

**Titlu proiect: Instrument de tip nas electronic pentru detectia concentratiilor scazute de gaze explozive si poluante**

**Categoria de proiect: Proiecte Colaborative de Cercetare**

**Aplicativă-PN-II-PT-PCCA-2013-4-1487**

**Contractul de finanțare: NR. 13/01/07/2014**

**Manager proiect: Gartner Florica-Mariuca**

### Lista rezultate finale

| Nr. crt.            | NUME AUTORI                                                                                                                                                                                                                                                               | TITLUL ARTICOLULUI / CĂRȚII / COMUNICĂRII ȘTIINȚIFICE                                                                                             | REVISTA / VOLUMUL/EDITURA IN CARE A APARUT / CONFERINTA LA CARE S-A COMUNICAT | ANUL PUBLICĂRII/ COMUNICĂRII |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------|
| <b>ARTICOLE ISI</b> |                                                                                                                                                                                                                                                                           |                                                                                                                                                   |                                                                               |                              |
| <b>2015</b>         |                                                                                                                                                                                                                                                                           |                                                                                                                                                   |                                                                               |                              |
| <b>1</b>            | P. Chesler, C. Hornoiu, V. Bratan, C. Munteanu, M. Gartner, N.I. Ionescu                                                                                                                                                                                                  | „CO sensing properties of TiO <sub>2</sub> “                                                                                                      | Rev. Roum. Chim-60, 4 (2015)                                                  | 2015                         |
| <b>2016</b>         |                                                                                                                                                                                                                                                                           |                                                                                                                                                   |                                                                               |                              |
| <b>2</b>            | Duta-Capra Maria - Predoana Luminita, Calderon Moreno Jose Maria, Preda Silviu, Anastasescu Mihai, Marin Horia Alexandru, Nicolescu Madalina, Dascalu Myrella Izabella, Chesler Paul Cristian, Hornoiu Ovidiu Cristian, Zaharescu Maria, Gartner Mariuca, Osiceanu Petre, | Nb-doped TiO <sub>2</sub> sol-gel films for CO sensing applications                                                                               | Materials Science in Semiconductor Processing, pag 397-404, V-42, an 2016     | Publicat 2016                |
| <b>3</b>            | Chesler Paul Cristian, Hornoiu Ovidiu Cristian, Mihaiu Maria Suzana, Munteanu Cornel, Gartner Mariuca                                                                                                                                                                     | Tin-Zinc oxide composite ceramics for selective CO sensing                                                                                        | CERAMICS INTERNATIONAL vol. 42, pp. 16677-16684,                              | 2016                         |
| <b>4</b>            | Dascalu Myrella Izabella, Culita Daniela, Calderon Moreno Jose Maria, Osiceanu Petre, Hornoiu Ovidiu Cristian, Anastasescu Mihai, Somacescu Simona, Gartner Mariuca                                                                                                       | Structural, textural, surface chemistry and sensing properties of mesoporous Pr, Zn modified SnO <sub>2</sub> -TiO <sub>2</sub> powder composites | CERAMICS INTERNATIONAL, pag. 14992-14998, V42, an 2016                        | 2016                         |
| <b>5</b>            | Chesler Paul Cristian, Hornoiu Ovidiu Cristian, Bratan Veronica, Munteanu                                                                                                                                                                                                 | CO sensing properties of SnO <sub>2</sub> -CeO <sub>2</sub> mixed oxides                                                                          | React. Kinet. Mech. Catal., vol. 117, no. 2, pp. 551-563, 2016                | 2016                         |

