



## Diogo Elias da Vinha Andrade

Graduated in Industrial Mechanical Engineering at Federal University of Technology - Paraná – Brazil (UTFPR) (2009) and received a master degree at Postgraduate Program in Mechanical and Materials Engineering (PPGEM) in that University (2011). It is a Research Engineer at Research Center for Rheology and Non-Newtonian Fluids (CERNN – cernn.ct.utfpr.edu.br) since 2012 and works focusing on rheology and rheometry of Non-Newtonian fluids. Diogo has knowledge and expertise, gleaned over the years on CERNN, in drilling fluids, waxy crude oils, start-up flow on pipelines and mathematical models. Ph.D. in progress since 2013 in analysis of the wax crystallization in the petroleum area.

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### Personal Information

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### Formal Education/Degree

- 2013-2017** Ph.D. *in progress* at Mechanical Engineer.  
Federal University of Technology - Paraná – Brazil (UTFPR)  
Theme: The influence of the thermal history on morphology of crystals and mechanical properties of waxy oils  
Advisor: Prof. Cezar Otaviano Ribeiro Negrão, Ph.D.  
Co-advisor: Prof. Moisés Alves Marcelino Neto, Dr.
- 2009 - 2011** Master degree in Mechanical Engineer.  
Federal University of Technology - Paraná – Brazil (UTFPR)  
Year of degree: 2011.  
Advisor: Prof. Cezar Otaviano Ribeiro Negrão, Ph.D.
- 2004 - 2009** Graduation in Industrial Mechanical Engineering.  
Federal University of Technology - Paraná – Brazil (UTFPR)  
Advisor: Prof. Cezar Otaviano Ribeiro Negrão, Ph.D.

### Complementary Education

- 2015 - 2015** Gas Hydrates in Flow Assurance Workshp. (Credit Hours: 16h).  
Federal University of Technology - Paraná – Brazil (UTFPR)
- 2010 - 2010** Neuro Linguistic Programming - NLP (Master). (Credit Hours: 100h).  
Instituto Anauê-Teiño, IAT, Brazil.
- 2010 - 2010** Neuro Linguistic Programming - NLP (Practitioner). (Credit Hours: 100h).  
Instituto Anauê-Teiño, IAT, Brazil.

### Scientific Journal Reviewer

**2016 - Present** Journal: Fuel (Guildford) - ISSN: 0016-2361

### Scientific and Technological Production

#### Bibliographical Production

#### Articles in Scientific Journals

1. FERNANDES, RUBENS R. ; ANDRADE, DIOGO E. V. ; FRANCO, ADMILSON T. ; NEGRÃO, CEZAR O. R. . **Correlation Between The Gel-Liquid Transition Stress And The Storage Modulus Of An Oil-Based Drilling Fluid**. Journal of Non-Newtonian Fluid Mechanics (Print), v. 231, p. 6-10, 2016.
2. ANDRADE, DIOGO E. V. ; DA CRUZ, ANA C. B. ; FRANCO, ADMILSON T. ; NEGRÃO, CEZAR O. R. **Influence of the initial cooling temperature on the gelation and yield stress of waxy crude oils**. Rheologica Acta (Print), v. 54, p. 149-157, 2015.

3. ANDRADE, DIOGO E.V; NEGRÃO, CEZAR O.R. **Analysis of start-up tests of household refrigeration systems. A potential for on-line predictions of test results.** Applied Thermal Engineering, v. 54, p. 255-263, 2013.
4. NEGRÃO, CEZAR O. R. ; ERTHAL, RAUL H. ; ANDRADE, DIOGO E. V. ; SILVA, LUCIANA. W. **A semi-empirical model for the unsteady-state simulation of reciprocating compressors for household refrigeration applications.** Applied Thermal Engineering, v. 31, p. 1114-1124, 2011.

