

# Post-doctoral position in Physics

Lunds universitet, Lunds Tekniska Högskola, Fysiska institutionen

Lund University was founded in 1666 and is repeatedly ranked among the world's top universities. The University has around 47 000 students and more than 8 800 staff based in Lund, Helsingborg and Malmö. We are united in our efforts to understand, explain and improve our world and the human condition.

Lund University welcomes applicants with diverse backgrounds and experiences. We regard gender equality and diversity as a strength and an asset.

The Division of Atomic Physics at the Faculty of Engineering (LTH), Lund University, Sweden has a staff of over 50 researchers including guest researchers and graduate students. The research at the division is mainly based on the use of lasers, ranging from diode lasers to terawatt lasers at the High-Power Laser Facility. Some areas of research are: physics with high intensity laser pulses, attosecond science. VUV/XUV laser spectroscopy, quantum electronics, quantum optics and solid state spectroscopy, applied molecular spectroscopy, laser applications in medicine and biology, and industrial applications. More information can be found at <http://www.atomic.physics.lu.se/>.

At the Lund Attosecond Science Center, three attosecond sources are being developed and used for applications: An intense attosecond beamline with output energies in the microjoule range for XUV-XUV pump/probe experiments, an attosecond source based on a 1 kHz repetition rate titanium sapphire laser system used in interferometric measurements and a high-repetition rate (200 kHz) system based upon Optical Parametric Chirped Pulse Amplification (OPCPA) technology. Our scientific goal is to study ultrafast dynamical processes in a variety of systems ranging from atoms and molecules in gas phase to nanostructures on surfaces.

**Subject description** We are looking for a postdoctoral fellow

- to develop an isolated attosecond pulse source and its applications, using few-cycle laser pulses obtained after post compression from a 1-kHz titanium sapphire laser system
- to develop the intense attosecond beam line in order to do XUV-XUV pump/probe experiments.

**Work duties** The main duties involved in a post-doctoral position is to conduct research. Teaching may also be included, but up to no more than 20% of working hours. The position shall include the opportunity for three weeks of training in higher education teaching and learning.

The work will be to operate a femtosecond titanium-sapphire laser system, generate attosecond pulses by high-order harmonic generation in gases, transport and manipulate XUV radiation, and perform applications in atomic and molecular systems in gas phase. The work may include both temporal and spatial characterization of ultrashort XUV pulses. Supervision of master degree projects and PhD students is expected.

**Qualification requirements** Appointment to a post-doctoral position requires that the applicant has a PhD, or an international degree deemed equivalent to a PhD, within the subject of the position, completed no more than three years before the last date for applications. Under special circumstances, the doctoral degree can have been completed earlier.

Additional requirements:

- Very good oral and written proficiency in English.
- Experience with femtosecond laser systems and/or XUV radiation

**Assessment criteria and other qualifications** This is a career development position primarily focused on research. The position is intended as an initial step in a career, and the assessment of the applicants

will primarily be based on their research qualifications and potential as researchers. Particular emphasis will be placed on research skills within the subject.

For appointments to a post-doctoral position, the following shall form the assessment criteria:

- A good ability to develop and conduct high quality research.
- Teaching skills.

Additional assessment criteria:

- Experience with femtosecond lasers and ultrafast optics
- Experience in high-order harmonic generation and attosecond physics
- Other skills, e.g. instrumentation programming, data analysis, vacuum techniques, mechanical design.

Consideration will also be given to good collaborative skills, drive and independence, and how the applicant's experience and skills complement and strengthen ongoing research within the department, and how they stand to contribute to its future development.

**Terms of employment** This is a full-time, fixed-term employment of a maximum of 2 years. The period of employment is determined in accordance with the agreement "Avtal om tidsbegränsad anställning som postdoktor" ("Agreement on fixed-term employment as a post-doctoral fellow") between Lund University, SACO-S, OFR/S and SEKO, dated 4 September 2008.