|                                              |                                                                                                                                                                                                                                                                                |                                                                                                                    |                                                                                                                                                                                                                                                                |      |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                                              | Cornel, Postole Gina,<br>Ionescu Niculae Ion,<br>Juzsakova Tatiana, Redey<br>Akos, Gartner Mariuca                                                                                                                                                                             |                                                                                                                    |                                                                                                                                                                                                                                                                |      |
| 6                                            | Chesler Paul Cristian,<br>Hornoiu Ovidiu Cristian,-<br>Mihaiu Maria Suzana,<br>Vladut Maria-<br>Cristina, Calderon Moreno<br>Jose Maria, Anastasescu<br>Mihai, Moldovan Carmen,<br>Firtat Ionut-<br>Bogdan, Brasoveanu Costin,<br>Muscalu George, Stan Ion,<br>Gartner Mariuca | Nanostructured SnO <sub>2</sub> -ZnO<br>composite gas sensors for<br>selective detection of CO                     | Beilstein Journal of<br>Nanotechnology, 2016, 7,<br>2045-2056                                                                                                                                                                                                  | 2016 |
| <b>2017</b>                                  |                                                                                                                                                                                                                                                                                |                                                                                                                    |                                                                                                                                                                                                                                                                |      |
| 7                                            | Carmen Moldovan, Bogdan<br>Firtat, Costin Brasoveanu,<br>George Muscalu, Silviu<br>Dinulescu, Mariuca<br>Gartner, Maria Zaharescu,<br>Paul Chesler, Cristian<br>Hornoiu, Susana Mihaiu,<br>Cristina Vladut, Izabella<br>Dascalu, Vlad Georgescu,<br>Ion Stan                   | "Miniaturised MOX based<br>sensors for pollutant and<br>explosive gases detection"                                 | <i>Sensors and Actuators</i> -<br>249 (2017) 647-655                                                                                                                                                                                                           | 2017 |
| <b>COMUNICARI STIINTIFICE INTERNATIONALE</b> |                                                                                                                                                                                                                                                                                |                                                                                                                    |                                                                                                                                                                                                                                                                |      |
| <b>2015</b>                                  |                                                                                                                                                                                                                                                                                |                                                                                                                    |                                                                                                                                                                                                                                                                |      |
| 1                                            | <u>M. Duta (drd)</u> , M.<br>Nicolescu, M. Anastasescu,<br>J. Calderon-Moreno, S.<br>Preda, A. Marin, P.<br>Osiceanu, P. Chesler, C.<br>Hornoiu, S. Mihaiu, M.<br>Zaharescu, M. Gartner<br><b>Prezentare orală</b>                                                             | Substrate influence on opto-<br>electrical and CO sensing<br>properties of p-type In-N co-<br>doped ZnO thin films | E-MRS 2015 Spring<br>Meeting, May 11, 2015,<br>Lille, France                                                                                                                                                                                                   | 2015 |
| 2                                            | C. Moldovan, B. Firtat, C.<br>Brasoveanu, G. Muscalu, I.<br>Stan, V. Georgescu,<br>P. Chesler, C. Hornoiu, M.<br>Gartner, M. Zaharescu, S.<br>Mihaiu, C. Vladut<br><b>Prezentare orală</b>                                                                                     | Design and technology of a<br>ceramic sensor for gas<br>detection                                                  | Workshopul: Advanced<br>optical and X-ray<br>characterization<br>techniques of<br>multifunctional materials<br>for information and<br>communication<br>technologies, sensing and<br>renewable energy<br>applications<br>16-18 Sept. 2015,<br>Bucharest-Romania | 2015 |
| 3                                            | P. Chesler, C. Hornoiu, M.<br>Duta, L. Predoana, J.M.<br>Calderon-Moreno, S. Preda,<br>M. Anastasescu, A. Marin,<br>I. Dascalu, M. Gartner<br><b>Prezentare orală</b>                                                                                                          | CO sensing properties of Nb-<br>doped TiO <sub>2</sub> sol-gel films                                               | Workshopul: Advanced<br>optical and X-ray<br>characterization<br>techniques of<br>multifunctional materials<br>for information and<br>communication<br>technologies, sensing and<br>renewable energy<br>applications<br>16-18 Sept. 2015,<br>Bucharest-Romania | 2015 |
| <b>2016</b>                                  |                                                                                                                                                                                                                                                                                |                                                                                                                    |                                                                                                                                                                                                                                                                |      |
| 4                                            | <b>P. Chesler</b> , C. Hornoiu,<br>M. Gartner, S. Mihaiu, M.                                                                                                                                                                                                                   | Gas sensing characteristics of<br>SnO <sub>2</sub> -ZnO thin film metal                                            | EMRS Spring Meeting,<br>Mai 2016, Lille-Franta,                                                                                                                                                                                                                | 2016 |