### Complete works published in conferences proceedings

1. FERREIRA, F. C. ; ANDRADE, DIOGO E. V. ; FRANCO, A. T. ; NEGRÃO, CEZAR O. R. **Analysis of the best geometry to be used in rheometric tests for a drilling fluid** , 2015, Caldas Novas, GO - BR. VI National Meeting of Drilling Hydraulics of Oil Wells - ENAHPE, 2015.
2. BALVEDI, G. A. S. ; ANDRADE, DIOGO E. V. ; FRANCO, A. T. ; NEGRÃO, CEZAR O. R. **Experimental investigation of critical strain for viscoplastic materials with different geometries and rheometers** , 2015, Caldas Novas, GO - BR. VI National Meeting of Drilling Hydraulics of Oil Wells - ENAHPE, 2015.
3. FERNANDES, R. R. ; ANDRADE, DIOGO E. V. ; FRANCO, A. T. ; NEGRÃO, CEZAR O. R. **Metodologia para preparação de amostras de um fluido de perfuração para ensaios de reometria (in Portuguese)**, 2015, Caldas Novas, GO - BR. VI National Meeting of Drilling Hydraulics of Oil Wells - ENAHPE, 2015.
4. FERNANDES, R. R. ; ANDRADE, DIOGO E. V. ; FRANCO, A. T. ; NEGRÃO, CEZAR O. R. **Prediction of the time-dependent static yield stress for an oil based drilling fluid under rest through the storage modulus evolution over the aging time**, 2015, Caldas Novas, GO - BR. VI National Meeting of Drilling Hydraulics of Oil Wells - ENAHPE, 2015.
5. ANDRADE, DIOGO E. V. ; BAGGIO, S.C.F. ; BALVEDI, G. A. S. ; FRANCO, A. T. ; NEGRÃO, C. O. R. **The influence of the thermal history on the mechanical behavior of waxy crude oil**, 2015, Rio de Janeiro/RJ - BR - 23rd International Congress of Mechanical Engineering – COBEM 2015.
6. ANDRADE, D. E. V. ; TAKII, B. A. ; FRANCO, A. T. ; NEGRÃO, C. O. R. . **The influence of the initial cooling condition on the flow curve of waxy crude oil**, 2014, Belém/PA – BR - 15th Brazilian Congress of Thermal Sciences and Engineering – ENCIT 2014.
7. SANTOS, T. G. M. ; ANDRADE, D. E. V. ; NEGRÃO, C. O. R. . **Evaluation of different thixotropy models applied to drilling fluids**, 2014, Belém/PA – BR - 15th Brazilian Congress of Thermal Sciences and Engineering – ENCIT 2014.
8. FERNANDES, R. R. ; ANDRADE, D. E. V. ; FRANCO, A. T. ; NEGRÃO, C. O. R. . **Sampling methodology for rheological tests of drilling fluids: a study of the aging time and pre-shearing**, 2014, Belém/PA – BR - 15th Brazilian Congress of Thermal Sciences and Engineering – ENCIT 2014.
9. CRUZ, A. C. B. ; RODRIGUES, M. T. ; ANDRADE, D. E. V. ; FRANCO, A.T. ; NEGRÃO, C. O. R. ; MARTINS, A. L. **Curve fitting for gel breaking of drilling fluids**, 2013, Teresópolis/RJ - BR. V National Meeting of Drilling Hydraulics of Oil Wells - ENAHPE 2013.
10. SANTOS, T. G. M. ; ANDRADE, D. E. V. ; NEGRÃO, C. O. R. ; MARTINS, A. L. **Comparison of different thixotropy models applied to gel breaking of drilling fluids**, 2013, Teresópolis/RJ - BR. V National Meeting of Drilling Hydraulics of Oil Wells - ENAHPE 2013.
11. ANDRADE, D. E. V. ; RODRIGUES, M. T. ; CECCON, E. V. ; CRUZ, A. C. B. ; FRANCO, A.T. ; NEGRÃO, C. O. R. **Proposal of curve fitting for shear stress during gel breaking of thixotropic drilling fluids**, 2013, Ribeirão Preto/SP - BR. 22nd International Congress of Mechanical Engineering – COBEM 2013.
12. ANDRADE, D. E. V. ; CRUZ, A. C. B. ; FRANCO, A.T. ; NEGRÃO, C. O. R. **The influence of cooling and shear on the gel strength of waxy crude oil**, 2013, Ribeirão Preto - SP. 22nd International Congress of Mechanical Engineering – COBEM 2013.
13. NEGRÃO, C. O. R. ; ERTHAL, R. H. ; ANDRADE, D. E. V. ; da SILVA, L. W. **An algebraic model for transient simulation of reciprocating compressors**, 2010, West Lafayette - USA. Proceedings of the 20th International Compressor Engineering Conference, 2010.
14. ANDRADE, D. E. V. ; CUNICO, M. N. ; ERTHAL, R. H. ; NEGRÃO, C. O. R. **Modelo semi-empírico para simulação transiente de comportamentos de compressores em sistemas de refrigeração doméstica (In Portuguese)**, 2008, Curitiba/PR - BR. CREEM, 2008.
15. NEGRÃO, C. O. R. ; ERTHAL, R. H. ; YARED, C. A. ; ANDRADE, D. E. V. ; da SILVA, L. W. **Semi-empirical model for steady state simulation of domestic refrigeration systems.** The XII Brazilian Congress of Thermal Sciences and Engineering, 2008, Belo Horizonte-MG. ENCIT, 2008..

