

The Solar Energy Research Institute of Singapore (SERIS) is Singapore's national institute for applied solar energy research. SERIS has the stature of a National University of Singapore (NUS) university - level Research Institute. SERIS conducts industry - oriented research and development as well as use - inspired basic research in the field of solar energy conversion. The institute collaborates closely with industry.

Open Position : **Research Associate / Research Fellow** (BIPV System Specialist)

SERIS Department : SES Cluster

Group : Centre of Excellence for BIPV

JOB ID : JOB-2019-0230095

Job Scope:

The Research Fellow / Associate will be actively involved in the development of system technologies for building-integrated photovoltaics (BIPV). This includes system simulations based on 3D models to assess the impact of shading on the design, layout and inter-connections of BIPV systems, be it on facades, parapets shading devices or semi-transparent windows (just to name a few).

The work will also include the practical assessment and test-bedding of different electrical solutions, be it on-grid, stand-alone with storage or the direct coupling with DC devices. For on-grid systems, different electrical systems with power optimisers, micro-inverters and string inverters shall be tested and evaluated under different shading conditions. Of particular interest are system losses and reliability issues (e.g. hot spots) arising from the dynamic irradiance conditions throughout the day. The RF/RA is also expected to build mock-ups and/or testbeds in a real-world environment to demonstrate the feasibility of the proposed solutions. Such developments shall comply with all relevant power grid rules & regulations and electrical standards.

The RF/RA shall compile the findings and innovations in an interactive database for BIPV in Singapore and share them in outreach activities with the wider community of stakeholders, including industry, government agencies, architects, developers, building professionals, PV system integrators, EPCs and installers. In addition, the RF/RA will be engaged in R&D and service activities with other research groups and/or industry partners, including (but not limited to) solar PV systems in Singapore.

Activities also include:

- Review current publications, and derive innovative solutions for BIPV system integration in Singapore;
- Conduct BIPV system simulations using software tools such as PVSyst, PV*Sol or others, based on a thorough understanding for the transpositions models from global horizontal irradiance to in-plane irradiance for both the direct & diffuse portions.
- Interlink results with BEST (building energy simulation) and/or BIM (building information modelling) tools;
- Other duties as they evolve.

Requirements:

Essential:

- Master / PhD degree in Electrical Engineering (or comparable studies);
- Minimum 3 years' relevant experience with building simulations and PV system modelling;
- Minimum 2 years' relevant experience with PV system design and installation;
- Detailed knowledge of electrical installations in buildings;
- Familiarity with relevant grid codes & regulations, as well as electrical standards;
- In-depth knowledge of 3D building simulations and interaction with irradiance models;
- Proven track record with industry projects;
- Relevant publications in international peer-reviewed journals;
- High level of communication and interpersonal skills;
- Demonstrated, outstanding project management experience;
- Ability to work collaboratively with colleagues

Desirable

- Experience in design / implementation / monitoring of building-integrated photovoltaic (BIPV) systems on facades;
- Ability to present work to other scientists and industry partners in the field in a clear and concise manner;

Interested candidates please submit your application (with CV) via JobsBank at:

<https://www.mycareersfuture.sg/job/others/research-fellow-research-associate-national-university-singapore-73141e216a3c3ff4ac7a09a1b2533bb1>

Or Mail your CV to:

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We regret that only shortlisted candidates will be notified.

For more information on SERIS, please visit www.seris.sg