P.B. Sci. Bull., Series B, Vol. 79, Iss. 1, 81-92 (**2017**), ISSN 1454 – 2331.
31. **Predeanu G.,** Popescu L. G., **Abagiu T. A., Panaitescu C.,** Valentim B., Guedes A. Characterization of bottom ash of Pliocene lignite as ceramic composites raw material by petrographic, SEM/EDS and Raman microspectroscopical methods, International Journal of Coal Geology 168, **2016**, 131–145.
32. Mihăiescu D.C., **Panaitescu C., Predeanu G.** Petrographic assessing of combustion waste products quality resulting from Berbești lignite burning in Govora power plant, Revista de Chimie, 66, 6, **2015**, 874-878.
33. **Predeanu G.,** Mihăiescu D.C., **Panaitescu C.** Morphology, structure, and composition of some technological wastes released from blast furnace operation, Revista de Chimie, 66, 4, **2015**, 570-574.
34. **Predeanu G., Panaitescu C., Bălănescu M.,** Bieg G., Gómez Borrego A., Diez M. A., Kwiecińska B., Marques M., Mastalerz M., Misz-Kennan M., Pusz S., Suárez Ruiz I., Rodriguez S., Singh A. K., Varma A., Zdravkov A., Žvotič D. Microscopically characterization of carbon materials derived from coal and petroleum and their interaction phenomena on making steel electrodes, anodes and cathodes blocks, International Journal of Coal Geology, 139, **2015**, 63-79.
35. Mihăiescu D.C., **Panaitescu C., Predeanu G.** Petrographic assessing of combustion waste products quality resulting from Berbești lignite burning in Govora power plant, Revista de Chimie, 66, 6, **2015**, 874-878.
36. **Predeanu G.,** Mihăiescu D.C., **Panaitescu C.** Morphology, structure, and composition of some technological wastes released from blast furnace operation, Revista de Chimie, 66, 4, **2015**, 570-574.
37. Mihăiescu D. C., **Predeanu G., Panaitescu C.** Characterization of some blast furnace waste dusts. UPB Scientific Bulletin, Series B: Chemistry and Materials Science, 76, issue 1, **2014**, 227-234. Editura Politehnica Press ISSN: 1454-2331.

#### **Articole în alte Reviste Științifice (ISSN)**

38. Ghiran M.D., **Predeanu G.,** Popa M.E. **2024.** Petrographic identification of Carboniferous coal inclusions from Amara cores, Romania, ICCP News No 88, April 2024, 18-19. On-Line ISSN 1445-4858.
39. **Predeanu G.** In memoriam - Profesor Emerit Cornelia PANAITESCU, Buletinul S. Ch. R. Nr. XXVI, 3, **2019**, 4-10. ISSN 2066-2971.
40. Angheliescu, L., Abagiu, T., Cruceru, M., Valentim, B., Diaconu, B., **Predeanu, G.,** **2017.** Obtaining thermal insulating refractory products using ash from thermal coal containing residual coal. International Journal of Power Systems, vol. 2, 14-20.
41. Angheliescu, L., Abagiu, T., Cruceru, M., Valentim, B., **Predeanu, G.,** Diaconu, B., **Slăvescu, V.,** **2017.** Utilization of Coal-Fired Ash Waste in the Production of Heat-Resistant Refractory Products, International Journal of Environmental Science, vol. 2, 272-277.
42. Cruceru, M., Valentim, B., **Predeanu, G.,** Abagiu, T.A., **Slăvescu, V.,** Angheliescu, L., **2017.** Concentration of the residual carbon from bottom ash by particle size separation, International Journal of Geology, vol. 11, 1-7.
43. Cruceru, M., Valentim, B., Angheliescu, L., Barbara, B., Freire, C., Lazaro Martinez, J., **Predeanu, G.,** Wagner, N., Santos, C., Abagiu, T., **2017.** Preconcentration techniques for residual coal from bottom ash. Part 2 – Results and discussion. Annals of the "Constantin Brancusi" University - Engineering, Targu Jiu, 2, 15-20.
44. Cruceru, M., Valentim, B., Barbara, B., Freire, C., Lazaro Martinez, J., **Predeanu, G.,** Wagner, N., Santos, C., Abagiu, T., Angheliescu, L., **2017.** Pre concentration techniques for residual coal from bottom ash. Part 1 – Methodology and procedures. Annals of the "Constantin Brancusi" University - Engineering, Targu Jiu, 2, 9-14.