### Expanded Summary published in conferences proceedings

1. FERNANDES, R. R. ; ANDRADE, D. E. V. ; FRANCO, A. T. ; NEGRÃO, C. O. R. **Correlation between storage modulus and gel strength of an oil-based drilling fluid** , 2015, Curitiba - PR / BR. Proceedings of the VII Brazilian Conference on Rheology - BCR, 2015.

### Summary published in conferences proceedings

1. ANDRADE, DIOGO E. V. ; MARCELINO NETO, M. A. ; NEGRÃO, C. O. R. **Determination of the wax appearance temperature and the influence of the wax crystal morphology on the mechanical behavior of a model waxy-oil**, 2015, Curitiba - PR/BR. Proceedings of the VII Brazilian Conference on Rheology - BCR, 2015.
2. ROSSO, N ; ANDRADE, D. E. V. ; NEGRÃO, C. O. R., 2015 **Flow start-up of waxy crude oil in pipelines: an experimental analysis**, Curitiba - PR/BR. Proceedings of the VII Brazilian Conference on Rheology - BCR, 2015.

3. FERREIRA, F. C. ; ANDRADE, D. E. V. ; FERNANDES, R. R. ; FRANCO, A. T. ; NEGRÃO, C. O. R. 2015 **Analysis of rheometric test geometries in rheological characterization of an oil based drilling fluid**, Curitiba - PR/BR. Proceedings of the VII Brazilian Conference on Rheology - BCR, 2015.
4. BALVEDI, G. A. S. ; ANDRADE, D. E. V. ; FRANCO, A. T. ; NEGRÃO, C. O. R. 2015 **Evaluation of the yield strain for a viscoplastic material**, Curitiba - PR/BR. Proceedings of the VII Brazilian Conference on Rheology - BCR, 2015.
5. CRUZ, A. C. B. ; ANDRADE, D. E. V. ; RODRIGUES, M. T. ; CECCON, E. V. ; FRANCO, A. T. ; NEGRÃO, C. O. R. ; MARTINS, A. L., 2014, **Rheological analysis of gelating drilling fluids and its impact on start-up pressures**. In: AAE Technical Conference and Exhibition - The Fluids 2014 Conference, 2014, Houston/USA. AAE - The Fluids 2014 Conference, 2014.
6. ANDRADE, D. E. V. ; CRUZ, A. C. B. ; Franco, A.T. ; NEGRÃO, C. O. R., 2013, **The effect of initial temperature of cooling on the gel strength of waxy crude oil**. Rueil-Malmaison - France. Viscoplastic Fluids: From Theory to Application, 2013.

