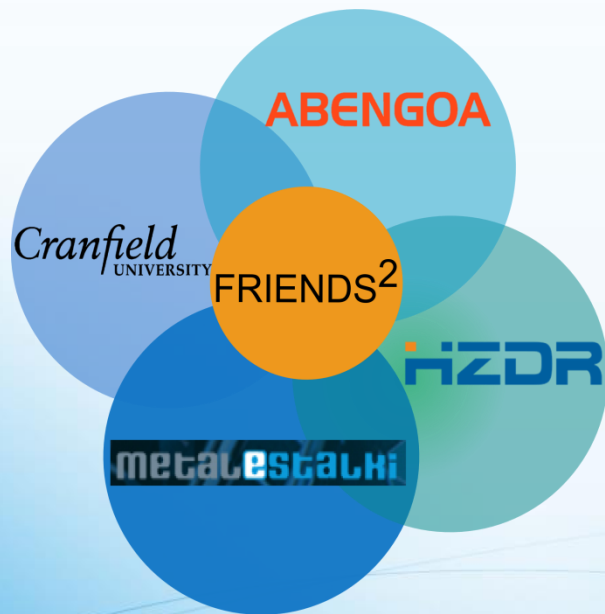


FRamework of Innovation for Engineering of New Durable Solar Surfaces (FRIENDS²)



**Advanced coating and characterization
techniques**

Workshop, September 19th – 20th, 2016

**Helmholtz-Zentrum Dresden-Rossendorf,
Germany**



Information for participants

- ❑ Chair persons: Sibylle Gemming (Dresden, Chemnitz), Matthias Krause (Dresden)
- ❑ Scope: Introduction in "Advanced coating and characterization techniques" by tutorials and hands-on training
- ❑ Target group: Consortium members of EU-RISE-project FRIENDS², interested PhD students, scientists, and engineers
- ❑ Participation: Free of charge, at maximum 20 participants
- ❑ Time & location: Mon, 19th and Tue, 20th September 2016, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Bautzner Landstraße 400, 01328 Dresden, Germany
- ❑ Culinary: Free refreshments and Monday evening dinner, possibility for lunch in the canteen of the HZDR
- ❑ Contact/
Registration: Dr. Matthias Krause, Helmholtz-Zentrum Dresden-Rossendorf, 01314 Dresden, phone: +49 351 2603578, email: matthias.krause@hzdr.de

Program, Monday, September 19th, 2016

| | |
|---------------|---|
| 7:45 - 8:30 | Registration |
| 8:30 - 9:00 | Welcome |
| 9:00 - 10:00 | D. Rafaja, TU BA Freiberg, Combining X-ray and TEM techniques for microstructure studies on thin films nanocomposites |
| 10:00 - 10:30 | Coffee break |
| 10:30 - 11:30 | R. Heller, F. Munnik, HZDR, From hydrogen to heavy elements - depth resolved compositional analysis of materials by ion beam techniques |
| 11:30 - 12:30 | F. Lungwitz, E. Schumann, HZDR, UV-Vis-NIR spectroscopic ellipsometry and spectrophotometry of thin films |
| 12:30 - 14:00 | Lunch and coffee |
| 14:00 - 17:00 | Experiments - 1 |
| 17:00 - 17:15 | Closing remarks |
| 19:30 - 22:00 | Dinner in the city center |

Program, Tuesday, September 20th, 2016

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|---------------|--|
| 8:30 - 9:30 | M. Krause, HZDR, From micro to nano - Fundamentals and recent developments of Raman spectroscopy |
| 09:30 - 10:00 | Coffee break |
| 10:00 - 11:00 | J. Grenzer, HZDR, Advanced X-Ray analysis of thin films |
| 11:00 - 12:00 | B. Szyszka, TU Berlin, Overview on recent development on coating technologies for solar applications |
| 12:00 - 13:30 | Lunch break and coffee |
| 13:30 - 16:30 | Experiments – 2 |
| 16:30 - 17:00 | Final discussion and closing remarks |
| 17:00 | Departure |



Experiments and lab tour

| Method/ Experiment | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Supervisor |
|--|---------------------------|------------------------|---------------------------|-----------------------|---|-----------------------------|
| Rutherford Backscattering (RBS), channeling RBS (c-RBS) | Mon, 14:00 – 17:00 | | Tue 13:30 – 16:30 | | | R. Heller |
| Ellipsometry and Reflectometry (SE+R) | | Mon, 14:00 – 17:00 | | Tue 13:30 – 16:30 | | E. Schumann, F. Lungwitz |
| micro-Raman | Tue, 13:30 – 16:30 | | Mon, 14:00 – 17:00 | | | M. Krause |
| in situ Raman, cluster tool | | Tue, 13:30 – 16:30 | | Mon, 14:00 – 17:00 | | A. Schneider, D. Janke |
| X-Ray Diffraction | | | | | Mon, 14:00 – 17:00 AND Tue, 13:30 – 16:30 | J. Grenzer |
| Lab tour - PVD chambers | Mon, during RBS, c-RBS | Monday, during SE+R | Tue, during RBS, c-RBS | Tue, during SE+R | Mon or Tue | M. Mesko |