



# CURRICULUM VITAE

**Associate Professor: KAMEL A. K. GADALLAH**

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## PERSONAL INFORMATION

**Date of birth** 15/10/1971  
**Nationality** Egyptian  
**Address** AL-Azhar University, Faculty of Science, Astronomy Dept.  
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## QUALIFICATIONS

- 2010 PhD in Physics (Astrophysics):** entitled "Structure and Optical Properties of Cosmic Nanoparticles: UV irradiation and Thermal Processing of Carbonaceous Materials" Friedrich-Schiller-University Jena, **Germany**
- 2001 M.Sc. (Astronomy)** entitled "Ionization State within Interstellar Clouds" Cairo Uni., **Egypt**
- 1997 Postgraduate courses** in Astrophysics: Cairo University, **Cairo, Egypt**
- 1994 B.Sc. in Astronomy & Meteorology:** Al-Azhar University, Cairo, **Egypt**

## POSITIONS

- 2018 Postdoctoral position:** LERMA lab, Cergy-Pontoise University, Paris, **France**
- 2017 - current Associate Professor:** Astronomy Dept., Faculty of Science, Al-Azhar University, **Egypt**
- 2015 Visitor,** Heriot-Watt University, **UK**
- 2012 - 2017 Lecturer:** Astronomy Dept., Faculty of Science, Al-Azhar University, **Egypt**
- 2010 - 2011 Postdoctoral position:** AIU, Friedrich-Schiller-University Jena, **Germany**
- 2006 -2010 Doctoral Scholarship:** AIU, Friedrich-Schiller-University Jena, **Germany**
- 2001-2006 Assistant Lecturer:** Astronomy. Dept., Faculty of Science, Al-Azhar University, **Egypt**
- 1997-2001 Demonstrator:** Astronomy Dept., Faculty of Science, Al-Azhar Uni., **Egypt**
- 1995-1997 Researcher assistant:** Helwan Observatory, Cairo, **Egypt**

## LIST OF PUBLICATIONS

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### PAPERS

- |    |   | Impact Factor |
|----|---|---------------|
| 18 | A. Shokry, Th. Rivinius, A. Mehner, C. Martayan, W. Hummel, R. H. D. Townsend, M. A. Hamdy, M. M. Beheary, <b>K. A. K Gadallah</b> , and M. S. Abo-Elazm, Stellar parameters of Be stars observed with X-shooter, <b>Astronomy &amp; Astrophysics</b> , 609, A108, <b>2018</b><br>DOI: <a href="https://doi.org/10.1051/0004-6361/201731536">https://doi.org/10.1051/0004-6361/201731536</a>                      | <b>5.185</b>  |
| 17 | A. Shokry, S. M. Saad , M. A. Hamdy, M. M. Beheary, M. S. Abolazm, <b>K. A. Gadallah</b> , M. H. El-Depsey, M. S. Al-Gazzar, Photometric Study of Two Eclipsing Binary Stars: Light Curve Analysis and System Parameters for GU CMa and SWASP J011732.10+525204.9, <b>New Astronomy</b> , 59, 8–13, <b>2018</b> .<br><a href="https://doi.org/10.1016/j.newast.2017.08.005">DOI: 10.1016/j.newast.2017.08.005</a> | <b>1.085</b>  |
| 16 | Abdallah A. M. Ali, <b>Kamel A. K. Gadallah</b> , M. M. Beheary, Abdelrazek M. K. Shaltout, SED models of PAHs in the mid-IR band under interstellar medium conditions, The 9 <sup>th</sup> International Conference for Basic Sciences, Faculty of Science, Al-Azhar University, 27 – 29 March, <b>2017</b> , Cairo, Egypt.  |               |
| 15 | <b>Kamel A. K. Gadallah</b> , Demian Marchione, Sven P. K. Koehler and Martin R. S. McCoustra, Molecular Hydrogen Production from Amorphous Solid Water during Low Energy Electron Irradiation, <i>Physical Chemistry Chemical Physics</i> , 19, 3349-3357, <b>2017</b> .<br><a href="https://doi.org/10.1039/C6CP06928B">DOI: 10.1039/C6CP06928B</a>   | <b>4.449</b>  |
| 14 | I Zead, SM Saad, MR Sanad, MM Behary, <b>K Gadallah</b> , Spectral and photometric behavior of SU UMa during quiescence and outburst states, <b>New Astronomy</b> , 52, 122-132, <b>2017</b><br><a href="https://doi.org/10.1016/j.newast.2016.10.010">DOI:10.1016/j.newast.2016.10.010</a>   | <b>1.085</b>  |
| 13 | M. S. Darwish, M. S. Saad, M. A. Hanna, M. A. Nasser, M. A. Hamdy, M. M. Beheary, <b>K. A. Gadallah</b> , A. Shokry, New CCD photometry of the eclipsing binary system V1067 Her, <b>New Astronomy</b> , 50, 12-18, <b>2017</b><br><a href="https://doi.org/10.1016/j.newast.2016.06.005">DOI:10.1016/j.newast.2016.06.005</a>  | <b>1.085</b>  |
| 12 | M. S. Darwish, M. M. Elkhateeb, M. I. Nouh, S. M. Saad, M. A. Hamdy, M. M. Beheary, <b>K Gadallah</b> , I. Zaid, Orbital solution and evolutionary state for the eclipsing binary 1SWASP J080150.03+471433.8, <b>New Astronomy</b> , 50, 37-42, <b>2017</b><br><a href="https://doi.org/10.1016/j.newast.2016.07.007">DOI:10.1016/j.newast.2016.07.007</a>  | <b>1.085</b>  |
| 11 | M. S. Saad, M. S. Darwish, M. A. Nasser, M. A. Hamdy, M. M. Beheary, <b>K. Gadallah</b> , D. Fouda, The first CCD photometric analysis and modeling for short period eclipsing binary system 1SWASPJ210423.7+073140.4., <b>New Astronomy</b> , 47, 24–28, <b>2016</b><br><a href="https://doi.org/10.1016/j.newast.2016.02.001">DOI:10.1016/j.newast.2016.02.001</a>  | <b>1.085</b>  |