**Instructions on how to apply** Applications shall be written in English. Please draw up the application in accordance with LTH's Academic qualifications portfolio – see link below. Upload the application as PDF-files in the recruitment system. Read more: <http://www.lth.se/index.php?id=71223>

LTH is Lund University's Faculty of Engineering. At LTH we educate people, build knowledge for the future and work hard for the development of society. We create space for brilliant research and inspire creative advancements in technology, architecture and design. We have nearly 10,000 students. Every year, our researchers – many of whom work in world-leading profile areas – publish around 100 theses and 2 000 scientific findings. In addition, many of our research and degree projects are transformed into innovations. Together we explore and create – to benefit the world.

The Department of Physics is with a staff of about 400 scientists and educators one of the largest departments within Lund University. There are seven research divisions and a number of research centra within the department. The research activities at the department cover a broad spectrum of modern physics. [www.fysik.lu.se/english](http://www.fysik.lu.se/english).

We kindly decline all sales and marketing contacts.

<b>Type of employment</b>	Temporary position
<b>Contract type</b>	Full time
<b>First day of employment</b>	2018-03-01
<b>Salary</b>	monthly
<b>Number of positions</b>	1
<b>Full-time equivalent</b>	100
<b>City</b>	Lund
<b>County</b>	Skåne län
<b>Country</b>	Sweden
<b>Reference number</b>	PA2018/301
<b>Contact</b>	Anne L'Huillier, professor, +46 46 222 7661, <a href="mailto:anne.lhuillier@fysik.lth.se">anne.lhuillier@fysik.lth.se</a>
<b>Union representative</b>	OFR/ST:Fackförbundet ST:s kansli, 046-222 93 62 SACO:Saco-s-rådet vid Lunds universitet, 046-222 93 64
<b>Published</b>	2018-01-29
<b>Last application date</b>	2018-02-26
<b>Link to ad</b>	<a href="http://lu.varbi.com/what:job/jobID:189682/">http://lu.varbi.com/what:job/jobID:189682/</a>

# Postdoktor i Fysik

Lunds universitet, Lunds Tekniska Högskola, Fysiska institutionen

Lunds universitet grundades 1666 och rankas återkommande som ett av världens främsta lärosäten. Här finns omkring 47 000 studenter och mer än 8 800 medarbetare i Lund, Helsingborg och Malmö. Vi förenas i vår strävan att förstå, förklara och förbättra vår värld och människors villkor.

Lunds universitet välkomnar sökande med olika bakgrund och erfarenheter. Jämställdhet, lika villkor och mångfald är grundläggande principer för alla delar av vår verksamhet.

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LTH – Lunds Tekniska Högskola – är den tekniska fakulteten vid Lunds universitet. På LTH utbildar vi människor, bygger kunskap för framtiden och arbetar hårt för att utveckla samhället. Vi skapar utrymme för briljant forskning och inspirerar till kreativ utveckling av teknik, arkitektur och design. Här läser närmare 10 000 studenter. Varje år publicerar våra forskare – varav många verkar inom världsledande profilområden – omkring 100 avhandlingar och 2 000 vetenskapliga rön. En rad forskningsresultat och studentarbeten förädlas till innovationer. Tillsammans utforskar och skapar vi – till nytta för världen.

Fysiska institutionen är en av Lunds universitets största institutioner med cirka 400 anställda. Vid institutionen finns sju forskningsavdelningar och ett antal större centrumbildningar. Forskningen vid institutionen täcker ett brett spektrum av modern fysik. [www.fysik.lu.se](http://www.fysik.lu.se).

Vi undanber oss alla kontakter från annonsförsäljare, rekryterings- och bemanningsföretag på grund av statliga upphandlingsregler.

<b>Anställningsform</b>	Tidsbegränsad anställning
<b>Anställningens omfattning</b>	Heltid
<b>Tillträde</b>	2018-03-01
<b>Löneform</b>	månadslön
<b>Antal lediga befattningar</b>	1
<b>Sysselsättningsgrad</b>	100
<b>Ort</b>	Lund
<b>Län</b>	Skåne län
<b>Land</b>	Sverige
<b>Ref. nr.</b>	PA2018/301
<b>Kontakt</b>	Anne L'Huillier, professor, +46 46 222 7661, <a href="mailto:anne.lhuillier@fysik.lth.se">anne.lhuillier@fysik.lth.se</a>
<b>Facklig företrädare</b>	OFR/ST:Fackförbundet ST:s kansli, 046-222 93 62 SACO:Saco-s-rådet vid Lunds universitet, 046-222 93 64
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