#### **Articole în Conference Proceedings (Comitet de Program)**

45. **Predeanu G., Slăvescu V., Vasile B.S.,** Valentim, B., Guedes, A., Santos, A.C., Ye, G., Mousa, E. **2024.** Characterization of the ash samples used for thermal recovery of phosphorus. Organic Petrology Research and Applications for the 21<sup>st</sup> Century Book of Abstracts, Ed. Angeles G. Borrego, ISBN 978-84-09-64258-8, pp. 35.
46. Popescu L.P, Popa R., Angheliescu L., Cazalbasu R., **Predeanu G., Vasile B. S.** **2024.** New possibilities of using the ash resulting from the energy recovery of poultry litter within the circular economy concept. International Conference "Agriculture for Life, Life for Agriculture" Book of abstracts Land reclamation, Earth Observation & Surveying, Environmental Engineering 2024, Section 5, Eds: Razvan Teodorescu, Ana Virsta, Mirela Alina Sandu. ISSN 2457-3248, p.39.
47. **Predeanu G, Slăvescu V, Drăgoescu M.F.,** Samoilă P, Fiti A. **2023.** Microscopic assessment of some biomass chars. Joint 74<sup>th</sup> Annual Meeting and Symposium of the International Committee for Coal and Organic Petrology and 39<sup>th</sup> TSOP Meeting. Symposium Organic Petrology in the Energy Transition Era: Challenges ahead. Bulletin of the

Geological Society, Special Publication No. 12, ISBN 978-960-98709-9-3, ISSN 2945-1418. pp. 72.

48. **Predeanu G.**, Wojtaszek-Kalaitzidi M., Suárez Ruiz I., **Bălănescu M.**, Gómez Borrego A., Diez M. A., Garcia L., Ghiran M. D., Hackley P., Kalaitzidis S., Kus J., Mancisor D., Mastalerz M., Misz-Kennan M., Pusz S., Rodriguez S., Siavalas G., Singh A. K., Tomillo P., Varma A., Zdravkov A., Životić D. *Microscopic characterization of carbon materials derived from coal and biomass and their interaction phenomena in making high grade products*. Joint 74<sup>th</sup> Annual Meeting and Symposium of the International Committee for Coal and Organic Petrology and 39<sup>th</sup> TSOP Meeting. Symposium Organic Petrology in the Energy Transition Era: Challenges ahead. Bulletin of the Geological Society, Special Publication No. 12, 2023, ISBN 978-960-98709-9-3, ISSN 2945-1418. pp. 73.
49. **Predeanu G.**, **Slăvescu V.**, **Manea-Saghin A-M.**, **Meghea A.**, **Bălănescu N.M.** *Innovative recycling of biopolymeric wastes for environmental application*. Proceedings of 23rd International Multidisciplinary Scientific GeoConference SGEM 2023, Vol. 23, Issue 4.1, 1-8, Publisher STEF92 Technology, ISBN 978-619-7603-59-0, ISSN 1314-2704, 1-10 July 2023. In: DOI: [10.5593/sgem2023/4.1/s18.21](https://doi.org/10.5593/sgem2023/4.1/s18.21).
50. **Predeanu G.**, **Slăvescu V.**, **Drăgoescu M.F.**, **Bălănescu M.**, **Abagiu T.A.**, **Manea-Saghin A-M.**, Samoilă P. Harabagiu V., Cosmulescu F. *Pyrolysis of lignocellulosic waste, a process to obtain suitable precursors for making carbon sorbents*. 22<sup>nd</sup> Romanian International Conference on Chemistry and Chemical Engineering Sinaia, ROMANIA - September 7 – 9, 2022.
51. Santos A.C, Badenhorst C., Bialecka B., Guedes A., **Predeanu G.**, Wagner N., Valentim, B. *Graphitization of coal chars 2022*. 73 Annual Meeting and Symposium of the International Committee for Coal and Organic Petrology. Recent trends on coal utilization for sustainable development and energy security, Abstract Volume, September, 18-25 Sept. 2022, New Delhi, India, 7-9.
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## 2. Activitatea de expertizare (2016-2018, 2022-2024)

### Valerica Slăvescu: Coordonator

**Activități prestate:** Analize chimico-tehnice și microscopice pentru produse pe bază de carbon (antracit, huiță, cocs de petrol brut și calcinat, amestecuri pentru procese metalurgice, materiale carbonice) și deseuri vegetale.

**Beneficiari:** Seven Grup Manasia, jud. Ialomița; T&T Eurogroup, Piatra Neamț; MMS Minerals & Metals Solutions București; Ronera Rubber S.A., Pitesti; SILCOREX, București; MARCOBAD, jud. Dâmbovița; ECO SHORGUM, jud. Ilfov.