- 10 **Kamel A. K. Gadallah**, Hydrocarbon analogs of cosmic dust to trace the solid carbon abundance in the interstellar medium, **Advances in Space Research**, 55(2), pp. 705-715, **2015**.  
[doi: http://dx.doi.org/10.1016/j.asr.2014.10.022](http://dx.doi.org/10.1016/j.asr.2014.10.022) **1.409**
- 9 **Kamel A. K. Gadallah**, Nano-structural characterizations: Elongation of graphene layers within solid hydrocarbons, **Physical Science International Journal**, 5(2), 123-136, **2015**.  
[DOI : 10.9734/PSIJ/2015/13453](http://dx.doi.org/10.9734/PSIJ/2015/13453)
- 8 **Kamel A. K. Gadallah**, Thermal-processing of carbon dust around a cool star, **Al Azhar Bulletin of Science**, Vol. (25), No. 1, June, 1-6, **2014**.
- 7 **Kamel A. K. Gadallah**, Harald Mutschke, Cornelia Jäger, Analogs of solid nanoparticles as precursors of aromatic hydrocarbons, **Astronomy & Astrophysics**, 554, A12, **2013**. **5.185**  
<http://adsabs.harvard.edu/abs/2013A%26A...554A..12G>
- 6 **Kamel A. K. Gadallah**, Harald Mutschke, Cornelia Jäger, Mid-infrared spectroscopy of UV irradiated hydrogenated amorphous carbon (HAC) materials, **Astronomy & Astrophysics**, 544, A107, **2012**. **5.185**  
<http://adsabs.harvard.edu/abs/2012A%26A...544A..107G>
- 5 **Kamel A. K. Gadallah**, Harald Mutschke, Cornelia Jäger, UV-irradiated hydrogenated amorphous carbons (HACs) as carriers of the interstellar UV bump, **EAS Publications Series 58 (2012)**, 389-393  
<http://www.easjournal.org/action/displayAbstract?fromPage=online&aid=8838223>
- 4 **Kamel Gadallah**, H. Mutschke, and C. Jäger, UV irradiation of hydrogenated amorphous carbon (HAC) as a carrier candidate of the interstellar UV bump at  $4.6 \mu\text{m}^{-1}$ , **IAU Symposium, volume 280 of IAU Symposium**, page 210P, May **2011**.  
<http://adsabs.harvard.edu/abs/2011IAUS..280P.210G>
- 3 **Kamel A. K. Gadallah**, Harald Mutschke, Cornelia Jäger, UV irradiated hydrogenated amorphous carbon (HAC) materials as a carrier candidate of the interstellar UV bump at 217.5 nm, **Astronomy & Astrophysics**, 528, A56, **2011**. **5.185**  
<http://adsabs.harvard.edu/abs/2011A%26A...528A..56G>
- 2 O. M. Shalabiea, **K. A. Khalil**, M.S. EL-Nawawy, Ionization State in PDR (IC 63 nebula), **Astrophysics & Space Science**, 289 (1-2): 77-93, **2004**. **1.678**  
<http://adsabs.harvard.edu/abs/2004Ap%26SS.289...77S>
- 1 **K. A. Khalil Gadallah**, O.M. Shalabiea, M.S. EL-Nawawy, Ionization State in the Dense cloud NGC2264", **Chem 2**, held in Cairo, Egypt, **2002**, 459-467.

## GENERAL INTEREST: ASTROPHYSICS

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- **Laboratory astrophysics:**

- Physics and chemistry on the surface of interstellar grains
- Laboratory simulation of cosmic nano-particles (thin films of hydrocarbons, water ices,.....) in ultra-high vacuum.
- Electron and UV irradiation, and thermal- processing within Vacuum technology (high-vacuum and ultra-high vacuum).
- The laser ablation/chemical vapor deposition techniques.
- UV-VUV and IR Spectroscopy.