### Oral Presentation in Conferences

1. Presentation “**Determination of the wax appearance temperature and the influence of the wax crystal morphology on the mechanical behavior of a model waxy-oil**” at the VII Brazilian Conference on Rheology - BCR, 2015 – Curitiba/PR Brazil.
2. Presentation “**The influence of the thermal history on the mechanical behavior of waxy crude oil**” at the 23rd International Congress of Mechanical Engineering – COBEM 2015 - Rio de Janeiro/RJ Brazil.
3. Presentation “**The influence of the initial cooling condition on the flow curve of waxy crude oil**” at the 15th Brazilian Congress of Thermal Sciences and Engineering – ENCIT 2014- Belém/PA - Brazil.
4. Presentation “**Proposal of curve fitting for shear stress during gel breaking of thixotropic drilling fluids**” at the 22nd International Congress of Mechanical Engineering – COBEM 2013- Ribeirão Preto/SP - Brazil.
5. Presentation “**The effect of initial temperature of cooling on the gel strength of waxy crude oil**” at the international conference Viscoplastic Fluids: From Theory to Application 2013 Rueil-Malmaison – France.
6. Presentation “**A semi-empirical model for the transient simulation of reciprocating compressors for household refrigeration applications**” at the XV CREEM 2013 Curitiba/PR – Brazil.

### Organization of Events

1. NEGRÃO, C. O. R. ; FRANCO, A. T. ; JUNQUEIRA, S. L. M. ; ANDRADE, D. E. V. ; DE LAI, F. C. ; OLIVEIRA, G. M. ; ROSSO, N. **VII Brazilian Conference on Rheology - BCR**. 2015. (Curitiba – PR. Brazil - <http://www.bcr2015.ct.utfpr.edu.br/>).

### Awards and Prizes

- 2015** Co-advisor: 2nd Prize Student Paper Contest, SPE 2015 - **Sampling Methodology for an Oil-Based Drilling Fluid in Rheometric Tests**, South American/Caribbean Region - Macae Section, Student Rubens Rosario Fernandes - Conference of The Society of Petroleum Engineers - Undergraduate Level
- 2015** Co-advisor: 2nd Prize Student Paper Contest, ENAHPE 2015 - **Prediction of the time-dependent static yield stress for an oil based drilling fluid under rest through the storage modulus evolution over the aging time**, Student Rubens Rosario Fernandes - VI National Meeting of Drilling Hydraulics of Oil Wells - Undergraduate Level
- 2015** Co-advisor: 3rd Prize Student Paper Contest, ENAHPE 2015 - **Experimental investigation of critical strain for viscoplastic materials with different geometries and rheometers**, Student Guilherme Arnt Serro Balvedi - VI National Meeting of Drilling Hydraulics of Oil Wells - Undergraduate Level
- 2014** Co-advisor: 2nd Prize in the Student Poster Contest, AAE 2014 - **Rheological Analysis of Gelating Drilling Fluids and its Impact on Start-up Pressures**, Ana Cristine B. da Cruz - National Technical Conference & Exhibition, Conference of the American Association of Drilling Engineers, Houston-USA -Undergraduate Level
- 2013** Co-advisor: 1st Prize in the Student Poster Contest, ENAHPE 2013 - **Curve Fitting for Gel Breaking of Drilling Fluids**, Student Ana Cristine B. da Cruz - V National Meeting of Drilling Hydraulics of Oil Wells - Undergraduate Level
- 2013** Co-advisor: 3rd Prize Student Paper Contest, ENAHPE 2013 - **Comparison of Different Thixotropy Models for Gel Breaking of Drilling Fluids**, Student Tainan M. G. dos Santos - V National Meeting of Drilling Hydraulics of Oil Wells - Undergraduate Level