**Total comenzi/contracte (în 5 ani):** 40

**Sume încasate/în curs de încasare: 98.186 lei (inclusiv TVA), echivalentul a cca. 20.000 Euro**

Sumele ar fi fost posibil mai mari, însă în perioada pandemiei COVID19 nu s-au înregistrat comenzi.

## 3. Colaborare cu alte centre academice din țară:

UNIVERSITATEA "CONSTANTIN BRÂNCUȘI" DIN TÂRGU JIU,  
Institutul de Chimie Macromoleculară, Petru Poni", Iași.





#### 4. Colaborare cu alte centre academice din străinătate





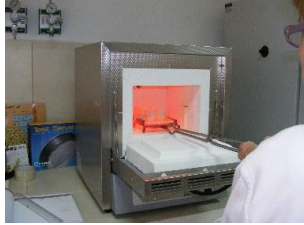
UP - UNIVERSITATEA DIN PORTO, PORTUGALIA - Faculty of Sciences of Porto University,  
UNIBS - University of Brescia, ITALY, Department of Mechanical and Industrial Engineering  
GIG - Central Mining Institute (Główny Instytut Górnictwa), Katowice, POLAND  
UEGE - University of EGE, Solar Energy Institute, IZMIR, TURKEY  
Instituto Nacional del Carbon – INCAR-CSIC, Oviedo, SPAIN  
University of EAST Anglia, Norwich, UK  
Wrocław University of Science and Technology, Wrocław, POLAND  
DSI-NRF CIMERA, Department of Geology, University of Johannesburg, South Africa.  
Universidad de Buenos Aires, Departamento de Química Orgánica, IQUIMEFA-UBA-CONICET, Argentina  
Université de Lorraine, CNRS, CREGU, Faculté des Sciences et Technologies, Nancy, France  
University of Patras, Patras, GRECE







#### 5. Colaborare cu societăți comerciale din țară și din străinătate






SOCIETATEA COMPLEXUL ENERGETIC OLTENIA S.A.,  
CLAUDIU TOPROM SRL BUCUREȘTI,  
COSFEL ACTUAL SRL, BUCUREȘTI  
Industrial Química del Nalón, S.A., Trubia, Spain  
SWERIM AB, METALLURGY DEPARTMENT, LULEA, SWEDEN  
PROGEO, POLAND,  
CAMPOAVES – AVES DO CAMPO, SA, PORTUGAL  
MEFOS - SWEREA MEFOS SUSTAINABLE PROCESS TECHNOLOGY, SWEDEN

#### 6. Echipamente noi achiziționale în cadrul proiectelor de cercetare (2014-2024)

Nr. crt.	Echipament tip laborator	Caracteristici	Cantitate
1	Mojar mecanic Retsch	<b>Mojar de laborator RETSCH RM200</b> Caracteristici: Cuvă și pistil din porțelan dur; capacitate de măcinare 10... 190 ml; turație motor 100 rot/min; reglaje presiuni de măcinare; reglaj timp de măcinare 1...99 min.	
2	Moară cu bile Retsch	<b>Moară planetară cu bile RETSCH</b> Caracteristici: Moară planetară cu bile PM 100 pulverizează și amestecă materiale moi, cu duritate medie, până la cele extrem de dure, precum și materiale casante și fibroase. < 1 μm, pentru macinare coloidală < 0.1 μm;	

3	<i>Aparat sitare Retsch</i>	<p><b>Aparat pentru sitat AS200 RETSCH</b>  Caracteristici: mișcare tridimensională; sitare uscată și umedă; variator al vitezei și amplitudinii de sitare; diametrul acceptat al sitei 203 mm.</p>	
4	<i>Balanță analitică</i>	<p><b>Balanță analitică KERN ABJ-NM/ABS-N model ABJ 220-4NM</b>  Caracteristici: precizie 0,1 mg, greutate maximă de cântărire 220 g; greutate minimă de cântărire 10 mg; repetabilitate 0,2 mg; liniaritate <math>\pm 0,3</math> mg; timp de stabilizare 3 sec.</p>	
5	<i>Balanță de precizie</i>	<p><b>Balanță de precizie KERN model PLJ 3000-2CM</b>  Caracteristici: precizie 0,01 g, greutate maximă de cântărire 3500 g; repetabilitate 0,01 g; liniaritate <math>\pm 0,04</math> g.</p>	
6	<i>Etuvă de laborator</i>	<p><b>Etuvă electrică POL-EKO, versiunea STD, model SL 115</b>  Caracteristici: volum util 112 l; convenție forțată (SLW); domeniu de temperatură 20 ..... 300 °C; microprocesor cu display extern.</p>	
7	<i>Cuptor electric Nabertherm</i>	<p><b>Cuptor de laborator NABERTHERM model L9/11/B180</b>  Caracteristici: temperatură maximă 1100 °C; volum 9 l; programator de temperatură; putere consumată 3 kW.</p>	
8	<i>pH-metru</i>	<ul style="list-style-type: none"> <li>- domeniul de măsurare: 0 – 14 unități de pH</li> <li>- precizie măsurare: <math>\pm 0,1</math> unități de pH</li> <li>- calibrare manuală</li> </ul>	1 buc.