|             |                                                                                                                                                                                                                                                |                                                                                                                                                    |                                                                                                                                  |      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------|
|             | Zaharescu, L. Predoana, C. Moldovan, B. Firtat, I. Stan, <b>Prezentare orală</b>                                                                                                                                                               | oxide sensors,                                                                                                                                     |                                                                                                                                  |      |
| <b>5</b>    | C. Moldovan, B. Firtat, C. Brasoveanu, G. Muscalu, S. Dinulescu, M. Gartner, M. Zaharescu, <b>P. Chesler</b> , C. Hornoiiu, S. Mihaui, C. Vladut, I. Dascalu, I. Stan, <b>V. Georgescu poster</b>                                              | “Sensor microarray for pollutant and explosive gases detection”                                                                                    | <i>IMCS 2016</i> – The 16th International Meeting on Chemical Sensors (10–13 Iulie 2016, Ramada Plaza Jeju, Jeju Island, Korea), | 2016 |
| <b>6</b>    | <b>M. Gartner, P. Chesler</b> , C. Hornoiiu, S. Mihaui, L. Predoana, J.M. Calderon-Moreno, I. Dascalu, <b>S. Preda</b> , M. Zaharescu, C. Moldovan, B. Firtat, I. Stan, <b>poster</b>                                                          | Sensors based on metallic oxide semiconductor nanostructured films                                                                                 | <i>IMCS 2016</i> – The 16th International Meeting on Chemical Sensors (10–13 Iulie 2016, Ramada Plaza Jeju, Jeju Island, Korea)  | 2016 |
| <b>7</b>    | <b>P. Chesler</b> , C.Hornoiiu, M. Gartner, S. Mihaui, <b>C. Vlăduț</b> , M. Zaharescu, L. Predoană, C. Moldovan, B. Firtat and I. Stan, <b>prezentare orală</b>                                                                               | Thin film SnO <sub>2</sub> -ZnO composite metal-oxide semiconductor sensors for selective CO detection,                                            | International Conference of Physical Chemistry-Romphyschem 16                                                                    | 2016 |
| <b>8</b>    | <b>M. Nicolescu</b> , L. Predoana, M. Anastasescu, <b>S. Preda, P. Chesler</b> , M. Gartner, M. Zaharescu, <b>poster</b>                                                                                                                       | Structural and optical characterization of doped TiO <sub>2</sub> films                                                                            | International Conference of Physical Chemistry-Romphyschem 16<br><br>(21–24 Septembrie 2016, Galati, Romania)                    | 2016 |
| <b>9</b>    | <b>E. Tenea</b> , C. Vladut, <b>P. Chesler</b> , S. Preda, J. Calderon-Moreno, M. Anastasescu, C. Moldovan, A. Voicu M. Gartner, S. Mihaui, M. Zaharescu, <b>poster</b>                                                                        | Influence of the substrates on the sensing properties of the Zn-doped SnO <sub>2</sub> thin sol-gel films,                                         | International Conference of Physical Chemistry-Romphyschem 16<br><br>(21–24 Septembrie 2016, Galati, Romania)                    | 2016 |
| <b>10</b>   | <b>Dascalu Izabella</b> , Culita Daniela, Calderon Moreno Jose maria, Osiceanu Petre, Hornoiiu Cristian, Anastasescu Mihai, Somacescu Simona, Gartner F. Mariuca <b>poster</b>                                                                 | Structural, textural, surface chemistry and sensing properties of mesoporous Pr, Zn modified SnO <sub>2</sub> -TiO <sub>2</sub> powder composites, | International Conference of Physical Chemistry-Romphyschem 16<br><br>(21–24 Septembrie 2016, Galati, Romania)                    | 2016 |
| <b>11</b>   | <b>Hornoiiu Cristian</b> , Dascalu Izabella, Somacescu Simona, Gartner Mariuca <b>poster</b>                                                                                                                                                   | Electrical properties and gas sensor performance for Zinc-Titanium- Iron mixed oxides                                                              | International Conference of Physical Chemistry-Romphyschem 16<br><br>(21–24 Septembrie 2016, Galati, Romania)                    | 2016 |
| <b>12</b>   | Carmen Moldovan, Costin Brasoveanu, George Muscalu, Bogdan Firtat, Mariuca Gartner, Maria Zaharescu, <b>Paul Chesler</b> , Cristian Hornoiiu, Susana Mihaui, <b>Cristina Vladut, Izabella Dascalu, Vlad Georgescu</b> , Ion Stan <b>poster</b> | Design and technology of micromachined gas sensors,                                                                                                | International Conference of Physical Chemistry-Romphyschem 16<br><br>(21–24 Septembrie 2016, Galati, Romania)                    | 2016 |
| <b>2017</b> |                                                                                                                                                                                                                                                |                                                                                                                                                    |                                                                                                                                  |      |
| <b>13</b>   | L. Predoana, S. Preda, M. Anastasescu, J.M.                                                                                                                                                                                                    | „Sol-gel TiO <sub>2</sub> based films for                                                                                                          | 19th Sol-Gel Conference,                                                                                                         | 2017 |