- **Interstellar matter:**

- Physics and chemistry of matter (solid, gas, and plasma) in the interstellar space.
- Contraction and gas-phase chemical models (UMIST models) of interstellar clouds.
- Astrochemical abundances and ionization states in the interstellar medium (ISM).
- Modelling the spectral energy distribution (SED) of Cosmic dust grains.

## METHODOLOGY

- Production of nano- materials (thin films, nanoparticles) by laser ablation and vapor condensation.
- Thermal processing, UV & plasma irradiation, low energy electron irradiation.
- Spectroscopic analysis of experimental and interstellar spectra.
- Transmission electron microscope (TEM).
- Modeling: spectroscopy, Astrochemical models

## CURRENT WORK

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- **Physics and Chemistry at the surface of interstellar grains:** a project at LERMA, Cergy-Pontoise University, Paris, France that focuses on the Physics and chemistry on the surface of interstellar grains using ultra-high vacuum system (VENUS) in LERMA lab. Generally, it aims to study two points:
  - 1) the sticking of the complex organic molecules (Methanol, ...) on cold surfaces such as gold, icy water and  $^{13}\text{CO}$  surfaces to build an Astrophysical model interstellar cold grains;
  - 2) H-irradiation of Methanol deposited on these underlayers.
- **The evolution of the dust SED within the AGN disk:** multi-wavelength studies from X-ray to F-IR when the matter in the AGN accretion disk is processed in harsh conditions. Interstellar matter is exposed to strong radiation field originating from the highly star-formation regions located around the highly energetic source AGN. The inner oblate surface of the AGN disk is in principle more affected by the x-ray radiation. The evolution of the dust SED with the profiles of many physical conditions (radiation field, temperatures and density) from the center passing through the torus.

## TEACHING COURSES

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**1998-2006** *Practical & Exercises for undergraduate students:*

Astrophysics,  
Interstellar matter  
General astronomy,  
Spherical astronomy

**2012-current** *Lectures for undergraduate students:*

Astrophysics I and II,  
Interstellar matter  
Planetary atmospheres  
Variable stars

**2018-current** *Lectures for postgraduate students:* Special course (Astrophysics)

**AWARDS** Sultana N. Nahar Prize of the best research in astronomy for the academic year  
2014/2015 (Distinction in Astronomy Research)  
[http://www.astronomy.ohio-state.edu/~nahar/physstem-  
alazharu.html#awardees](http://www.astronomy.ohio-state.edu/~nahar/physstem-alazharu.html#awardees)

## SOME OF CONFERENCES

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- 4 The 9<sup>th</sup> International Conference for Basic Sciences, Faculty of Science, Al-Azhar University, 27 – 29 March, **2017**, Cairo, Egypt.
- 2 PAHs and the Universe conference, May 31<sup>st</sup> - June 4<sup>th</sup>, **2010**, **Toulouse, France**.
- 1 Cosmic Dust-Near&Far, **2008** (Sept. 8<sup>th</sup> -12<sup>th</sup>), **Heidelberg, Germany**.

## SOME OF WORKSHOPS

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- 4 Workshop of Recent Trends in Astronomy and Space Sciences, 22<sup>nd</sup>-23<sup>rd</sup> Oct. **2013**, Helwan observatory, Cairo, **Egypt**.
- 3 Laboratory Astrophysics external Retreat, 15<sup>th</sup>-16<sup>th</sup> October **2010**, Eisenach, **Germany**.
- 2 Laboratory Astrophysics Workshop, 21<sup>st</sup> – 22<sup>nd</sup> January **2008**, Freyburg, **Germany**.
- 1 School/Workshop of the Total Solar Eclipse, 22<sup>nd</sup> Mar.- 6<sup>th</sup> Apr. **2006**, Bibliotheca of Alexandrina, Alexandrina, **Egypt**.

## SCIENTIFIC PROJECTS

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### 1- PI of STDF Project (ID: 6119)

**Title:** Forming complex carbonaceous molecules such as  $C_{60}$  and  $C_{70}$  fullerenes under space conditions

**Place of implementation:** Heriot-Watt University, UK



Science & Technology Development Fund



Ministry of Scientific Research



Al-Azhar University Faculty of Science



Heriot-Watt University, UK

### 2- PI of STDF Project (ID: 30565) (Current work)

**Title:** Physics and chemistry on the surface of interstellar grains

**Place of implementation:** LERMA Lab., Cergy-Pontoise University, France within the framework of the Egypt-France Cooperation Program (STDF - IFE).



Science & Technology Development Fund



Ministry of Scientific Research



Al-Azhar University Faculty of Science



LERMA, Cergy-Pontoise University, France