9	<i>Monodistilator apă brută</i>	<p><b>Distilator de apă GFL model 2001/2</b>  Caracteristici: capacitate distilare 2 l/h; monodistilare; consum de apă pentru răcire 20 l/h; putere consumată 2 kW.</p>	
10	<i>Baie de nisip</i>	<p><b>Baie de nisip FALC model S 70</b>  Caracteristici: capacitate tanc 6 l; domeniul de temperatură ambient.....450 °C; putere consumata 1 kW</p>	
11	<i>Plită electrică</i>	<p><b>Plită electrică VELP model RC2 cu două poziții</b>  Caracteristici: domeniul de temperatură ambient.....370 °C; diametru plită 155 mm; putere consumata 600 W.</p>	
12	<i>Agitator magnetic</i>	<p><b>Agitator magnetic cu încălzire LED model RSM-10HP</b>  Caracteristici: frecvență 50/60 Hz; utilizează 1 bară magnetică; viteza de rotație 100....1500 rot/min; temperatura de siguranță a platanului 320 °C.</p>	
13	<i>Baie ultrasonică</i>	<p><b>Baie ultrasonică ELMA model S 100H</b>  Caracteristici: volum util tanc 7,50 l; cu încălzire până la 80 °C; frecvență ultrasunete 37 kHz; putere ultrasunete 150 W; putere încălzire 400 W.</p>	
14	<i>Platformă de agitare</i>	<p><b>Platformă de agitare HEIDOLPH model Rotamax 120</b>  Caracteristici: capacitate de încărcare 2 kg; miscare de rotație; orbital 20 mm; viteza de rotație 20-300 rot/min; putere 33 W.</p>	

15	<i>Echipament pentru presarea la cald a probelor pentru studiul microscopic</i>	<b>Echipament pentru presarea la cald a probelor ATA model Opal 410</b> Caracteristici: utilizata pentru obtinerea slifurilor pentru microscopie; utilizează matrite incalzite de la $\Phi 25.2$ pana la $\Phi 40$ mm; temperatura maximă a matritei 200 °C; presiunea hidraulica maxima 180 barr; timp de presare 0...30 min.	
16	<i>Echipament pentru slefuirea si lustruirea probelor destinate studiului microscopic</i>	<b>Echipament pentru slefuirea si lustruirea probelor destinate studiului microscopic ATA model Saphir 330</b> Caracteristici: două posturi de lucru; diametru platan 250 mm; viteza de rotatie platan 50-600 rot/min	
17	<i>Microscop</i> (existent in cadrul CPMTE înainte de anul 2014, upgradat cu camera video și soft aferent, în 2019)	<b>Microscop OLYMPUS BX51M</b> Caracteristici: Dotat cu camera de transmisie pe monitor a imaginilor, model CCD-1300QB și sistem motorizat de deplasare a probei pe orizontală, cu imersie în ulei sau glicerină. Posibilitati de lucru in lumina normal reflectata si polarizata. Dotat cu soft specializat pentru determinarea reflectantei vitritului si a porozitatii cocsului.	
18	<i>Spectrofotometru UV-VIS</i> <i>Perkin Elmer</i>	<b>Spectrofotometru UV-VIS, model LAMBDA 365.</b> <b>Caracteristici:</b> domeniul spectral: 190 – 1100 nm; acuratețea lungimii de undă: $\pm 1$ nm; reproductibilitatea lungimii de undă: $\pm 0,25$ nm; moduri de măsurare: A, C, T(%); reglare automată a lungimii de undă și a filtrului; schimbare automată a cuvelor (7 cuve); sistem optic: dublu fascicol; pachet Software pentru comandă și prelucrare a datelor pe computer; interfață.	
19	<i>Pompa de vid</i> <i>Vacuubrand</i> <i>Modelme 4c nt</i>	<b>Pompa de vid</b> Caracteristici: vacuum realizat: 70 mbar, presiune max. 1.1 bar.	

Intocmit,

Dr. Ing. Georgeta Predeanu CSI – Coordonator colectiv Carbochimie