|                                  |                                                                                                            |                                                                                                                                                                             |                                                                     |      |
|----------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------|
|                                  | Calderon Moreno, M.<br>Nicolescu, M. Gartner, M.<br>Zaharescu                                              | sensing applications”,                                                                                                                                                      | Sept 3-8, 2017, Liege,<br>Belgium                                   |      |
| <b>Prezentare prototip</b>       |                                                                                                            |                                                                                                                                                                             |                                                                     |      |
| <b>1</b>                         | IMT si Romelgen                                                                                            | “Modul de testare senzor si<br>senzor de CO”,                                                                                                                               | Targul Tehnic<br>International<br>Bucuresti,14-17<br>Octombrie 2015 | 2015 |
| <b>CERERI BREVET DE INVENTII</b> |                                                                                                            |                                                                                                                                                                             |                                                                     |      |
|                                  | I. Stan, P. Chesler, C.<br>Hornoiu, C. Moldovan, M.<br>Gartner, V. Georgescu, B.<br>Firtat, C. Brasoveanu. | “Miniplatforma de testare<br>pentru microsenzori selectivi<br>in detectia gazelor toxice<br>(monoxid de carbon, bioxid<br>de carbon) si explozive<br>(metan, propan)”       | A/00696 din 21.09.2017                                              | 2017 |
| <b>ALTE rezultate</b>            |                                                                                                            |                                                                                                                                                                             |                                                                     |      |
| <b>2015</b>                      |                                                                                                            |                                                                                                                                                                             |                                                                     |      |
| <b>1</b>                         | Dascalu Myrella Izabella                                                                                   | Nanostructure oxides based<br>on Zn and Ti with sensing<br>properties                                                                                                       | Referat teza doctorat                                               | 2015 |
| <b>2</b>                         | Chesler Paul-Cristian                                                                                      | CO sensing properties of<br>TiO <sub>2</sub>                                                                                                                                | Referat teza doctorat                                               | 2015 |
| <b>3</b>                         | Chesler Paul-Cristian                                                                                      | CO sensing properties of Nb-<br>doped TiO <sub>2</sub> sol–gel films                                                                                                        | Referat teza doctorat                                               | 2015 |
| <b>2016</b>                      |                                                                                                            |                                                                                                                                                                             |                                                                     |      |
| <b>1</b>                         | Dascalu Myrella Izabella                                                                                   | Corelatii structura –<br>proprietati fizico-chimice in<br>semiconductori oxidici cu<br>aplicatii optice, senzorstice<br>si magnetice                                        | Teza doctorat-2016                                                  | 2016 |
| <b>2</b>                         | Vlad Georgescu                                                                                             | “Analiza complexa a datelor<br>din sisteme SCADA<br>industriale-10.2016                                                                                                     | Teza doctorat-2016                                                  | 2016 |
| <b>2017</b>                      |                                                                                                            |                                                                                                                                                                             |                                                                     |      |
| <b>1</b>                         | Chesler Paul-Cristian                                                                                      | „Oxizi cu proprietăți de<br>senzori de gaze“ – 26.01.2017                                                                                                                   | Teza doctorat-2017                                                  | 2017 |
| <b>2</b>                         | Preda Silviu Nicolae                                                                                       | „Nanostructuri oxidice ale<br>unor metale tranzitionale” –<br>Capitolul 8.1 Testarea<br>senzoristica a<br>microsenzorilor pe baza de<br>nanotuburi de titanat” -<br>10.2017 | Teza doctorat-2017                                                  | 2017 |
| <b>3</b>                         | Vladut Cristina                                                                                            | “Materiale ceramice cu<br>proprietati speciale bazate pe<br>ZnO” – Capitol: Filme subtiri<br>in sistemul ZnO - SnO <sub>2</sub> -<br>12.2017                                | Teza doctorat-2017                                                  | 2017 |

**Lista achizițiilor realizate în cadrul proiectului**

| <b>Denumire echipament</b>                                                    | <b>Categorie de achiziții*:<br/>(numai mijloace fixe)</b> | <b>Valoarea (lei)</b> | <b>Locație</b>           |
|-------------------------------------------------------------------------------|-----------------------------------------------------------|-----------------------|--------------------------|
| Laptop HP EliteBook 820GI                                                     | Directa/2014                                              | 4649.99               | Zaharescu Maria          |
| Debitmetru de masa Aalborg cu sursa de alimentare                             | Directa/2016                                              | 6534                  | Chesler Paul             |
| 2110-240-GPIB Keithley 5 DIGIT DMM WITH GPIB 240W VERSION(multimetru digital) | Directa/2016                                              | 4224                  | Chesler Paul             |
| Autoclava                                                                     | Directa/2016                                              | 5868                  | Anastasescu Crina        |
| Autoclava                                                                     | Directa/2016                                              | 6840                  | Stroescu Hermine cam.135 |
|                                                                               |                                                           |                       |                          |

**Director proiect,**

**Gartner Florica-Mariuca**